

Specificity-driven Syntactic Derivation: A New View on Long-distance Agreement

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In this paper I propose a new cyclic agree analysis of long-distance agreement (LDA). The analysis rests upon the idea that specificity, which is arguably one of the main basic concepts of morphological theory, is at work in syntactic derivations, too. In the new analysis, LDA is the result of ordered operation application at an extremely local level conditioned by a specificity condition, the Maximize Matching Principle, which is an extension of Chomsky’s (2001) Maximize Matching Effects Condition. The new analysis accounts for a number of properties of LDA: It captures the parasitic nature of the construction (matrix V can only show LDA if embedded V shows local agreement), offers a principled explanation for the non-intervening embedded external argument, accounts for the blocking of LDA in the presence of left-peripheral material, derives scope effects, and is flexible enough to account for cross-linguistic variation. The new analysis also allows for a new perspective on the relation between LDA and topicality in Tsez: I argue that LDA is not dependent on topicality, but that both the topic interpretation and LDA fall out as a side effect of V-to-I movement.

1 Background

It is widely assumed that syntactic computation does not operate on large portions of structure, but that the operation space available is restricted to a small “window” (e.g. Chomsky 2000, 2005, 2006, Epstein and Seely 2002, ultimately going back to Miller 1956, who, in reviewing a number of contemporary psychological experiments, observes that working memory capacity seems to be limited to around seven elements [*chunks*] such as words, letters, or digits). The system thus repeatedly “forgets” information, and has no access to future stages of the derivation, which reduces the overall complexity of the syntactic computation. Within the minimalist program, the reduction of operative complexity is a main prerequisite to model a grammar system conforming to

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the Strong Minimalist Thesis, that is, an optimally designed, efficient computational system satisfying interface conditions (Kawahima and Kitahara 2004).

(1) *Strong Minimalist Thesis (SMT; Chomsky 2000:96):*

Language is an optimal solution to legibility conditions.

A possible implementation of this idea is the notion of phases as syntactic domains. In a phase-based syntax, the computational complexity is reduced by assuming that at various points of the computation, “older” parts of the current structure are transferred (= “spelled out”) to the interfaces PF and LF, so that deeper embedded elements cannot be accessed at the current stage of derivation. The size of the transferred portion of structure is not arbitrary; see section 2.1. The effect of this cyclic spellout mechanism is formalised in terms of a constraint, the *Phase Impenetrability Condition* (PIC).

(2) *Phase Impenetrability Condition (Chomsky 2000:108, Chomsky 2001:13):*

The domain of a head X of a phase XP is not accessible to operations outside XP; only X and its edge are accessible to such operations.¹

At first glance, this view seems to be challenged by empirical data showing syntactic dependencies that do not seem to be restricted by a locality condition. One such example is long distance agreement (LDA), which is an agreement relation that seems to hold across the boundaries of locality domains. Basically, the configuration of LDA is such that the verb of a root clause agrees with an argument of an embedded clause. It occurs e.g. in Tsez, Kwarshi, Kutchi Gujarati, Hindi-Urdu, Blackfoot, Chukchee, and Itelmen (Polinsky and Potsdam 2001, Khalilova 2007, Grosz and Patel 2006, Bhatt 2005, Bobaljik and Wurmbrand 2005, Bošković 2007, among others). Examples from Tsez, Khwarshi and Kutchi Gujarati are given in (3).

- (3) a. eni-r [už-ā **magalu** **b-āc'-ru-li**]
 mother-DAT [boy(CL:1)-ERG **bread(cl:3)**.ABS **cl:3-eat-PSTPRT-NMLZ**].CL:4
 b-iy-xo
 cl:3-knows-PRS
 ‘The mother knows the boy ate the bread’ (Tsez)
- b. lšet'u-l **y-iq'-še** goli [uža **bataxu**
 mother/OBL-LAT **cl:5-know-PRS** COP [boy/ERG **bread(cl:5)**
 y-acc-u]
 cl:5-eat-PSTPRT].CL:4
 ‘Mother knows that the boy ate bread’ (Khwarshi)
- c. Valji-ne [**chopri** vanch-**vi**] par-**i**
 Valji(M)-DAT [**book.f** read-**inf.f**] have.to-PFV.**f**
 ‘Valji had to read the book’ (Kutchi Gujarati)

Given the assumption that syntactic computation operates on minimal portions of structure, the desideratum is to analyse this type of data in such a way that the seeming non-local dependencies come out as local dependencies. Under this point of view, the term “long-distance agreement” merely refers to the empirical observation that agreement seemingly crosses locality domains; it does not characterise the actual

¹The edge of a head X is the residue outside of X'; it comprises specifiers of X and adjuncts to XP (Chomsky 2001:13).

agreement relation, which is local.

Previous analyses basically took two routes. One class of analyses can be termed “direct agree theories”. In these approaches, the matrix verb directly agrees with the embedded internal argument, as (a) they are not separated by a phase boundary (Boeckx 2004, Bhatt 2005, Bobaljik and Wurmbrand 2005, Mahajan 1989, Polinsky and Potsdam 2001, Chandra 2005), or (b) because phase boundaries are assumed not to hold for Agree (Bošković 2007). In direct agree analyses of the (a) type, there is a local relation between the higher probe and the embedded internal argument. The local relation has been accounted for in several ways:

- The lower object is raised to the higher clause (Bobaljik and Wurmbrand 2005 on restructuring infinitives in German; Mahajan 1989, Chandra 2005);
- the lower object is covertly moved to the edge of the embedded clause (Polinsky and Potsdam 2001 on LDA in Tsez; Bruening 2001);
- the lower object is located at the edge of the embedded IP or vP. In biclausal LDA structures, the embedded clause in LDA tends to be an IP. However, I is not a phase head, so that material down to the edge of v is visible for the higher verb. Consequently, the seeming LDA is in fact standard agreement (Richards 2008).

Direct agree analyses of the (b) type, on the other hand, rely on genuine long-distance agreement in that agreement can cross locality domains that are valid for movement.

The second type of approaches are cyclic agree theories. In these analyses, the agreement relation is established between the matrix verb and the embedded verb, which has previously agreed with the embedded object (e.g. Chomsky 2001, Butt 1993, 1995, Legate 2005).

Direct agree analyses are generally subject to two potential problems. Firstly, the cross-linguistic observation that the embedded external argument does not intervene does not come for free; it has to be stipulated. Secondly, they do not capture the cross-linguistic generalisation that LDA can only appear if local agreement takes place in the embedded clause (this generalisation will be addressed in more detail in section 4.1.1). However, neither are cyclic agree analyses unchallenged. The first point of critique is the same as above: In the previously proposed cyclic agree analyses, there is no principled reason why the embedded subject does not intervene between the matrix verb and its goal. Secondly, cyclic agree violates the Activity Condition.

(4) *Activity Condition (Chomsky 2001):*

Inactive elements are not accessible for further operations. (An element is rendered inactive if its uninterpretable features are eliminated.)

(4) has the effect that the embedded v or I, of which the uninterpretable features have already been dealt with, are not accessible for an agreement relation with matrix v (though they may be still in matrix v’s search space). Cyclic agree should thus not take place in derivations resting upon this constraint. However, Nevins (2004) and Obata and Epstein (2008) offer alternative accounts of Activity Condition effects that work without this constraint. Thus, it does not seem too far-fetched after all to devise

a system in which the Activity Condition is not an effective constraint.

The goal of this paper is to propose a new cyclic agree analysis of LDA which is based on the idea that LDA is the result of ordered operation application at an extremely local level conditioned by a specificity condition on syntactic derivation. The new analysis offers an account of why the embedded external argument never intervenes, and opens a new perspective on the correlation between LDA and topicality in Tsez.

2 Theoretical Background

2.1 Clausal Architecture, Phasehood and Argument Structure

A prerequisite for a minimalist system is that the operation space of syntactic computations is as small as possible. However, the operation space cannot be maximally restricted; it must be big enough to yield a successful derivation. That means that the currently active head must have access to the next-lower head for selection and head movement. If, however, the phase head is accessible, then its edge is accessible, too (Chomsky 2000). In addition, if the entire phase is spelled out as soon as it is completed, then movement out of a phase would not be possible, as there would be no “escape hatch” (Richards 2006). Hence, the necessary size of the operation space comprises the space between the currently created node of the category X and the next lower phase head Y (including Y); the maximal portion of structure that is computed at a time thus includes the current phase head X, the next lower phase head Y, and the edges of X and Y. This directly leads to the question which heads are phase heads. Following Manzini (1994), Epstein and Seely (2002) and Müller (2004), I adopt the null hypothesis that each phrase is a phase. Consequently, the search space of the current head X at a stage of the derivation comprises the next lower head Y and the edge of Y, but not the material embedded under Y. Furthermore, this analysis employs a clausal structure consisting of the core categories C – I – v – V.

The underlying argument structure is such that v assigns internal case, and I assigns external case. The internal argument is merged as the sister of V, the external argument as Spec,v (Murasugi 1992, among others).

2.2 Heads and Head Movement

A central assumption of this analysis is that syntactic heads are bundles of unordered features, which has been widely assumed for morphological features (Jakobson 1936, Bierwisch 1967, Kiparsky 2001; the alternative being feature geometries), and for the operation Merge $[\alpha, \beta]$ (where α and β are unordered; Chomsky 1995). This notion of head also corresponds to feature value matrices in Lexical-Functional Grammar (Kaplan and Bresnan 1982). However, there is internal structure in that the individual features that make up the head are decomposable into subsets (or feature geometries), and the features contained in those subsets are recognisable as belonging to a specific subset. In addition, several features can be dealt with simultaneously in Agree or Merge operations (this is equivalent to what happens during vocabulary insertion in post-syntactic morphology models like Distributed Morphology; see Halle and Marantz 1993, 1994).

Furthermore, in this analysis, head movement is an operation by which the features

of the goal are added to the feature set of the probe; attraction of a feature leads to pied-piping of the whole feature bundle of the goal (Roberts 2006, 2008*a,b*). This fusion-style type of head movement avoids the c-command problem with head movement by adjunction, and has the effect that all feature of an active head are accessible (as opposed to e.g. Müller (2008*c*), where due to a feature hierarchy, only one feature of an active head is accessible at a time).

2.3 Specificity-driven Syntactic Derivation

Specificity is arguably one of the main basic concepts of morphological theory. It is invoked to resolve competitions between the markers of a language which arise due to lexical underspecification of inflectional markers. The conflict can be resolved either by an extrinsic rule ordering (as in Bierwisch 1967), or by having recourse to the concept of specificity. In the latter approach, the principle resolving the rule conflict is the Subset Principle.²

(5) *Subset Principle* (see Halle 1997):

A vocabulary item V is inserted into a functional morpheme M iff. (i) and (ii) hold:

(i) The morpho-syntactic features of V are a subset of the morpho-syntactic features of M.

(ii) V is the most specific vocabulary item that satisfies (i).

The Subset Principle has the effect that whenever a more specific marker competes for a syntactic context with a less specified marker, then the higher specified marker is inserted. Ideally, specificity is purely determined by cardinality (Halle 1997), i.e., a marker α with a feature set A is more specific than a marker β with a feature set B iff. $|A| > |B|$.

I would like to propose that syntactic derivations, too, are driven by specificity. The syntactic constraint relevant to the local decisions made is the Maximize Matching Principle:

(6) *Maximize Matching Principle* (MMP).

(Let π be a Probe and P the feature set of π . Let γ be a Goal in the search space of π and G the feature set of γ .) A feature set $Q \subseteq P$ with $|Q| \geq 1$ must be satisfied with a feature set $H \subseteq G$ iff. H is the most specific goal in the search space of π .

Specificity is determined by cardinality: A Match between Q and H is more specific than a Match between Q' and H' iff. $|Q| > |Q'|$ (Halle 1997).

This principle is an extension of the “Maximize Matching Effects” constraint:

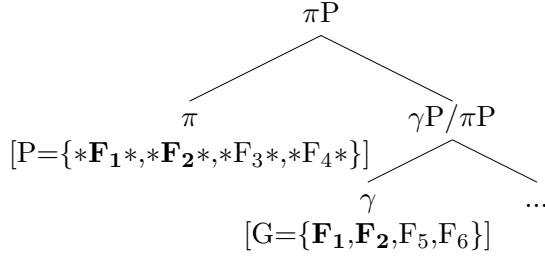
(7) *Maximize Matching Effects* (MME; Chomsky 2001:15)

If local (P,G) match and are active, their interpretable features must be eliminated at once, as fully as possible; partial elimination of features under Match, followed by elimination of the residue under Match, is not an option.

²Several version of this principle are known as *Subset Principle*, *Specificity Condition*, *Elsewhere Principle*, *Proper Inclusion Principle*, *Blocking Principle*, *Panini's Principle*, or *Proper Inclusion Condition*, among others; e.g. Kiparsky (1973), Di Sciullo and Williams (1987), Halle (1997), Stump (2001).

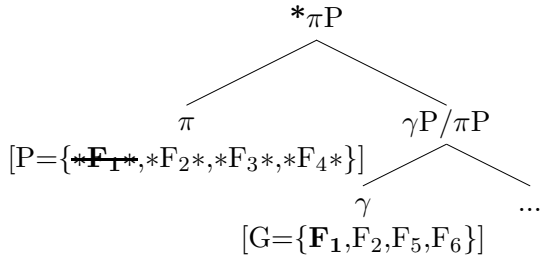
The effect of the MMP is identical to that of MME in constellations where a *single* potential Goal for an active Probe is involved: Agree between P and G involves handling of the maximal number of matching features. However, MME and the MMP differ in one crucial respect: MME does not have an effect on the choice of Goal if there are more than one potential Goals in the search space; due to the Minimal Link Condition (MLC), it is invariably the closest goal that the Probe agrees with. The MMP, on the other hand, has the additional effect that with more than one potential Goal being available in the search space of a Probe, the Probe agrees with the Goal that has the highest number of matching features. These two cases are best demonstrated by means of an abstract example. In a possible derivation, there is a goal γ in the search space of a probe π , and $\{*F_1*, *F_2*\}$ contained in π 's feature set P match γ 's features $\{F_1, F_2\}$.

(8) *Example I: "Classical" Maximize Matching Effects case*

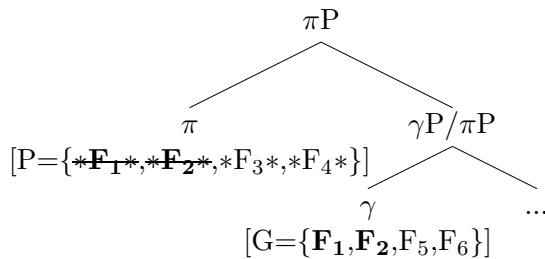


An agreement relation involving only $*F_1*$ and F_1 is not an option in this constellation. Thus, (9) is an impossible derivational step; the agreement relation must involve both $*F_1*/F_1$ and $*F_2*/F_2$, as shown in (10).

(9)

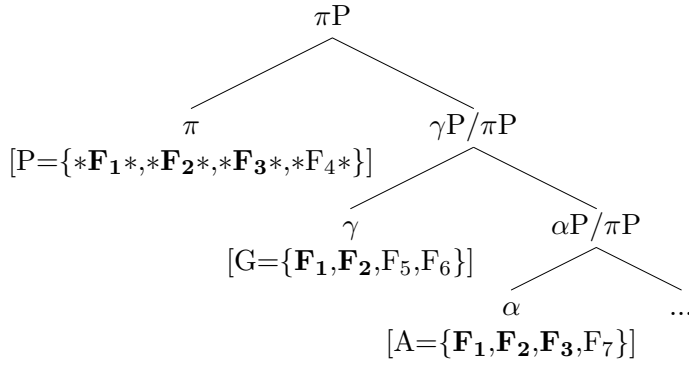


(10)

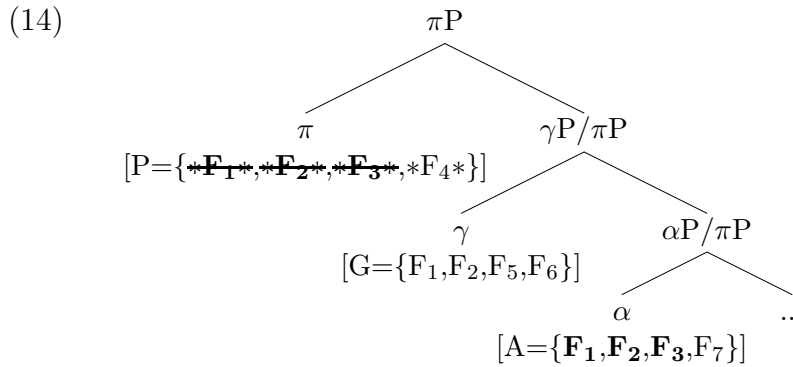
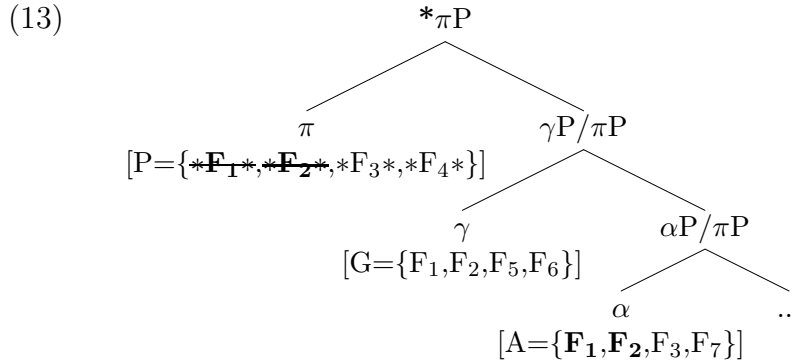
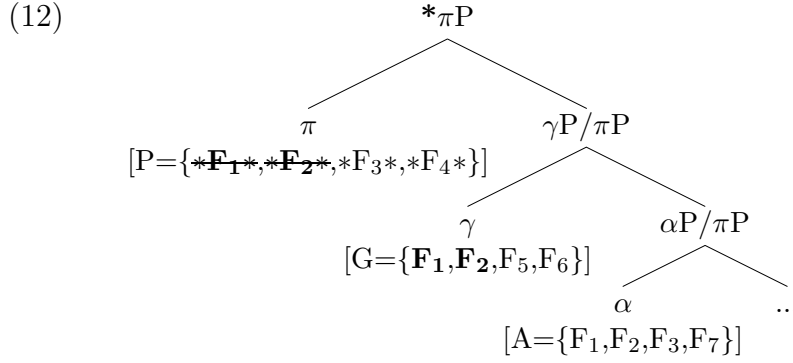


In this example, the MMP and MME have the same effect. However, the two principles differ in their effect in contexts where more than one potential Goal is available in the search space of a Probe. In derivations obeying MME, it is always the closest Goal that the Probe agrees with, due to the the Minimal Link Condition. The MMP, on the other hand, can overwrite the MLC: If the MMP is assumed to be at work, then the Probe agrees with the Goal that has the highest number of matching features. This is demonstrated in a second abstract example: In a second possible derivation, there are two potential goals, γ and α , in the search space of π . The closer goal γ has two matching features for π , and the more remote goal α has three matching features.

(11) *Example II: A case for the Maximize Matching Principle*



In this constellation, feature handling between π and the closer goal γ is not an option (see (12)). Likewise, feature handling involving only $*F_1*/F_1$ and $*F_2*/F_2$ is not valid, as feature handling must involve the maximally possible number of features that can be dealt with (see (13), which is equivalent to (9)). Thus, in a derivation obeying the MMP, the agreement relation must involve $\{*F_1*,*F_2*,*F_3*\}$ of π and $\{F_1,F_2,F_3\}$ of α ; this is shown in (14).



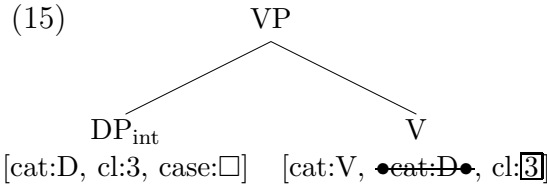
The effect of the MMP is weakened in a phase-based derivation where each phrase is a phase. In the new analysis, the MMP becomes relevant when the two potential Goals

are the lower phase head and an element contained in the edge of the lower phase head. Another relevant context, which does not play a role in the new analysis, is the choice between multiple specifiers of the next-lower phase head.

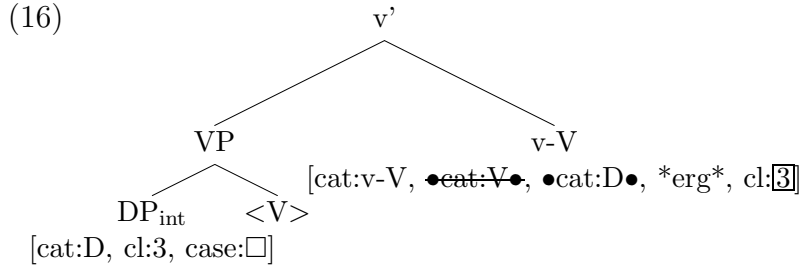
3 Analysis

The analysis proposed here is assumed to hold for LDA in general; I will however limit this section to LDA in Tsez. In the following, I will go through the derivation step by step to show how the MMP works in deriving the argument structure. The crucial step for long-distance agreement happens when matrix V is to be merged.

The first operation is Merge $\{V, DP_{int}\}$. The MMP forces simultaneous handling of both $[\bullet cat:D\bullet]$ and $[class:\square]$:³



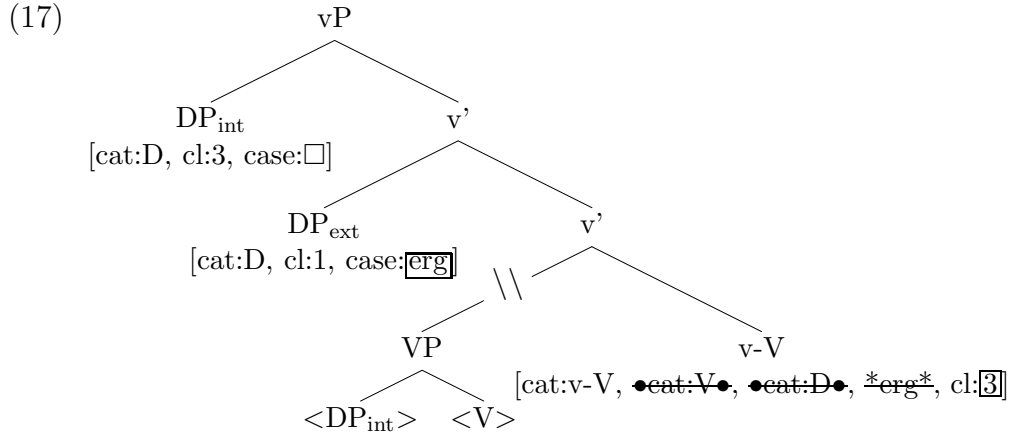
Subsequently, v is merged, V moves to v to satisfy $[\bullet cat:V\bullet]$; the feature set of the fused verbal head $v-V$ is thus $[cat:v-V, \bullet cat:D\bullet, *erg*, cl:3]$ (see (16)).



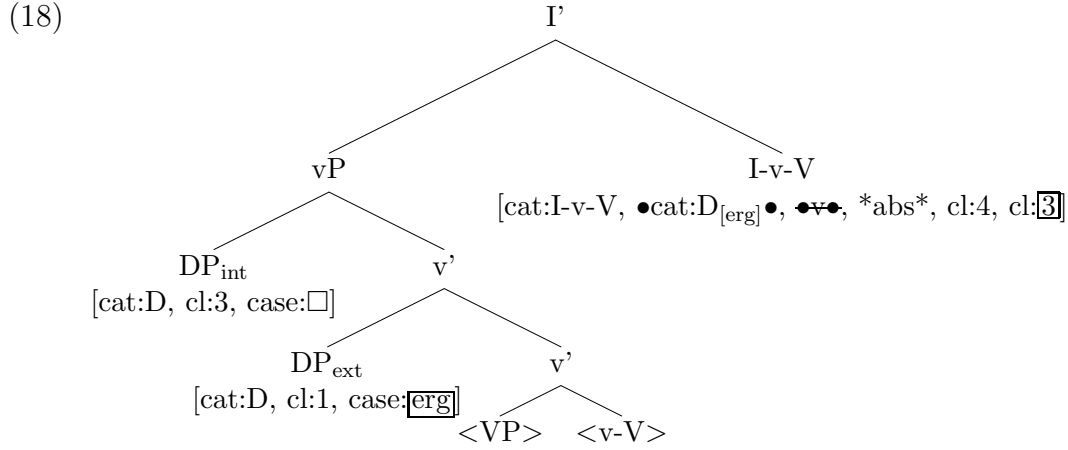
Note that V-to- v movement has to apply first, as merge of DP_{ext} before head movement would fatally violate the Strict Cycle Condition. A possible solution to enforce this order of operations is that $[cat:V]/[\bullet cat:V\bullet]$ is an abbreviation for a feature set that is a more specific match than $[\bullet cat:D\bullet, *erg*]$. In the next stage, DP_{ext} is merged.⁴ The MMP forces both $[\bullet cat:D\bullet]$ and $[*erg*]$ to be satisfied simultaneously. Finally, DP_{int} is internally merged at the left edge of v due to its unvalued case feature. Subsequently, the complement of v is spelled out.

³The notation of structure-building features as bulleted is adopted from Heck and Müller (2006).

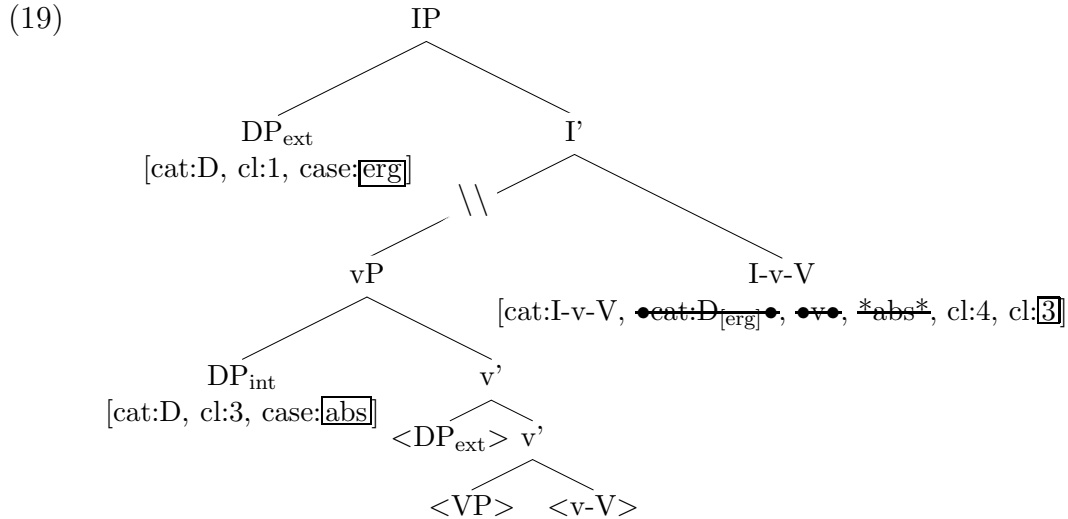
⁴A question that comes up at this point is why external merge of DP_{ext} is preferred over internal merge of DP_{int} in this derivation. A possible answer is that application order of internal and external merge is cross-linguistically parametrised (i.e., differently ranked): In ergative languages, external merge of arguments is preferred over internal merge (“merge over move”); in accusative languages, on the other hand, internal merge of arguments is preferred over external merge (“move over merge”). This is a case of extremely local optimisation (Heck and Müller 2006, Müller 2008a). Note that the dissimilar feature values $[cl:3]$ of $v-V$ and $[cl:1]$ of DP_{ext} do not prevent the Matching operation, as $[cl:3]$ does not serve as a probing feature.



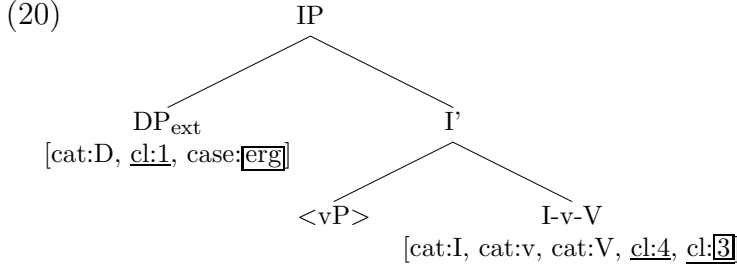
In the next step $I_{[cat:I, \bullet cat:D_{[erg]}, \bullet v, *abs^*, cl:4]}$ is merged, and $v-V$ moves to I , yielding $I-v-V_{[cat:I-v-V, \bullet cat:D_{[erg]}, *abs^*, cl:4, cl:3]}$. This is shown in (18).



I assigns absolutive case to DP_{int} . Subsequently, I handles its EPP feature ($\bullet cat:D_{[erg]} \bullet$) by remerging DP_{ext} as its specifier. Then the complement of I is transferred.



Now matrix $V_{[cat:V, \bullet cat:I, class:[]]}$ is to be merged. This is the decisive step for long-distance agreement: The MMP demands that the maximally possible number of features be satisfied in the merge operation. The search space of matrix $V_{[cat:V, \bullet cat:I, class:[]]}$ is shown in (20).



There are three potential class feature goals available in the search space of V, which are underlined in (20): [class:1] of DP_{ext}, and [class:3] and [class:4], both features of I-v-V. V has two choices: It could satisfy [\bullet cat:I \bullet] by merging IP and subsequently valuing its [class: \square] feature with a another goal in its search space; or it could satisfy both [\bullet cat:I \bullet] and [class: \square] with I. Again, the MMP determines the choice of goal: V can and therefore must satisfy both features with the feature set of I. The crucial question now is, with which of the two class features of I does matrix V agree, [class:3] (= embedded V's features by agree, now located in I-v-V due to head fusion) or [class:4] (=I's feature)? The answer is straightforward if the class agreement markers of Tsez are decomposed, which is to be assumed anyway if the formal syncretisms of markers are to be described adequately (Alexiadou and Müller 2005). The system of class agreement markers in Tsez is given in table 1 (Potsdam and Polinsky 2000).

Table 1

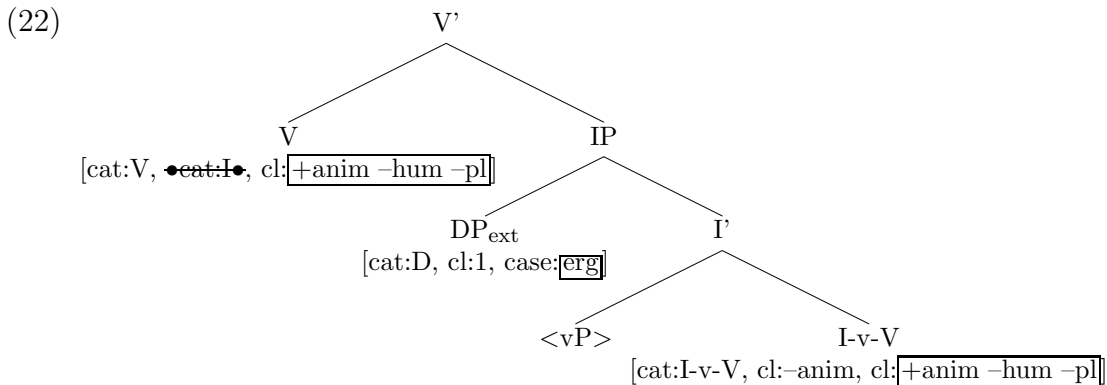
	SG	PL	DESCRIPTION
CLASS 1	\emptyset -	b-	male human
CLASS 2	y-	r-	female human, some inanimates
CLASS 3	b-	r-	animals, some inanimates
CLASS 4	r-	r-	inanimates, abstract concepts and clauses

On the basis of these data, I propose the the following feature decomposition:

(21) *Class feature and number decomposition:*

- | | |
|------------------------------|---------------------|
| (a) class 1: [+anim +hum +m] | (e) singular: [-pl] |
| (b) class 2: [+anim +hum +f] | (f) plural: [+pl] |
| (c) class 3: [+anim -hum] | |
| (d) class 4: [-anim] | |

Matrix V thus detects two possible matches in I-v-V, [-anim], and [+anim -hum -pl]. The target of agree is determined by the MMP: [+anim -hum -pl] is a more specific match than [-anim]. The unvalued class feature of matrix V is thus valued [+anim -hum -pl]. This is shown in (22).



In this account of Tsez, LDA is enforced due to object agreement, and because the class feature set of the embedded internal argument is always more specific than I's class feature (except for the case where the embedded DP_{int} is a class 4 nominal; in this case it would make no difference with which feature matrix V agrees). In addition, DP_{ext} never intervenes, as matrix V has to handle its selectional feature $[\bullet cat:I\bullet]$ in order to be merged; due to the MMP, it must then satisfy as many features as possible with embedded I.

4 Consequences

4.1 Features of the New Analysis

4.1.1 Parasitic Nature of LDA

Cyclic-agree approaches make the empirical prediction that LDA can only take place if local agreement (LA) takes place in the embedded clause (Keine 2008). This is borne out for the known cases (e.g. Tsez, Khwarshi, Hindi, Itelmen, Kutchi Gujarati, Passamaquoddy; also see section 5.2). The generalisation is illustrated in (23).

- (23) a. $+LA_{emb}, +LDA^5$
 b. $+LA_{emb}, -LDA$
 c. $-LA_{emb}, -LDA$
 d. $*-LA_{emb}, +LDA$

The new analysis captures the parasitic nature of the construction: the matrix verb finds embedded V's features in I-v-V if and only if embedded V shows local agreement.

4.1.2 Intervention Effects

Polinsky and Potsdam (2001:634ff.) show that LDA in Tsez is blocked when the embedded clause contains a wh-phrase, focused phrase, or complementiser. This is illustrated in (24) to (26).

- (24) eni-r [**hu** micxir b-ok'āk'-ru-li]
 mother-DAT [**who.erg** money(CL:3).ABS CL:3-steal-PSTPRT-NMLZ].CL:4
 r/*b-iy-xo
 CL:4/*CL:3-knows-PRS
 'The mother knows who stole the money' (Tsez)
- (25) eni-r [**t'ek-kin** y-igu yāl-ru-li]
 mother-DAT [**book(cl:2).abs-foc** CL:2-good be-PSTPRT-NMLZ].CL:4
 r/*y-iy-xo
 CL:4/*CL:2-knows-PRS
 'The mother knows that the BOOK is good'

⁵In what follows, I refer to the local agreement between the embedded verb and its internal argument as LA_{emb} ; the local agreement between the matrix predicate and the embedded clause (i.e., [CL:4] in Tsez) is referred to as LA.

- (26) eni-r [už-ā magalu b-ac'-si-**χin**]
 mother-DAT [boy-ERG bread(CL:3).ABS CL:3-eat-PST.EVID-**comp**].CL:4
 r/*b-iy-xo
 CL:4/*CL:3-knows-PRS
 ‘The mother knows that the boy ate bread’

The intervention effects can be accounted for in the new analysis under the assumption that wh-movement targets the CP, and that V-to-C movement does not take place in Tsez. In this constellation, if the embedded clause is a CP, then the embedded IP is transferred as soon as the C phase is complete. Consequently, the features of I-v-V are not in the search space of matrix V.

4.1.3 Scope Effects

As Polinsky and Potsdam (2001:619) note, embedded arguments in LDA structures cannot take scope over the matrix subject:

- (27) sis učitelər [IP ušibaw už-i ø-ik'ixosi-li] ø-iyxo
 one teacher [every boy-CL:1.ABS CL:1-go-NMLZ].CL:4 CL:1-know
 ‘Some teacher is such that he knows that every boy is going ($\exists teacher > \forall boy$)’
 ‘Every boy is such that some teacher knows that he is going ($\forall boy > \exists teacher$)’

The new analysis does not involve a raising-to-object scenario and thus correctly predicts the scopal pattern.

4.2 Cross-linguistic Variation

As was shown in section 4.1.1, cyclic agree approaches to LDA predict that natural languages allow three distributions (see (23)). However, not all options are found in all LDA-languages. The distribution of LA_{emb} and LDA in two LDA languages, Urdu and Tsez, are given in (28) and (29).

Urdu (Bhatt 2005):

- (28) a. $+LA_{emb}, +LDA$
 b. $*+LA_{emb}, -LDA$
 c. $-LA_{emb}, -LDA$
 d. $*-LA_{emb}, +LDA$

Tsez (Polinsky and Potsdam 2001):

- (29) a. $+LA_{emb}, +LDA$
 b. $+LA_{emb}, -LDA$
 c. $*-LA_{emb}, -LDA$
 d. $*-LA_{emb}, +LDA$

The generalisation for Urdu seems to be that LA_{emb} is optional, but if LA_{emb} takes place, then LDA is obligatory. In Tsez, on the other hand, LA_{emb} is obligatory, but LDA is not obligatory. A straightforward analysis of the Urdu data is that agreement between embedded V and D_{int} is optional (/semantically determined), and V-to-I movement is obligatory. Consequently, if there is LA_{emb} , then embedded V “delivers” the relevant agreement features to I; they can subsequently be targeted by the matrix verb. If there is no object agreement, then matrix V does not find the relevant features in its search space (even though it finds all of embedded V’s features).

To account for the Tsez data, I would like to suggest that the agreement between embedded V and D_{int} is obligatory, and V-to-I movement is optional. Hence, LA always takes place. If there is V-to-I movement, then the matrix verb finds embedded

V's features, and LDA takes place. If there is no V-to-I movement, then the higher verb does not find embedded V's features in the first place; thus, LA takes place in the higher clause.

4.3 LDA and Topicality in Tsez

In Tsez, LDA is obligatory when the embedded absolutive argument is interpreted as a topic, and disallowed when the argument has no such interpretation (Polinsky and Potsdam 2001). This generalisation is supported by two pieces of evidence. Firstly, LDA is obligatory when the embedded absolutive argument is marked by the topic marker *-n/ -gon* (Polinsky and Potsdam 2001:619):

- (30) a. eni-r [už-ā magalu b-āc'-ru-li
 mother-DAT [boy(CL:1)-ERG bread(CL:3).ABS CL:3-eat-PSTPRT-NMLZ
] **b/r**-iy-xo
].CL:4 **cl:3/cl:4**-knows-PRS
- b. eni-r [už-ā magalu-(go)n b-āc'-ru-li
 mother-DAT [boy(CL:1)-ERG bread(CL:3).ABS-**top** CL:3-eat-PSTPRT-NMLZ
] **b/*r**-iy-xo
].CL:4 **cl:3/*cl:4**-knows-PRS
- ‘The mother knows the boy ate the bread’ (Tsez)

A second piece of evidence is that LDA is unacceptable when the internal absolutive argument cannot be interpreted as a topic. The minimal pair in (31) shows that in the predicate “it is snowing” (literally, “snow sends”), the single argument *snow* cannot be marked as topic.

- (31) a. isi y-egir-xo
 snow(CL:2).ABS CL:2-send-PRS
 ‘It is snowing’ (Tsez)
- b. *isi-**n** y-egir-xo
 snow(CL:2).ABS-**top** CL:2-send-PRS

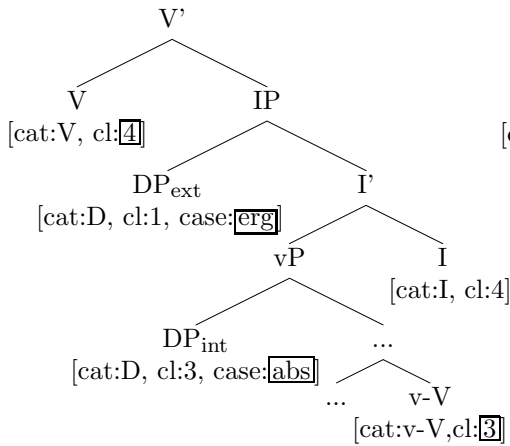
Accordingly, in an embedded context where the embedded argument cannot be interpreted as a topic, LDA is not acceptable, as shown in (32).

- (32) eni-r [isi y-egir-xosi-li]
 mother-DAT [snow(CL:2).ABS CL:2-send-PSTPRT-NMLZ].CL:4
r/*y-iy-xo
cl:4/*cl:2-know.PRS
- ‘The mother knows that it is snowing’

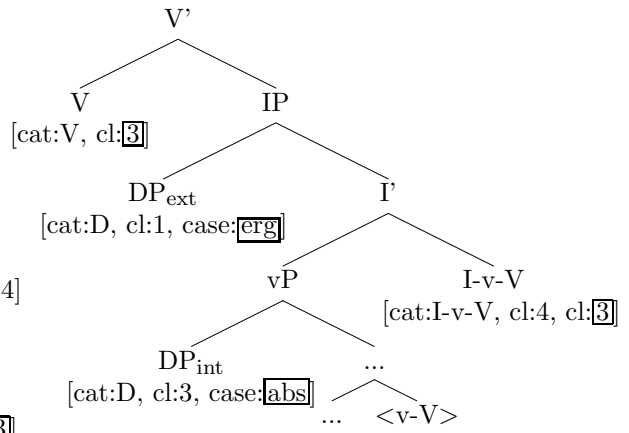
Polinsky and Potsdam (2001) account for these data by assuming that LDA is triggered when the absolutive argument is covertly remerged as the specifier of a Top head at the left edge of the embedded clause. The new analysis of long-distance agreement allows for a new approach to the correlation between LDA and topicality. The basic idea of the new account is that the topic interpretation of DP_{int} falls out as a side effect of V-to-I-movement in the embedded clause.

The starting point is the observation that in both LA and LDA configurations, DP_{ext} is remerged as Spec,I, and DP_{int} stays vP-internal. This is shown in (33).

(33) a. LA configuration:



b. LDA configuration:



The difference between the two contexts is that in the case of LDA, v-to-I movement has taken place, whereas in LA contexts, v-V is not moved to I. It was shown above that LDA is dependent upon V-to-I-movement in the embedded clause, and that LDA co-occurs with the topic interpretation of DP_{int} . A reasonable conclusion from this is that the topic interpretation, too, is dependent on verb movement in the embedded clause.

As Polinsky and Potsdam (2001:599) note, there are two syntactic topicalisation strategies in Tsez, syntactic fronting and IP-internal topicalisation.⁶ The new account of the IP-internal topicalisation strategy is that an element α is interpreted as a topic if it is in the scope of (i.e., c-commanded by) v . A possible implementation of this assumption is that v contains a feature [+anaphoric], and that elements in the scope of v are interpreted as [+anaphoric] at LF (for a similar analysis cf. Vallduví 1992, Choi 1996, Lopez 2007).

In the new analysis of Tsez, DP_{int} is always internally merged as Spec, v . If v-V stays in situ, then DP_{int} is not c-commanded by v . This has two consequences: Firstly, DP_{int} is not interpreted as a topic; secondly, LDA does not take place. If, on the other hand, v-V moves to I, then DP_{int} is c-commanded by v . This has the effect that DP_{int} is interpreted as topic, and that LDA takes place.

5 Questions and Solutions

5.1 Class Features

It is widely assumed that class features do not play a role in the syntax (e.g., Alexiadou and Müller 2005, Müller 2008b). This leads to a seeming problem: The new analysis crucially rests upon class features as syntactically relevant features in that they are accessible by a probe, and that they are a determining factor in syntactic decisions. However, the “noun class” features in the Tsez data are needed to determine the “class” marker on the agreeing predicate; they do not determine the case and number morphology on the argument. Consequently, the seeming “class” features are in fact gender features (cf. Alexiadou and Müller 2005:32f. fn. 39), which does not cause a conceptual problem.

⁶In addition, there is a morphological topicalisation strategy that involves the topic markers *-no* (NON-CONTRASTIVE TOPIC) and *-gon* (CONTRASTIVE TOPIC).

5.2 An Unexpected Pattern

There seem to be data which contradict the cross-linguistic generalisation that LDA presupposes local agreement in the embedded clause. The examples in (34) and (35) from Bickel and Nichols (2001) show that in Belhare, the higher verb agrees with the single argument of the embedded V_{itr} and with DP_{int} of the embedded V_{tr} in person and number.⁷ The lower verb shows no agreement. In Ingush, the higher verb agrees both in gender with the embedded internal argument, and in transitivity with the lower verb. The lower V exhibits no agreement.

- (34) a. [(han) khoŋ-ma] nui-**ka**
 [2SG.NOM play-INF] may-NPST:2[sg]s
 ‘You may play’ (Belhare)
- b. [(unchikŋa) (han) lu-ma] nui-**ka**
 [3SG.ERG 2SG.NOM tell-INF] may-NPST:2[sg]s
 ‘He/she/it may tell you (*You may tell him)’
- (35) a. [Chaarx c’eaxxaa qesta] juola-jalar
 [wheel(**j**) suddenly turn.INF] **j.start-j.intr**.AUX.WP
 ‘The wheel suddenly started turning’ (Ingush)
- b. [∅ ∅ laqa] juola-jyr
 [3SG.F (**j**) play.INF] **j.start-j.trans**.AUX.WP
 ‘She started playing [the instrument]’

These data seem to be unexplained by the new analysis, as a cyclic-agree approach to LDA predicts that this pattern does not occur. However, Bickel and Nichols (2001) argue on independent grounds that an analysis of these data as biclausal structures is problematic, and propose an alternative analysis. Bickel and Nichols observe that the data in (34) and (35) are cases of syntactic ergativity, as the matrix verb treats the internal argument of V_{tr} and the single argument of V_{itr} on a par. This finding, however, is problematic, as it is not conforming to the empirical generalisation that complementation is the least likely context for syntactic ergativity (e.g. Dixon 1972, van Valin 1981). As can be seen from the hierarchy of likely contexts for ergativity in (36), the most likely context is verb agreement; complementation is a much less likely context (Bickel and Nichols 2001).

- (36) verb agreement >> relativization, focalization, interrogation, quantifier launch >> gapping in chaining and chained purposive constructions >> coreference marking in chaining, complementation, reflexivization

In Belhare and Chechen/Ingush, this hierarchy seems to be reversed – both languages seem to exhibit syntactic ergativity in complementation, but almost nowhere else.⁸ The solution proposed by (Bickel and Nichols 2001) is that (34) and (35) do not involve a biclausal structure, but are in fact monoclausal by restructuring, involving a complex vP and a single DP_{ext} . The seeming LDA is thus argument structure unification by

⁷Note that ‘may’ is an all-intransitive deponent verb, which encodes the agreement as agreement with the single argument of an intransitive verb (glossed as ‘s’), though it actually cross-references the internal argument of the lower transitive verb.

⁸In Chechen/Ingush, there is no other context in which syntactic ergativity occurs; in Belhare syntactic ergativity also occurs in internal-head relativization.

agreement climbing to a light verb or superlight verb (that is, a verb that assimilates in valence to the lower verb). Consequently, “LDA proper” and “seeming LDA” seem to be two distinct syntactic contexts, the former involving a biclausal structure, the latter involving restructuring (see also Butt 1995). Thus, (34) and (35) are not counter-examples to a cyclic-agree approach.

There is, however, still a problematic piece of data. In Belhare, constructions involving the light verbs ‘want’ and ‘stop’ do neither show local agreement in the embedded clause, nor the hallmark of restructuring (Bickel 2003, Bickel and Nichols 2001).

- (37) a. khali [$\emptyset_{i,j,k}$ $\emptyset_{i,j,*k}$ set-ma] **ka_i-ŋ_j-koĩ-yu**
 only [(A) (O) kill-INF] **1incl.o-3NSG.A-want-NPST**
 ‘They want to kill us.’ OR: ‘They just want us to get drunk.’ (lit., ‘they just want [the beer] kill us.’) (Belhare)
- b. [$\emptyset_{i,j,k}$ $\emptyset_{i,j,*k}$ ten-ma] **ma_i-ŋ_j-narend-he**
 [(A) (O) beat-INF] **1sg.o-3NSG.A-stop-PST**
 ‘They stopped beating me.’ OR: ‘They stopped x from beating me.’

The examples have two readings, an (unproblematic) control reading, which is in fact the most plausible reading (Bickel and Nichols 2001), and a reading in which the external argument of the lower verb is not coreferential with the external argument of the higher verb. This second reading is potentially problematic for a cyclic agree-approach, as the higher verb still shows agreement with the higher external argument (3NSG.A); this would not be so if restructuring had taken place.

5.3 LDA Across a Complementiser in Chukchee?

A prediction made by the new analysis is that LDA is only possible if embedded V’s features are included in the head of the phrase immediately dominated by the matrix verb; otherwise, the relevant agreement features would not be in the search space of the matrix verb. In Chukchee, however, LDA seems to be possible with an embedded CP containing an overt complementiser (e.g. Bošković 2007). If the embedded verb is the C head, then there is no position the complementiser could possibly fill:

- (38) ʎnan qeɣilu ləŋərəkə-**nin-et** [ijqun \emptyset -rətəm’ŋəv-**nen-at** **qora-t**]
 he regrets-**3-pl** [that 3SG-lost-**3-pl** **reindeer-pl.nom**]
 ‘He regrets that he lost the reindeers.’ (Chukchee)

However, there is evidence that this is not a case of LDA after all (Bobaljik 2006:52f.). Firstly, transitive light verbs of emotion (‘regret’) usually take a DP complement in Chukchee, and not a clausal complement. A second piece of counter-evidence is that the constituent [‘that lose-3>3-PL reindeer-PL.NOM’] does not show the word order typical of clausal complements, which would be SOV. Thirdly, the conjunction ‘ijqun’ is usually not translated as a declarative complementiser ‘that’, but as ‘because, in order to’. For these reasons, Bobaljik (2006) proposes a local agreement analysis of the Chukchee example, which is, at any rate, a legitimate parse of this sentence:

- (39) ʎnan qeyilju ləŋ-ə-rkən-**in-et** [iŋqun rətəmnəv-nen-at]
 he.ERG sorry/pity/regret AUX-E-PAST-**3>3-pl** [because lose-3>3-PL]
qora-t
reindeer-pl.nom

‘He feels sorry (for them), because he lost (them), the reindeers.’

The Chukchee data are thus no evidence against a cyclic-agree approach to long-distance agreement.

6 Outlook

In this paper I proposed a new analysis of long-distance agreement resting upon the idea that the phenomenon is yielded by successive application of local agreement operations conditioned by the Maximize Matching Principle.

The new analysis derives the parasitic nature of LDA, accounts for blocking effects triggered by intervening C material, correctly derives scope effects, and is flexible enough to account for cross-linguistic variation. In addition, the topic interpretation of the embedded absolutive argument in the context of LDA in Tsez falls out as a side effect of V-to-I movement.

There is evidence that the Maximize Matching Principle is indeed at work in syntactic derivations: It seems to be a constantly recurring pattern that merge operations are ordered in such a way that elements that are more “specific” in one or the other way are merged earlier with the probing element than less specific elements. This pattern emerges in a number of seemingly unrelated environments. For example, in Bulgarian multiple *wh*-constructions, the nominative *wh*-phrase precedes the accusative *wh*-phrase, and when all three verbal arguments are *wh*-fronted, then the order is invariably $DP_{NOM} \prec DP_{ACC} \prec DP_{DAT}$ (Rudin 1988, among others):

- (40) a. Koj_i kogo_j vižda t_i t_j?
 who whom sees
 ‘Who sees whom?’
 b. *Kogo_j koj_i vižda t_i t_j?
 (41) Koj_i kogo_j na kogo_k e pokazal t_i t_j t_k? (*all other orders are unacceptable*)
 who whom to whom has pointed.out
 ‘Who pointed out whom to whom?’

Secondly, it can be shown for many languages that lexical case is dealt with before structural case is assigned; consequently, the indirect object is first merge, and the direct object is non-first merge. This can be shown e.g. by means of binding effects (see e.g. Barss and Lasnik 1984):

- (42) a. I showed Dracula himself in the mirror
 b. *I showed himself Dracula in the mirror

Thirdly, there are data that cannot be explained by having recourse to the MLC. One such set of data is reported by Rizzi (2002): an intervening adverb blocks displacement of a deeper adverb to the C domain. The intervening adverb does however not

block extraction if the displaced adverb is contrastively focused (a similar effect can be observed in French and German; see Rizzi 2002):

- (43) a. Probabilmente_i, i tecnici hanno t_i risolto rapidamente il problema
 probably.TOP the technicians have solved quickly the problem
 ‘The technicians probably solved the problem quickly’
 b. *Rapidamente_i, i tecnici hanno probabilmente risolto t_i il problema
 quickly the technicians have probably solved the problem
 c. RAPIDAMENTE_i i tecnici hanno probabilmente risolto t_i il
 quickly.FOC the technicians have probably solved the
 problema (non lentamente)
 problem (not slowly)

A straightforward analysis of all these data is that the probing head attracts the most specific element first. Less specific elements in the search space of the probe do not intervene. Specificity is determined by the featural decomposition of the possible goals: Dative is more specific than accusative, accusative is more specific than nominative; an adverb with a [foc] feature is more specific than an adverb without this feature.

Abbreviations

A	external argument of V_{tr}	LAT	lative
ABS	absolutive	NMLZ	nominaliser
COMP	complementizer	NPST	non-past
AUX	auxiliary	NSG	non-singular
CL	class	O	internal argument of V_{tr}
COP	copula	OBL	oblique
DAT	dative	PFV	perfective
ERG	ergative	PRS	present
EVID	evidential	PSTPRT	past participle
EXT	external	PST	past
FOC	focus	S	single argument of V_{itr}
INCL	inclusive	SG	singular
INF	infinitive	V_{ITR}	intransitive verb
INT	internal	V_{TR}	transitive verb
INTR	intransitive	WP	witnessed past
J	J-gender		

References

- Alexiadou, Artemis and Gereon Müller (2005): ‘Class Features as Probes’. To appear in Asaf Bachrach and Andrew Nevins (eds.), *The Bases of Inflectional Identity*. Oxford University Press.
- Barss, Andrew and Howard Lasnik (1984): ‘A Note on Anaphora and Double Objects’, *Linguistic Inquiry* **17**, 347–354.
- Bhatt, Rajesh (2005): ‘Long Distance Agreement in Hindi-Urdu’, *Natural Language & Linguistic Theory* **23**(4), 757–807.

- Bickel, Balthasar (2003): Hidden Syntax in Belhare. *In: A. Saxena, ed., Himalayan Linguistics*. Mouton de Gruyter, Berlin, pp. 141–190.
- Bickel, Balthasar and Johanna Nichols (2001): Syntactic Ergativity in Light Verb Complements. *In: Proceedings of the 27th Annual Meeting of the Berkeley Linguistics Society*. pp. 39–52.
- Bierwisch, Manfred (1967): Syntactic Features in Morphology: General Problems of So-Called Pronominal Inflection in German. *In: To Honour Roman Jakobson*. Mouton, The Hague and Paris, pp. 239–270.
- Bobaljik, Jonathan (2006): ‘Where’s ϕ ? Agreement as a Post-Syntactic Operation’. Manuscript, University of Connecticut.
- Bobaljik, Jonathan and Susi Wurmbrand (2005): ‘The Domain of Agreement’, *Natural Language & Linguistic Theory* **23**(4), 809–865.
- Boeckx, Cedric (2004): ‘Long-distance Agreement in Hindi: Some Theoretical Implications’, *Studia Linguistica* **58**(1), 23–36.
- Bošković, Željko (2007): ‘Agree, Phases and Intervention Effects’, *Linguistic Analysis* **33**, 54–96.
- Bruening, Benjamin (2001): Syntax at the Edge: Cross-clausal Phenomena and the Syntax of Passamaquoddy. PhD thesis, MIT, Cambridge, Mass.
- Butt, Miriam (1993): ‘Hindi-Urdu Infinitives as NPs’, *South Asian Language Review* **3**(1), 51–72.
- Butt, Miriam (1995): *The Structure of Complex Predicates in Urdu*. Dissertations in Linguistics, CSLI Publications, Stanford.
- Chandra, Pritha (2005): ‘Hindi-Urdu Long Distance Agreement: Agree, AGREE, or Spec-Head?’. Manuscript, University of Maryland.
- Choi, Hye-Won (1996): Optimizing Structure in Context: Scrambling and Information Structure. PhD thesis, Stanford University.
- Chomsky, Noam (1995): *The Minimalist Program*. MIT Press, Cambridge, Mass.
- Chomsky, Noam (2000): Minimalist Inquiries: The Framework. *In: R. Martin, D. Michaels and J. Uriagereka, eds, Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*. MIT Press, Cambridge, Mass., pp. 89–155.
- Chomsky, Noam (2001): Derivation by Phase. *In: M. Kenstowicz, ed., Ken Hale: A Life in Language*. MIT Press, Cambridge, Mass., pp. 1–52.
- Chomsky, Noam (2005): ‘On Phases’. Manuscript, MIT.
- Chomsky, Noam (2006): ‘Approaching UG from Below’. Manuscript, MIT.
- Di Sciullo, Anna-Maria and Edwin Williams (1987): *On the Definition of Word*. Number 14 in ‘Linguistic Inquiry Monographs’, MIT Press, Cambridge, Mass.
- Dixon, Robert M. W. (1972): *The Dyirbal Language of North Queensland*. Cambridge University Press, Cambridge.

- Epstein, Samuel and Daniel Seely (2002): Rule Application as Cycles in a Level-free Syntax. In: S. Epstein and D. Seely, eds, *Derivation and Explanation in the Minimalist Program*. New York, Blackwell, pp. 65–89.
- Grosz, Patrick and Pritty Patel (2006): ‘Long Distance Agreement and Restructuring Predicates in Kutchi Gujarati’. Manuscript, MIT.
- Halle, Morris (1997): Distributed Morphology: Impoverishment and Fission. In: B. Bruening, Y. Kang and M. McGinnis, eds, *MIT Working Papers in Linguistics*. Vol. 30, Cambridge, Mass., pp. 425–449.
- Halle, Morris and Alec Marantz (1993): Distributed Morphology and the Pieces of Inflection. In: K. Hale and S. J. Keyser, eds, *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*. MIT Press, Cambridge, Mass., pp. 111–176.
- Halle, Morris and Alec Marantz (1994): Some Key Features of Distributed Morphology. In: H. H. Andrew Carnie and T. Bures, eds, *Papers on Phonology and Morphology*. Vol. 21 of *MIT Working Papers in Linguistics*, MIT Press, Cambridge, Mass., pp. 275–288.
- Heck, Fabian and Gereon Müller (2006): Extremely Local Optimization. In: E. Bainbridge and B. Agbayani, eds, *Proceedings of WECOL 34*. Department of Linguistics, University of Fresno, CA, pp. 70–182.
- Jakobson, Roman (1936): Beitrag zur allgemeinen Kasuslehre: Gesamtbedeutungen der russischen Kasus. In: *Selected Writings II*. Mouton, The Hague, pp. 23–71.
- Kaplan, Ronald M. and Joan Bresnan (1982): Lexical-Functional Grammar: A Formal System for Grammatical Representation. In: J. Bresnan, ed., *The Mental Representation of Grammatical Relations*. MIT Press, Cambridge, Mass., pp. 173–281.
- Kawashima, Ruriko and Hisatsugu Kitahara (2004): Phonological Content and Syntactic Visibility. In: A. Breitbarth and H. van Riemsdijk, eds, *Triggers*. De Gruyter, Berlin, pp. 205–230.
- Keine, Stefan (2008): ‘LDA und Zyklisches Agree’. Handout, Universität Leipzig.
- Khalilova, Zaira (2007): ‘Clause Linkage: Coordination, Subordination and Cosubordination in Khwarshi’. Manuscript, Max-Planck Institut für evolutionäre Anthropologie Leipzig.
- Kiparsky, Paul (1973): ‘The Inflectional Accent in Indo-European’, *Language* **49**(4), 794–849.
- Kiparsky, Paul (2001): ‘Structural Case in Finnish’, *Lingua* **111**(4-7), 315–376.
- Legate, Julie Anne (2005): Phases and Cyclic Agreement. In: *Perspectives on Phases*. Vol. 49 of *MIT Working Papers in Linguistics*, pp. 147–156.
- Lopez, Luis (2007): ‘A Derivational Syntax for Information Structure’. Book manuscript, University of Illinois-Chicago.
- Mahajan, Anoop Kumar (1989): Agreement and Agreement Phrases. In: I. Laka and A. K. Mahajan, eds, *Functional Heads and Clause Structure*. Vol. 10 of *MIT Working Papers in Linguistics*, Cambridge, Mass., pp. 217–252.
- Manzini, Maria Rita (1994): ‘Locality, Minimalism, and Parasitic Gaps’, *Linguistic Inquiry* **25**, 481–508.

- Miller, George A. (1956): ‘The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information’, *The Psychological Review* **63**, 81–97.
- Müller, Gereon (2004): Phrase Impenetrability and Wh-Intervention. In: A. Stepanov, G. Fanselow and R. Vogel, eds, *Minimality Effects in Syntax*. de Gruyter, Berlin, pp. 289–325.
- Müller, Gereon (2008a): ‘Ergativity, Accusativity, and the Order of Merge and Agree’. Manuscript, Universität Leipzig.
- Müller, Gereon (2008b): ‘Inflectional Morphology in a Minimalist Grammar’. Lecture Notes for a Compact Course, Universität Potsdam, 28-29 June 2007, and the Leipzig Spring School of Linguistic Diversity, 31 March - 4 April 2008, Leipzig.
- Müller, Gereon (2008c): ‘On Deriving CED Effects from the PIC’. Manuscript, Universität Leipzig.
- Murasugi, Kumiko (1992): Crossing and Nested Paths. PhD thesis, MIT, Cambridge, Mass.
- Nevins, Andrew (2004): Derivations without the Activity Condition. In: M. McGinnis and N. Richards, eds, *Perspectives on Phases: Proceedings of the Workshop on EPP and Phases*. Vol. 49 of *MIT Working Papers in Linguistics*, pp. 287–310.
- Obata, Miki and Samuel Epstein (2008): ‘Phasing Out Improper Movement as Featural Crash’. Talk delivered at the Thirty-first Annual Colloquium of Generative Linguistics in the Old World, Newcastle, 28 March 2008.
- Polinsky, Maria and Eric Potsdam (2001): ‘Long-Distance Agreement and Topic in Tsez’, *Natural Language & Linguistic Theory* **19**, 583–646.
- Potsdam, Eric and Maria Polinsky (2000): ‘Long-Distance Agreement in Tsez’, *Proceedings of WCCFL 18*.
- Richards, Marc (2006): ‘On Phases, Phase Heads, and Functional Categories’. Manuscript, University of Cambridge.
- Richards, Marc (2008): ‘Probing the Past: On Reconciling LDA with PIC’. Manuscript, Universität Leipzig.
- Rizzi, Luigi (2002): ‘Locality and Left Periphery’. Manuskript, Università di Siena.
- Roberts, Ian (2006): ‘Clitics, Head Movement and Incorporation’. Manuscript, University of Cambridge.
- Roberts, Ian (2008a): ‘A Deletion Analysis of Null Subjects’. Manuscript, University of Cambridge.
- Roberts, Ian (2008b): ‘Varieties of French and the Null-Subject Parameter’. Manuscript, University of Cambridge.
- Rudin, Catherine (1988): ‘On Multiple Questions and Multiple *Wh* Fronting’, *Natural Language & Linguistic Theory* **6**, 445–501.
- Stump, Gregory T. (2001): *Inflectional Morphology*. Cambridge University Press, Cambridge.
- Vallduví, Enric (1992): *The Informational Component*. Garland, New York.
- van Valin, Robert D., Jr. (1981): ‘Grammatical Relations in Ergative Languages’, *Studies in Language* **5**(3), 361–394.