Deriving assimilation & dissimilation in syntax: ϕ vs. case[1]

Sandhya Sundaresan (sandhya.sundaresan@stonybrook.edu)
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Abstract

The formal operation of Agree in Minimalism (Chomsky, 2001) is hardwired to always and only yield outputs that are assimilatory in nature: i.e. it is *crash-proof* (Frampton and Gutmann, 2008) wrt. syntactic assimilation. The existence of phenomena which are both syntactic and dissimilatory (e.g. case, cf. Preminger, 2014; Levin, 2015; Yuan, To Appear) and, I argue, certain cases of local anaphora (Lidz, 2001; Reuland, 2011) thus poses a challenge. To accommodate these facts, I develop a revised model of Agree (renamed RELATE), the core intuition underlying which is the observation of a "Category Process Correlation (CPC)", namely that syntactic dissimilation overwhelmingly obtains between two non-distinct categories while syntactic assimilation obtains between two distinct ones. I show that, under RELATE, we can not only derive cases of syntactic assimilation (e.g. ϕ-agreement) and dissimilation (e.g. case and local anaphora) under a single operation, but can also correctly predict why cases of syntactic dissimilation are exceptional and pertain primarily to nominals. The latter follows directly from the way in which the CPC interacts with the distribution of individual categories across phases. I conclude by showing that the current model also makes a number of empirical predictions which seem, by and large, to be fulfilled.

1 Introduction

A fundamental distinction between grammatical phenomena has to do with whether they are assimilatory or dissimilatory in nature. In cases of grammatical assimilation (e.g. phi-agreement, vowel harmony), grammatical information, encoded in terms of features, is replicated on two linked grammatical elements A and B in a local domain; with grammatical dissimilation (e.g. Binding Conditions B/C and OCP effects in phonology), local

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linking between two elements *A* and *B* results in them bearing necessarily distinct sets of features. In Minimalism (Chomsky, 2000, 2001, et seq.), syntactic relationships are modelled under Agree, an operation which views all syntactic relationships relationships as being triggered by the need to resolve a feature-asymmetry between two (or more) grammatical objects. As a result, the classic formulation of Agree in Chomsky (2001) is designed from the ground up to yield syntactic assimilation as its *only possible output*.

At the same time, bonafide cases of syntactic dissimilation seem rather uncommon across languages. Potential candidates for syntactic dissimilation, like partial obligatory control (OC) or the anti-locality effects described by Binding Conditions B & C, have independently been argued to be either not syntactic (e.g. Reinhart, 1993; Safir, 2004, and Pearson, 2016 for semantic treatments of Conditions B/C and partial OC, respectively) or not dissimilatory (as under A-movement analyses of partial OC in Boeckx, Hornstein, and Nunes, 2010; Sheehan, 2014b, a.o.) underlyingly. But recent work (Preminger, 2014; Levin, 2015, and Yuan, 2021b) convincingly shows that a core residue of grammatical phenomena involving dependent case effects are both syntactic and dissimilatory. On the strength of such arguments, as well as others which I introduce here, I argue, in line with recent work in Preminger (To Appear), that Agree, at least in its simplest form, non-trivially undergenerates the range of syntactic relationships attested in language. To capture cases of syntactic dissimilation in a Minimalist syntax, we must come up with a dedicated dissimilatory operation which functions alongside Agree (see e.g. Preminger, 2014; Poole, 2022) or substantially revise the mechanics of Agree such that it can yield both assimilation and dissimilation in syntax.

The current paper rejects the first option as being uneconomical and counter to the spirit of Minimalism, and proposes a variant of the second. The starting point of my analysis is the observation that there is a systematic "Category Process Correlation (CPC)" between the relative categories (same vs. different) of two syntactically linked elements and whether such linking results in syntactic assimilation or dissimilation. Concretely, per the CPC, syntactic dissimilation overwhelmingly (maybe even exclusively) obtains between two linked syntactic constituents which belong to two non-distinct categories; in contrast, syntactic assimilation obtains between two unlike categories.[2] In addition to being able to capture the baseline dis-

[2] I speculate that this is motivated, albeit in a purely indirect way, from an interface constraint (much like the deletion of uninterpretable features or the theta-criterion) on possible syntactic outputs at Spell-Out. This is a generalized OCP ban OCP_{Gen}, (reminiscent of work in Richards, 2010), under which two locally linked syntactic constituents in a Spell-Out do-

tribution of assimilation and dissimilation for a vast majority of syntactic phenomena, the CPC also gives us a way to explain why cases of assimilation are so much more common across languages. This directly follows from two independent assumptions: (i) that the syntactic category of a head is unique within its minimal extended projection, and (ii) that syntactic visibility between two grammatical objects in distinct phases can only obtain via the phasal edge (Phase Impenetrability Condition (PIC), Chomsky, 2001, et seq.). The former entails that if *A* and *B* bear the same category, they must necessarily belong to distinct extended projections; the latter entails that if these extended projections are in distinct (consecutive) phases, then *A* and *B* can only communicate if *A* or *B* is at the phase edge.

Taken together, this raises clear predictions about what non-distinct categories can be syntactically visible to one another, and therefore linked, in the first place. For instance, most CP phases contain at most one verbal extended projection, so we expect distinctness effects across verbal categories to be quite rare. In contrast, a minimal CP may contain multiple *nominal* extended projections, so we do expect distinctness effects across nominals. Both predictions are empirically fulfilled. Dependent case effects in syntax involve comparisons of case categories of two nominals inside a minimal phase; I show that many cases of local anaphora (notably also involving clausemate nominals) may also be folded under this umbrella. The account also predicts that dissimilatory effects should obtain across like verbal categories just in case a minimal CP phase contains more than one verbal extended projection. This has been independently argue to obtain in Ndebele (Pietraszko, 2018b,a), in complex predications which instantiate precisely such a scenario.

Building on the CPC, I develop a model of syntactic relationships, named RELATE only to make its contrast to classic Agree clear, which deviates from classic variants of Agree in two main ways. First, it rejects the idea that all syntactic relationships are *dependencies*, triggered by the need to rectify a feature asymmetry holding between a probe and a goal. At the same time, it maintains the idea, inherent to Agree, that syntactic relationships are triggered by the presence of an unvalued feature. Taken together, this allows two syntactic objects in a local c-command relation to be linked for some feature α not only when α is valued on one and unvalued on the other but also when it is unvalued on both (a possibility already explored in Pesetsky and Torrego, 2007). Second, it derivationally factors in the CPC by having the relative categories (same vs. distinct) of two elements which

main may not be featurally indistinguishable at the LF and PF interfaces.

are linked for some syntactic feature α determine possible outcomes for feature-valuation for α across them. Categorial identity triggers syntactic dissimilation across the linked elements; syntactic assimilation obtains in all other cases. By treating syntactic dissimilation as a special case and syntactic assimilation as the Elsewhere scenario, this model also correctly predicts that the former should be the exception, rather than the norm.

This paper joins an emerging dialog (cf. recent work in Clem and Deal, 2023; Poole, To Appear) on the question of how to model dissimilation effects like case competition in syntax. A common analytic thread running across these proposals is the idea that the syntactic machinery needs to make it possible to somehow compare case features on two nominals, e.g. on the clausal subject and object. A fundamental difference between the current proposal and these others has to do with the fact that the syntactic model developed here is the only one that directly incorporates the CPC into its derivational algorithm. As such, it can not only provide a unified account of syntactic assimilation and dissimilation but also predict when we get one vs. the other. Concretely, the current model correctly predicts that case competition effects are only one in a range (albeit restricted) of possible, and actually attested, instances of syntactic dissimilation and gives us a unified way to derive such effects.

This paper is organized as follows. §2 describes the contrast between assimilation and dissimilation across different modules of grammar and discusses two broad analytic approaches to this distinction. §3 and §4 zoom in on the nature of syntactic assimilation and dissimilation, respectively, and showcase the fact that the former is much more common across languages, than the latter; §4 presents arguments from Preminger (2014) and Levin (2015) that case assignment instantiates syntactic dissimilation. §5 shows that the syntactic operation Agree in Minimalism (Chomsky, 2000, 2001, et seq.) is *crash-proof* (Frampton and Gutmann, 2008) for syntactic assimilation: i.e. it always and only yields outputs that are syntactically assimilatory – and explores the conclusions of this outcome for the status of dissimilatory operations in syntax. §6 sets the stage for the proposed model of syntactic relations, RELATE, by motivating and introducing the Category Process Correlation (CPC). §7 describes RELATE, the revised model of Agree, for deriving assimilation and dissimilation in syntax. §8 shows how ϕ-agreement, dependent case, and local anaphora can be derived under RELATE. §9 explores some empirical predictions made by the current model and shows that they are, by and large, fulfilled. §10 summarizes and concludes.

2 Preliminaries

Syntactic assimilation involves a grammatical process which is both syntactic and assimilatory; syntactic dissimilation one which is simultaneously syntactic and dissimilatory. A proper understanding of such phenomena thus involves being clear not only about what it means for a grammatical phenomenon to be assimilatory vs. dissimilatory, but also about what it means for it to be syntactic in the first place. This section is devoted to an explication of these concepts.

2.1 Assimilation vs. dissimilation in grammar

We define assimilation and dissimilation in grammar as in (1) below:[3]

(1) Defining assimilation and dissimilation in grammar:

a. Grammatical assimilation:
An assimilatory process in grammar is one where a relationship $\Re$ between two (or more) elements A and B which stand in a local relation in some domain $\mathscr{D}$ results in results in both A and B bearing a (potentially unary) set of features α.

I.e. $\Re(A, B) \xrightarrow{Assimilatory} [_{\mathscr{D}} \ldots A_{\alpha} \ldots [\ldots B_{\alpha} \ldots]]$

b. Grammatical dissimilation:
A dissimilatory process in grammar is one where a relationship $\Re$ between two (or more) elements A and B, which are visible to one another in some local domain $\mathscr{D}$, results in A bearing a (potentially unary) set of features α and in B bearing a (potentially unary) set of features β, where $\alpha \neq \beta$.

I.e. $\Re(A, B) \xrightarrow{Dissimilatory} [_{\mathscr{D}} \ldots A_{\alpha} \ldots [\ldots B_{\beta} \ldots]], \alpha \neq \beta.$

[3] These definitions explicitly preclude cases of accidental assimilation and dissimilation – i.e. cases where two or more elements merely *happen* to bear the same features or distinct features despite not being related in any way. Rather, assimilation and dissimilation across two elements comes about solely as a virtue of these elements first being linked for some (set of) feature(s). The definition in (1b) subsumes cases of partial- and full-dissimilation. With the former, α & β are not featurally disjoint: i.e. α is a proper subset or superset of β or linking A and B results in both sharing some but not all features; with the latter, A and B are necessarily featurally disjoint. Finally, note that, for both assimilation and dissimilation, the notions of "feature", "locality domain", "visibility", and the elements A and B themselves, may be characterized syntactically, (LF-)semantically or morpho-phonologically.

Some cases of grammatical assimilation are ϕ-agreement as in (2), variable binding as in (3) and place-assimilation as in (4):

(2) ϕ-agreement (assimilation for ϕ-features):
$\boxed{\text{She}}$ love-$\boxed{\text{s}}$ them.

(3) Variable binding (referential co-variance):
$\boxed{[\boxed{[\text{Each athlete}]_i}\text{'s trainer}]_j}$ stood when $\boxed{\text{her}_{\{i,j\}}}$ name was called.

(4) Place assimilation in English:

a. i[mp]ossible (in + possible)
b. i[l:]egal (in + legal)

(2) shows grammatical assimilation for person and number features across the subject and T head in a clause; (3) shows referential covariance[4] across an R-expression or pronoun and a variable. In both (4a) and (4b), the nasal consonant /n/ in the negated prefix assimilates for place of articulation with the onset consonant of the adjacent root. But where in (4a) the linked consonants differ for other features, e.g. nasality & voicing, they are featurally fully indistinguishable in (4b).

Cases of grammatical dissimilation include partial dissimilation as in the partial (obligatory) control construction in (5). Here, the referent, Leela, of the matrix subject in (5), is contained in that of the embedded PRO subject, which denotes Leela and some other salient individuals:

(5) Leela$_{\boxed{i}}$ wanted [PRO$_{\boxed{i+j}}$ to meet at 5pm].

Binding Conditions B and C (Chomsky, 1981) describe full-dissimilation for reference for pronouns and R-expressions, respectively. Binding Condition B states that two locally c-commanding pronouns cannot corefer (6). Disjointedness effects due to Condition C are much more global, and prevent an R-expression from being c-commanded, as shown in (7):

(6) Ali$_{\boxed{i}}$ saw him$_{\boxed{j,*i}}$.

(7) * $\boxed{\text{Leela}_i}$ said that [Ali couldn't share $\boxed{\text{Leela}_i\text{'s}}$ food].

The Obligatory Contour Principle (OCP), namely the restriction that "At the melodic level, adjacent identical elements are prohibited" (McCarthy,

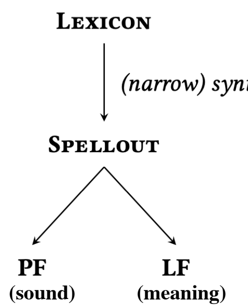
[4]Covariance is different from matching. Being quantificational, the term"each athlete" does not have a fixed reference; what matters for the purposes of variable binding is that the referential variance of *her* tracks that of each athlete.

1986, Ex. 2, 208), also instantiates grammatical dissimilation. The OCP has been argued to restrict the distribution of roots in Semitic languages.[5]

2.2 Diagnosing syntax

For the purpose of the discussion going forward, I will assume that the grammar is "Y"-modular, involving a generative, computational "narrow" syntax module and dedicated modules LF and PF, respectively, for meaning and form. The derivation begins with the merging of some element from the lexicon to the narrow syntax and enters LF and PF at SpellOut, as shown in (8):

(8) Modular grammar (Y-model):



The derivation exits after the last respective operations at the end of LF and PF. Per (8), all operations at LF and PF are *post*-syntactic, i.e. obtain after all narrow-syntactic operations have been completed.

A grammatical derivation spanning these modules is understood to be *monotonic*, or *cyclic*. Assume that a syntactic operation Op is a function that takes a syntactic structure σ as input and yields an updated syntactic structure σ' as output. I.e. $Op(\sigma) = \sigma'$. Likewise, an LF operation is a function that applies to an LF-legible hierarchical structure, and a PF operation is a function that applies to a PF-legible (pre- or post-linearized) structure. A grammatical derivation, then, is nothing but a sequence of ordered pairs – each involving an operation paired with the corresponding grammatical structure – spanning syntax, LF, and PF, as defined in in (9).[6] This sequence

[5] E.g. Arabic disallows nominal and verbal stems of the form [C_iVC_iX] where X is non-null. Thus, it lacks verbs built on the stem *sasam*.

[6] This is a bit of an oversimplification. I am assuming that the final syntactic output, σ_i, of a derivation is input simultaneously to LF and PF. As such, LF and PF operations are not ordered relative to one another, but proceed in parallel. A grammatical derivation is thus a partial order, in the mathematical sense, not a strict one. I am ignoring this point in the definition in (9) for reasons of simplicity.

itself is monotonically ordered, as defined in (10):

(9) Grammatical derivation:
A grammatical derivation $D =_{def} \langle\langle Op_1, \sigma_1\rangle, \langle Op_2, \sigma_2\rangle, \ldots, \langle Op_n, \sigma_n\rangle\rangle$, where Op_i is a grammatical operation in D and σ_i is a grammatically legible structure in D.

(10) Monotonic/Cyclic grammatical derivation:
For any grammatical derivation $D = \langle\langle Op_1, \sigma_1\rangle, \langle Op_2, \sigma_2\rangle, \ldots, \langle Op_n, \sigma_n\rangle\rangle$, an operation Op_i applied to σ_i in D can feed or bleed Op_j applied to σ_j in D, just in case $j > i$.

Informally, (10) states that a grammatical operation on a given structure can affect a subsequent operation on an updated variant of that structure, but may not affect any previous operations on any previous variants of the structure. A post-syntactic operation at LF should be able to feed or bleed any subsequent operations at LF but should be unable to influence any prior operations at LF, or operations in narrow syntax, or at PF.[7] For instance, LF movement (e.g. quantifier raising) should never trigger or block operations in narrow syntax; it should also not be able to bear phonological content (i.e. should be a case of covert movement). Analogously, a post-syntactic PF operation should be able to feed or bleed any subsequent operations at PF but should be unable to affect operations at narrow-syntax or LF. So PF operations like voicing assimilation, vowel syncope or linearization should be unable to affect syntactic structure or LF-interpretation in any way.

We can now define a syntactic operation in opposition to these under the architecture in (8). A syntactic operation, in contrast to those at LF and PF, must be capable of affecting operations at both LF and PF. Such an operation must apply to a syntactically legible structure: i.e. a head or phrase built out of one or more heads. The operation must, furthermore, be constrained by syntactic wellformedness conditions, i.e. locality, c-command and (relativized) Minimality. Given grammatical monotonicity, such an operation should also be able to affect any subsequent operations (applied to appropriate variants of syntactic structure) in narrow syntax but should not be able to influence any previous operations in syntax.

Note that these conditions are not conjunctive; nor do they all have the

[7] Although, as noted earlier, LF and PF operations are not ordered relative to one another, they cannot affect each other because there is no direct connection between them under the Y-model in (8). Any link between LF and PF must be mediated by narrow syntax; but operations in narrow syntax *are* ordered prior to those at LF and PF and therefore remain inaccessible to operations at LF and PF.

same logical status. A non-syntactic operation may, in theory, obey rules of syntactic well-formedness merely because it was fed by a previous syntactic phenomenon which obeys these conditions. For instance, Condition B effects obey both c-command and (phase-)locality but have been argued to be enforced at LF (see e.g. Reinhart, 1993). Syntactic hierarchy and syntactic formatives are also assumed to be visible at LF, so an LF operation could manipulate such elements.[8] Conversely, an operation may be syntactic without feeding or bleeding a subsequent syntactic operation: this is, in fact, always true for the last syntactic operation before Spell-Out. Likewise, a syntactic operation may also fail to feed operations at LF and/or PF. For instance, structural case has been argued not to have an LF counterpart (McFadden, 2004) and similar arguments have been put forth for certain expletives. Analogously, a syntactic object may have no phonetic realization and remain silent; in some cases, e.g. with a controlled PRO subject, such silence is obligatory across languages.

What seems uncontroversial, however, is that a grammatical operation which operates on syntactic formatives, obeys syntactic wellformedness conditions and affects syntax or shows reflexes at both LF and PF must necessarily be (narrowly-)syntactic, as described in (11):[9]

(11) A grammatical operation Op_i applied to a grammatical structure σ_i in some derivation D, for $i \in \mathbb{N}$, must be narrowly syntactic if:

(i) Op_i obeys well-formedness conditions of (narrow) syntax, i.e. syntactic locality, (relativized) Minimality & c-command; and

(ii) σ_i is a syntactically legible structure built out of one or more syntactic heads; and

(iii) Op_i applied to σ_i feeds or bleeds Op_j applied to $\sigma_j)$ in D, where $j > i$ and Op_{i+1} is a syntactic operation and σ_{i+1} a syntactically legible structure in D; and/or

(iv) $Op_i(\sigma_i)$ feeds or bleeds $Op_j(\sigma_j)$ at LF and an operation $Op_l(\sigma_l)$ at PF, in D, where $j > i$ and $l > i$.

We will use the definition in (11) as our heuristic for diagnosing syntactic operations going forward.

[8]For this reason, it is also common to think of LF as simply being syntax post spell-out, a formulation I don't adopt here only because it is convenient to distinguish between syntax from all post-SpellOut operations in grammar.

[9]Thanks to the many linguists – in particular, Thomas McFadden, Niel Myler, Heather Newell, Omer Preminger, Peter Svenonius, and Eytan Zweig – who helped me formulate this, by giving me feedback on a *Facebook* query I posted about this on June 1, 2023.

3 Assimilation in syntax

We now consolidate our insights about what it means for a grammatical operation to be assimilatory, on the one hand, and syntactic, on the other, and define a syntactically assimilatory operation as in (12):

(12) Syntactic assimilation:
A syntactic operation Op applied to two syntactic constituents A and B which stand in a c-command relation in some minimal phase Φ is assimilatory iff Op results in A and B both bearing a (potentially unary) set of syntactic features α.

The definition above rules out variable binding in (3) and place assimilation in (4) as cases of syntactic assimilation. While (3) does operate over syntactic constituents, the binding relation does not need to obey c-command or syntactic locality (e.g. the bound variable pronoun in (3), licitly occurs inside an adjunct island (CED, Huang, 1982; Chomsky, 1986)). The case against place assimilation as a case of syntactic assimilation is arguably even clearer since the assimilation process does not operate over syntactic formatives, but over phonological ones.

In contrast to these, ϕ-agreement as in (2), repeated below, is a strong candidate for syntactic assimilation:

(13) ϕ-agreement (assimilation for ϕ-features):
$\boxed{\text{She}}$ love-$\boxed{\text{s}}$ them.

Assimilation for 3SG features in (13) involves syntactically legible objects like the T head and the subject DP. These elements must, furthermore, be phase-local and minimal to one another and stand in a c-command relation:

(14) * $\boxed{\text{We}}$ say that [she like-$\boxed{\varnothing}$ ice-cream].

(15) * She love-$\boxed{\varnothing}$ $\boxed{\text{them}}$.

(16) * [$\boxed{\text{Her}}$ parents] love-$\boxed{\text{s}}$ them.

Of course, as discussed above, these aren't conclusive. A non-syntactic operation, e.g. one at LF or at PF under a Distributed Morphology approach, may manipulate syntactic formatives and happen to obey well-formedness conditions of syntax. And indeed Bobaljik (2008) argues that ϕ-agreement obtains in the post-syntactic morphology enroute to PF.

The clinching argument for ϕ-agreement being syntactic comes from the observation in Preminger (2014) and Levin (2015) (henceforth P & L) that ϕ-agreement can feed syntactic movement. Consider the raising constructions in French below:

(17) * $\boxed{\text{[A Marie]}_i}$ semble $\boxed{t_i}$ Jean avoir du talent.
to Marie seem Jean have.INF of talent.
Literal: 'To Marie$_i$ seemed t$_i$ Jean to have talent.'
Intended: 'It seemed to Marie that Jean has talent.'

(18) $\boxed{\text{Jean}_i}$ semble (*a Marie) [t_i avoir du talent].
Jean seems (* to Marie) have.INF of talent
'Jean seems (to Marie) to have talent.'

(17) shows that a dative experiencer subject cannot raise to subject-initial position in a clause. (18) shows that an embedded nominative subject cannot raise to matrix subject position across an intervening dative, but can do so in the absence of such a dative. Preminger (2014) observes that these raising patterns directly track ϕ-agreement in French. Dative-marked nominals in French cannot trigger ϕ-agreement. Similarly, an embedded nominative cannot trigger ϕ-agreement (e.g. plural agreement in (19)) past an intervening dative experiencer (adapted from Bošković, 2007):

(19) Il semble-$\boxed{\varnothing}$ au général être arrivé $\boxed{\text{deux soldats}}$.
EXPL seems-SG to.the general to.be arrived two soldiers
'There seem to the general to have arrived two soldiers.'

P & L take this constellation of facts to show that, in French, all and only those nominals that can trigger ϕ-agreement can undergo subject raising. In other words, ϕ-agreement feeds raising to subject in languages like French. Since raising is syntactic (A-)movement, ϕ-agreement must also be syntactic.

The argumentation above takes for granted that cases of A movement, like subject raising in (18), are themselves syntactic. And indeed, this is uncontroversial not only wrt. cases like (18) but also for other cases of A-movement like EPP movement, object shift, passivization, and raising-to-object. In addition to manipulating syntactic formatives under conditions of syntactic well-formedness, such operations may affect surface word-order at PF and have also been shown to affect scope readings at LF (Sauerland, 2003).[10] Overt instances of Ā-movement also count as syntactic since

[10]For instance, Sauerland (2003) argues that subject raising of a quantified subject in a negated sentence, as in (i), can affect scope relations. In (i), raising of *every boy* feeds an inverse scope reading between negation and the quantified subject in addition to the surface scope reading that was already present pre-movement:

i. [Every boy]$_i$ didn't seem to his$_i$ father [to be mature].
($\checkmark \forall \gg \neg$; $\checkmark \neg \gg \forall$)

they satisfy Conditions (i) & (ii) and (iv) in (11). For instance, object wh-movement to an intermediate position in the clause not only affects surface order at PF but can also feed binding at LF (Barss, 1986): While such facts have been primarily taken to argue for the syntactic reality of intermediate movement positions, they also show that such movement must be narrowly syntactic.

Finally, all these operations are assimilatory under the assumption that the launching and landing sites of movement involve identical features. While these features are not overtly realized in a language like English, there are plenty of languages where they are. For instance, in Mon (Mon-Khmer; Myanmar, taken from Gould, 2021, via Branan, 2023), a moved wh-element is exponed at both the launching and landing sites and at any intermediate positions:

(20) | ɲèhkɔ̀h | Mi Ce khɔp mɔ̀ɲ [| ɲèhkɔ̀h | Chan Mon ɲàt | ɲèhkɔ̀h |] rao?
who M. C. think ASP who C. M. see who Q
'Who$_i$ does Mi Ce think Chan Mon saw $\_\_{i}$?

I take this constellation of facts to show that the majority of syntactic operations across languages are assimilatory in the sense of (12) above. As I will argue down the line, this is not an accident but follows from a principled constraint, namely the CPC, on the relative categories of two syntactic elements that are in a syntactic relationship with one another.

4 Dissimilation in syntax

An operation that is syntactic in the sense of (11) is also dissimilatory if it conforms to the definition in (21) below:

(21) Syntactic dissimilation:
A syntactic operation Op applied to two syntactic constituents A and B which stand in a c-command relation in some minimal phase Φ is dissimilatory iff Op results in in A bearing a (potentially unary) set of syntactic features α and in B bearing a (potentially unary) set of syntactic features β, where $\alpha \neq \beta$.

4.1 Potential, but not real, cases of syntactic dissimilation

Many dissimilatory processes in grammar may be summarily excluded based on this definition. For instance, the OCP effects discussed above, while satisfying the input conditions for grammatical dissimilation in (1b), are clearly not syntactic but phonological: e.g. they operate on linearized strings, are constrained by linear adjacency rather than c-command, and involve phonological segments and not syntactic ones. The syntactic status of other dissimilatory phenomena, like Condition B effects, case-marking or partial control, is less obvious. But as we will see below, almost all potential candidates for syntactic dissimilation have been argued not to qualify, on the grounds that they are either not syntactic to begin with, or are not underlyingly dissimilatory.

4.1.1 Condition B effects

Condition B effects, which involve referential dissimilation between a pronoun and its antecedent, as in (22), obtain only under both phase-locality (23) and c-command (24). This makes them a good candidate for syntactic dissimilation:

(22) $\boxed{\text{Ali}_i}$ saw $\boxed{\text{him}_{*i,j}}$.

(23) $\boxed{\text{Ali}_i}$ said that [Zara saw $\boxed{\text{him}_{i,j}}$].

(24) $\boxed{\text{Ali}_i}$'s sister saw $\boxed{\text{him}_{i,j}}$.

But as discussed in §2.2, this doesn't automatically mean that the grammatical operation underlying such effects is syntactic, given that an LF operation may be constrained by such conditions as well. To qualify as being syntactic under the definition in (11), such an operation must also be capable of influencing operations which are syntactic or must feed operations at both LF and PF. As far as I am aware, such effects have not been reported for Condition B effects in any language. And indeed, these effects have been argued to result from an LF rule that ensures that local coreference with a pronoun is possible only when an identical interpretation with a bound variable is ruled out (Rule 1, Reinhart, 1993, & Heim, 1998; Fox, 2000, a.o.).[11,12]

[11] In (22), an identical interpretation with the dedicated bound variable form *himself* is possible, rendering local coreference with *him* ungrammatical. This formulation has the advantage of being able to explain the seeming absence of Condition B effects in languages like Frisian and Brabant Dutch (Reuland, 2011; Rooryck and vanden Wyngaerd, 2011) these being languages which precisely lack a dedicated bound variable in that same position with an identical interpretation.

[12] Condition C effects, in contrast, are not constrained by phase-locality or c-command (cf. (i)-(ii)) – thus don't seem to be syntactic to begin with:

i. * $\boxed{\text{Leela}_i}$ couldn't see $\boxed{\text{Leela}_i}$.

4.1.2 Partial control

In cases of partial control (PC), as in (25), the extension of the matrix subject is included in that of the embedded one, yielding (partial) referential dissimilation:

(25) Malala$_i$ wanted [EC$_{i+(j)}$ to meet].

PC has been argued to be syntactic (see e.g. Landau, 2004), given that it conforms to syntactic wellformedness conditions and involves a relationship over syntactically defined constituents. However, a recent analysis in Pearson (2016) argues that PC obtains due to a dedicated LF operation of "semantic extension", available in the scope of certain attitude predicates, which takes an exhaustive control relation of the form $i \to i$ as input and outputs a partial control relation of the form $i \to i + (j)$. In contrast, an influential line of analyses within the so-called Movement Theory of Control (MTC, Słodowicz, 2008; Boeckx et al., 2010; Sheehan, 2014b, a.o.) argues that (25) *is* syntactic but is not underlyingly dissimilatory.Concretely, it argues that the appearance of partial dissimilation is due to the presence of additional silent material, namely a null comitative PP modifying the controlled subject (26):[13]

(26) Malala$_i$ wanted [[PRO$_i$ (with [the others]$_j$)]$_{i+j}$ to meet].

ITo sum up then, partial control has been argued not to constitute syntactic dissimilation both on the grounds that it is not syntactic and on the grounds that it is not dissimilation.

4.1.3 Case?

When it comes to case, we can again identify two strands of approaches, both of which argue in different ways against the idea that it instantiates syntactic dissimilation. The original version of the dependent case approach in Marantz (1991); McFadden (2004, a.o.) argues that case assignment is regulated by the dependent case algorithm in (27) n the post-syntactic morphology, enroute to PF.

ii. * $\boxed{\text{Leela}_i}$ said that [Ali couldn't share $\boxed{\text{Leela}_i\text{'s}}$ food].

Such effects are, unsurprisingly, analyzed as obtaining at LF (Reinhart, 1983; Safir, 2004, a.o.) – and can thus be dismissed from our scrutiny here.

[13]Indeed, in languages like French, partial control is only possible with embedded predicates that independently allow a comitative reading (Sheehan, 2014a), lending credence to this idea.

(27) Dependent case algorithm (Baker, 2015, 48-49, see also Bárány and Sheehan, To appear):

a. In a spell-out domain with two distinct nominals where DP_1 c- commands DP_2, value the case feature of DP_2 as accusative unless DP_1 has already been marked for [inherent] case.

b. In a spell-out domain with two distinct nominals where DP_1 c-commands DP_2, value the case feature of DP_1 as ergative unless DP_2 has already been marked for [inherent] case.

An influential alternative to this involves licensing approaches to case (as in Chomsky, 1981). This approach operates under the idea that nominals need to be Case-licensed (building on the original Case Filter in Vergnaud, 1977). In Minimalist terms, this is taken to mean that a nominal bears an unvalued Case feature (see e.g. Chomsky, 2001; Legate, 2008, a.o.). The (Caseless, thus active) subject or object of a clause is linked with a dedicated functional head in the clausal spine (e.g. T or v); the nominal values (or checks) the ϕ-features on the head; as a reflex of this, the head checks the unvalued case feature on the nominal. Thus, case-distinctness between a subject and object in a transitive clause does not involve case-competition between these DPs; in fact, these DPs never enter into a direct syntactic relationship with one another. Rather, case dissimilation on the surface is parasitic on syntactic assimilation for a different feature (e.g. a ϕ-feature) between each nominal and a dedicated functional head.

Summing up, we have seen that plausible cases of syntactic dissimilation have been argued not to be so – either because they are not syntactic or because they are not dissimilatory. Given this, it makes sense to ask whether genuine cases of syntactic dissimilation actually exist. Below, I argue that we can identify at least two phenomena which have explicitly been argued in the literature to be bonafide cases of syntactic dissimilation, namely case-marking & local anaphora. I summarize these arguments briefly below and refer the interested reader to the sources cited herein for more detailed data and discussion of the relevant phenomena.

4.2 A real case of syntactic dissimilation: case (again)

Preminger (2014) and Levin (2015) (P & L) argue that case marking involves case competition in syntax, a dissimilatory operation, on the following grounds:

(28) Arguments for syntactic dependent case:

A. (Structural) case assignment involves case-competition.

B. Case assignment feeds ϕ-agreement (Bobaljik, 2008).
C. ϕ-agreement is (narrow-)syntactic (it feeds syntactic movement).

D. ∴ case-assignment is narrow-syntactic.

Let us address each of these points in turn.

A. Case assignment is due to case competition

Much of the evidence for case competition comes from prior work having to do with the post-syntactic approach to dependent case (Marantz, 1993; McFadden, 2004, a.o.) which shows that an overt DP may be licensed even in a structural position where it receives no case (Schütze, 2001, see also Sundaresan and McFadden, 2009). Rather, the evidence shows, the case value assigned to a nominal directly reflects whether that nominal stands in a local c-command relation with another, or not.

For instance, in Sakha (Turkic, NOM-ACC), if an object moves out of *v*P and ends up local to a higher subject, it must bear ACC (Ex. (29), Baker and Vinokurova, 2010). But if the object stays in situ and remains non-local to the higher subject, ACC marking doesn't surface (30):

(29) Masha salamaat-y [türgennik t] sie-te
Masha porridge-ACC [quickly t] eat-PST.3SG.S
'Masha ate the porridge quickly.'

(30) Masha [türgennik salamaat] sie-te
Masha [quickly porridge] eat-PST.3SG.S
'Masha ate porridge quickly.'

In addition to showing that syntactic movement feeds case, this further shows that the case-value of the moved object is determined by whether it is local to the c-commanding subject or not.[14] Analogous effects have been argued to obtain in languages with ERG-ABS case alignment (Yuan, 2018, 2021b, for Inuit). A case-licensing account cannot readily capture such effects.

[14] Baker and Vinokurova (2010) argue for Sakha that case assignment in this language involves both head-based licensing & dependent case. But Preminger (2014) argues against this split, proposing that all case effects in this language may be accounted for in terms of dependent case alone.

B. Case feeds ϕ-agreement

Per the original Moravcsik Hierarchy (Moravcsik, 1974) in (31), clausal subjects are the most likely to trigger ϕ-agreement while adverbs are the least likely:

(31) Moravcsik Hierarchy (Moravcsik, 1974):
Subject > Direct Object > Indirect Object > Adverbs

However, Bobaljik (2008) proposes that the hierarchy of agreement triggers is really ordered according to morphological case, as in (32):

(32) Revised Moravcsik Hierarchy:

Unmarked case (NOM) > Dependent case (ACC) > Lexical oblique case (DAT & others)

In many, perhaps even most, instances, grammatical function and morphological case do *not* diverge. But "in every instance where grammatical function and morphological case diverge, ϕ-agreement tracks the latter and disregards the former." (Preminger, 2014, 145), as illustrated for Tamil (Dravidian, NOM-ACC):

(33) Leela-vŭkkŭ $\boxed{\text{pasaŋ-gaḷ}}$ teri-nʤ-$\boxed{\text{aaŋgaḷ/*aaḷ}}$.
Leela-DAT boy-PL.NOM appear-3PL/*3FSG
'Leela saw the boys.'

(33) involves a predicate that takes a "quirky" dative subject and a nominative object. Per (31), ϕ-agreement on the clausemate verb should be triggered by *Leela* since this is a subject. But per (32), the agreement should be triggered by *pasaŋgaḷ* ('boys') since it is nominative. The latter is proved correct for Tamil: ϕ-agreement on the verb in (33) is indeed triggered by the nominative object, not the dative subject.

What this shows is that ϕ-agreement is case-discriminating: i.e. case feeds ϕ-agreement. Given derivational monotonicity (cf. (10)), this means that case assignment must happen before ϕ-agreement in the derivation.

C. ϕ-agreement is syntactic

Bobaljik (2008) took the Revised Moravcsik Hierarchy to mean that ϕ-agreement is post-syntactic following the arguments in Marantz (1993); McFadden (2004, a.o.) that dependent case must be post-syntactic. However, as discussed above, P & L argue that ϕ-agreement is (narrow-)syntactic based on evidence showing that it can feed syntactic movement in a language like French (cf. (17)-(18)) and (19).

Ergo: Dependent case is (narrow-)syntactic

Putting these facts together, we arrive at the following conclusion. Case assignment happens before ϕ-agreement. ϕ-agreement itself is (narrowly-)syntactic. Therefore, given derivational monotonocity and the modular grammar in (8), case-assignment must also happen in narrow syntax. But case-assignment involves case-competition involving the dependent case algorithm in (27), not case licensing,Ergo: case assignment instantiates bonafide syntactic dissimilation (pace Bárány and Sheehan, To appear).[15] The conclusions in P & L are corroborated in Poole (2022) who argues that dependent case is syntactic because it respects the Williams' Cycle (Williams, 1974, 2003) (which Poole argues is itself syntactic) and because it may be interspersed with syntactic structure-building. Going forward, I will take the conclusions in P & L as well as those in Poole (2022) to show that (at least some instances of) case assignment represent(s) a bonafide instance of syntactic dissimilation.

5 Deriving syntactic relations in Minimalism

In a generative system, a syntactic phenomenon may be derived *crash-proof* or *crash-free* (Frampton and Gutmann, 2008). The choice between these bears significant repercussions for whether the syntactic output is assimilatory or dissimilatory.

In the crash-free approach, two syntactic constituents A and B are linked by virtue of both bearing (tokens of) the same feature α. For instance, ϕ-agreement in a sentence like (2) would simply result from the process of flagging that both T and the subject DP bear ϕ-features valued as *1sg*. There

[15] Bárány and Sheehan (To appear) argue explicitly against P & L's position that *all* case assignment is configurational, involving the dependent case algorithm. They argue instead that "this strongest position is incorrect and that even certain cases which are descriptively 'dependent', in that case assignment is clearly sensitive to the presence of another argument, are actually better modelled by Agree." [p. 4]. To this end, they show that case-competition may involve elements that are not themselves case-undergoers, i.e. non-nominals. While this doesn't mitigate against a case-competition account per se, it does challenge the idea that case-competition is driven by the need to dissimilate one nominal from another in a local domain. They further argue that a dependent case approach cannot capture case splits crosslinguistically: i.e. instances where, descriptively, the case-marking on a nominal seems to be sensitive to person hierarchies. Indeed, it is possible that not all case assignment can be reduced to case competition. In fact, we must already assume this to deal with lexical and inherent cases crosslinguistically. At the same time, I take the arguments in P & L to show that case assignment does, at least in some instances, involve syntactic dissimilation.

is no deep requirement that feature matching happen; rather, when the state-of-affairsis such that it happens to involve feature-matching between A and B, this is formally flagged and interpreted as a case of grammatical assimilation, corresponding to the definition in (12).

A crash-proof approach, in contrast, is predicated on the idea that syntactic relationships are fundamentally *asymmetric*, involving directional *dependencies* between a featurally independent element and a featurally dependent counterpart. Featural linking, under this approach, is triggered by the recognition of a featural asymmetry of the following form: "Constituent A bears some feature α; constituent B lacks α but needs it".[16]Assuming that A and B are syntactically visible to one another, this asymmetry could, in turn, feed a process of feature-copying of the α-value x from A to B, resulting in a representation that is assimilatory as under (12).

The crash-free approach yields grammatical assimilation as a *possible* outcome. Since there is no requirement that the features on A and B always match, such an approach is equipped to derive assimilation as well as dissimilation in grammar. Ackema and Neeleman (2013) develop precisely such an approach to drive cases of so-called "subset control" in a language like Serbo-Croatian – cases where the ϕ-features on the putative controller of agreement are a proper subset of those on the target. In contrast to this, the crash-proof model yields assimilation as a *necessary* outcome: i.e. copying α from A to B or from B to A will necessarily result in a representation where A and B both bear α.

5.1 Agree is crash-proof for assimilation

In later versions of Minimalism (i.e. Chomsky, 2000, and subsequent), all syntactic relationships are formally derived via the operation termed "Agree". For the purposes of the current discussion, the most important aspect of Agree is that it is crash-proof with respect to syntactic assimilation.

To quote Chomsky (2001, 3): "The empirical facts make it clear that there are (LF-)uninterpretable inflectional features that enter into agreement relations with interpretable inflectional features . . . We therefore have a relation Agree holding between [syntactic constituents in a local c-command relation] α and β, where α has interpretable inflectional features and β has

[16]Note that this information cannot be readily captured under a privative feature system. Such a system can only capture an asymmetry of the form "A bears α but B lacks it.", and cannot include additional information showing that B needs α. However, an attribute-value feature system where a feature is conceived as a property (one-place predicate) denoting a set of featural values, is well equipped to capture precisely such an asymmetry.

uninterpretable ones, which delete under Agree. The relation Agree and uninterpretable feaqtures are prima facie imperfections." β is a probe – it seeks to have its uninterpretable features checked and deleted – and α is its goal, because it posesses matching interpretable features which can do precisely this. Agree, then, is a repair mechanism, designed from the ground up to rectify the featural asymmetry between α and β: "The erasure of uninterpretable features of probe and goal is the operation we call *Agree*" (Chomsky, 2000, 122).

Subsequent work on Agree has called into question the precise nature of the feature asymmetry holding between the probe and goal: is it feature uninterpretability, as stated above, or feature unvaluedness, or a combination of both (see e.g. Pesetsky and Torrego, 2007)? Does the probe c-command the goal, as originally envisioned in Chomsky (2000, 2001) and proposed in Bošković (2007), or does the goal c-command the probe (Wurmbrand, 2011; Zeijlstra, 2012) or are both systematically allowed (Baker, 2008; Bjorkman and Zeijlstra, 2019, a.o.)? What happens in cases of cyclic Agree involving iterated intermediate relations between a probe and goal (see e.g. Legate, 2005)? And what about cases of multiple Agree, where a single probe interacts with multiple goals (see e.g. Béjar and Rezac, 2009; Deal, 2015; Kalin, 2020; Coon and Keine, 2021)? And what happens on the other end of the spectrum, when a probe has no matching goals (cf. Preminger, 2014)? Much has been written on these topics and there isn't always a clear consensus about the specific technical details of implementation.

Despite these disagreements, all theories of Agree hold, as far as I know, to the fundamental premise that syntactic relationships are asymmetric dependencies triggered by a featural asymmetry between a probe and a corresponding goal under appropriate conditions of structural wellformedness. Agree redeems this featural asymmetry by having the goal check or value the uninterpretable or unvalued, respectively, features on the probe. The output of Agree is thus invariably a configuration where both probe and goal bear matching features, yielding a syntactically assimilatory configuration corresponding to the definition in (12).

5.2 The challenge, and the way forward

This raises a clear challenge for the handling of dissimilatory phenomena like case competition effects in syntax. Simply put, if Agree is designed to always and only yield syntactic assimilation, then cases of syntactic dissimilation cannot be captured under Agree (at least not straightforwardly, see proposals to this effect in Clem and Deal, 2023; Poole, To Appear, which I discuss briefly later).

An obvious solution would be to propose a new syntactic operation dedicated to deriving syntactic dissimilation. The proposed modeling of syntactic dependent case in Preminger (2014) is a case in point (see also Poole, 2022, for an implementation along these lines): "The way I will implement case competition in syntax is as follows. Assuming that case features are DP-level features . . . let us suppose that one of the ways valuation of case features can take place is for two DPs with as-yet unvalued case features to stand in a c-command relation that does not cross relevant locality boundaries . . . One could then view dependent case as a feature value indicating "I have (been) c-commanded (by) another DP with unvalued case features in the course of the derivation . . . ""(Preminger, 2014, p. 205).

But as Preminger himself goes on to admit, this is not particularly explanatory.[17] Furthermore, it harkens back to a GB world-view whereby grammatical phenomena were handled by dedicated grammatical modules (e.g. the control module, or the binding module) and violates the Minimalist agenda in its purest sense, i.e. the idea that "The language faculty is an optimal solution to minimal design specifications" (Chomsky, 2001, 1). In more recent work, Branan (2022) proposes to derive case-competition in syntax via selective case-feature percolation across syntactic *paths*.[18] Branan's restriction that a node cannot bear multiple identical tokens of a single feature shares a core intuition with the analysis I'll develop here. At the same time, Branan doesn't flesh out how the distinction between assimilatory and dissimilatory processes is derived in this system.

An alternative approach, which is also compatible with the idea of a pared down Minimalist syntax, would be to radically revise the nature of Agree such that it can derive not only assimilatory processes in syntax like ϕ-agreement and A-movement but also dissimilatory ones like local anaphora and dependent case. Two recent papers in Clem and Deal (2023) and Poole (To Appear) propose a solution along these lines. The main idea in Clem and Deal (2023) is that dependent case effects can be syntactically derived in terms of cyclic Agree between a probe and two goals, specifically

[17] To quote Preminger (2014, 205): "I have no soothing words to offer, in this respect, except to say that the conclusion that case competition must be part of syntax is forced by the empirical state of affairs surveyed in this and previous chapters, and I see no simpler way at the present time of implementing it than the one outlined here."

[18] Branan assumes that all features (including checked features) project. But a node cannot bear multiple tokens of a single feature (e.g. [D]). Thus in a clause with subject and object DPs, the [D] feature on only one of these nominals may project at any given time. This yields the effect of dependent case: concretely, the nominal whose [D] feature does not project is assigned dependent case, the other receives default case.

as a result of the features of the first goal being copied onto the second via a mediating probe. To make this work, Clem & Deal must assume, first, that probes can Agree with multiple goals. Second, they must posit that features copying can be not just bidirectional between a probe and goal, but also transitive, such that features from a goal can be copied onto a probe and then again from that probe onto a second goal. Support for this approach comes from the observation that dependent case effects in Shawi (Kawapanan; Peru) are subject to person hierarchy constraints which have been argued to arise precisely in scenarios involving cyclic Agree.

Poole (To Appear) also proposes to derive syntactic dependent case via Agree but does so very differently. For Poole, dependent case arises due to Agree with a "probe stack" involving ordered and case-discriminating ϕ-features, e.g. $\langle [*\phi*]^{\text{UNM}}, [*\phi*]_{\text{DEP}}{}^{\text{UNM}} \rangle$. Case assignment is a reflex of Agree for a different feature, e.g. a ϕ-feature, with the added assumption that DPs are born with unvalued case features. The feature-ordering on the probe stack specifies the order of probing and ensures that $[*\phi*]_{\text{DEP}}{}^{\text{UNM}}$ probes only after $[*\phi*]^{\text{UNM}}$ has done so. This sets the stage for a NOM-ACC case configuration, with the unmarked [UNM] case c-commanding dependent [DEP] case on the nominals. To make this work, of course, Poole must assume that features on probes may be extrinsically ordered, that ϕ-features can be case discriminating and that a potential goal may become syntactically opaque (or inaccessible) in the course of Agree. The latter is required to ensure that $[*\phi*]_{\text{DEP}}{}^{\text{UNM}}$ probes past the minimally closer DP which has already Agreed with $[*\phi*]^{\text{UNM}}$ in the first cycle of probing. While these assumptions have, indeed, been independently proposed in the literature, as Poole notes, they do end up burdening the mechanism of Agree considerably.

Broadly speaking, both proposals derive dependent case by having both DPs in a case dependency enter into an Agree relation with the same functional head, but crucially one after the other. This sequential multiple Agree plays a crucial role in determining the unmarked vs. dependent case distinction. The proposal I develop below is similar to these in that it also seeks to derive dependent case effects under a significantly revised model of Agree. At the same time, it rejects the premise that feature asymmetry between two nodes is a precondition on Agree between them. Under my proposal, syntactic relationships are feature-driven, i.e. are driven by the presence of an unvalued feature on at least one of the nodes but two nodes which both have unvalued features may nevertheless be linked. This paves the way for deriving dependent case by directly comparing case features on two local DPs without mediation by a functional head.

The second, and more significant, deviation has to do with the fact that the revised model of Agree I propose derives the Category Process Correlation (CPC) – namely the idea that syntactic assimilation involves a relationship between (elements belonging to) unlike categories while syntactic dissimilation involves one between like categories. As such, it can correctly predict not only when we should get syntactic assimilation and when dissimilation but also explain why the latter is so much more crosslinguistically uncommon than the former. To the extent that the CPC is real – and I contend that it is – any model of syntactic relationships should find a way to accommodate and implement it.

Finally, the current proposal can also derive other instances of syntactic dissimilation besides dependent case – such as certain cases of local anaphora and dependent valuation in complex predicates – without the need for any additional machinery or assumptions. While this may also be doable under the models in Clem and Deal (2023) and Poole (To Appear), it remains to be seen how these would be made to work under these systems.

6 The Category-Process Correlation (CPC)

Here I introduce the Category-Process Correlation which underlies the revised algorithm of Agree proposed in this paper.

6.1 Motivating the CPC

We start with the observation that syntactic assimilation typically obtains between categorially distinct elements. For instance, the probe and goal in an Agree relation are typically assumed to belong to distinct categories. Such categorial asymmetry is, furthermore, a potential function of the featural asymmetry holding between these elements which drives the Agree relation between them in the first place. For instance, Agree for ϕ-features involves a relationship between a ϕ-deficient probe and a structurally appropriate goal which bears the relevant ϕ-features. But the only syntactic constituent that can serve as the ultimate goal[19] for ϕ-Agree is a nominal, e.g. D or N, which, *by virtue of being a nominal*, bears non-deficient ϕ-features.

[19] I am being careful to distinguish between intermediate and ultimate goals in cases of Agree. Under a model of cyclic Agree, involving successive links between pairs of constituents, driven by transitivity, the probe in one cycle of Agree becomes the goal for another in the next cycle of Agree.

In contrast, ϕ-deficient elements typically[20] tend to be non-nominal – e.g. are adjectival (A) or verbal (e.g. T, *v*). Typical cases of syntactic movement similarly involve categorial distinctness between the probe (the element that drives movement) and goal (the moving element). For instance, EPP (A-)movement of a subject from Spec, *v*P to Spec, TP is thought to involve Agree + internal Merge between T (which is a probe for e.g. a D edge feature) and a DP which bears a valued D feature. The subject DP moves to Spec, TP where it checks the unvalued D feature on T.

In contrast, syntactic dissimilation typically seems to obtain between elements that are categorially identical. This is definitely true for case. Dependent case assignment in syntax analogously involves a syntactic relationship holding under local c-command between two nominals which can bear a case feature (see also the discussion in Baker, 2015, with respect to the idea that such categorial identity underlies case distinctness). These nominals are typically phrasal, e.g. are both DPs, but case-competition is attested even in instances where they are not. For instance, Yuan (2020) argues that dependent case effects obtain in structures involving pronominal clitics in a local case domain, invoking data from Yimas. This suggests that what matters for dependent case assignment is not that the case-bearing elements belong to a particular category of nominal, e.g. D or N, but that they be categorially identical, whatever this category may be. We will see that it is also true for local anaphora, which I will end up arguing can also instantiate syntactic dissimilation.

Further support for the idea that categorial identity underlies syntactic dissimilation comes from case-concord across languages, where two elements belonging to *distinct* categories are linked for case. As predicted, what we see in these cases is case-matching between the linked elements, not case-distinctness, as illustrated in Warlpiri (34) from Simpson (1991, 258-259, formatting mine):

(34)	Kurdu-jarra-rlu	wita-jarra-rlu	ka-pala	maliki	wajili-pi-nyi.
	child-DU-ERG	small-DU-ERG	PRS-3DU.S	dog	chase-NPST

‘The two small children are chasing the dog.’

Case concord is thus “similar to agreement in that it involves case-features being morphologically realized on multiple categorially distinct elements within the DP” (Clem and Dawson, To Appear, 2). Case matching is also

[20] Some nominals may be argued to be ϕ-deficient as well – as has been argued for cases of nominal anaphora in some languages (see e.g. Kratzer, 2009; Reuland, 2011; Rooryck and vanden Wyngaerd, 2011; Sundaresan, 2020).

attested in structures involving predicate nominals (35) and small clauses (36):

(35) Ali is a fool.
(36) I consider Ali a fool.

Longobardi (1994) argues that the absence of case distinctness in these cases has to do with the relevant nominals being categorially distinguishable at the interfaces, e.g. as DP vs. NP.

6.2 Defining the CPC

Given this constellation of observations, I will henceforth take it as given that the choice between assimilation and dissimilation in syntax is conditioned by the categorial status of the syntactic elements that are thus assimilated or dissimilated, as described in (37) below:

(37) Category-Process Correlation in syntax (CPC):
   a. Syntactic dissimilation typically obtains between categorially identical elements;
   b. Syntactic assimilation typically obtains between categorial non-identical elements.

I propose that a syntactic operation must be sensitive to the categorial features on two linked elements and whether they are the same or different, just as it is argued to sensitive to the presence of an uninterpretable feature on a probe in cases of Agree. Syntactic dissimilation across two elements is forced by the categorial identity of these elements. Syntactic assimilation, in contrast, may obtain just in case categorial identity fails to hold.

A few more clarifications are in order. For the purpose of this discussion, I theoretically define a grammatical category as (a) root-level syntactic feature(s) on a grammatical object which drive(s) and/or constrain(s) how that object participates in structure-building, i.e. Merge. Descriptively, grammatical categories regulate the hierarchical distribution of syntactic constituents in a clause. Typologically, I assume the most parimonious inventory of grammatical categories, which is consistent with empirical findings, as possible, to avoid the danger of rendering the CPC unfalsifiable. At the same I remain agnostic about whether all functional categories inside an extended projection – e.g. the various functional flavors of C (Rizzi, 1997; Cinque, 1999, et seq.), D (Caha, 2009; Middleton, 2020), or P (Svenonius, 2008) – count as distinct for the purposes of the CPC. It is, indeed, possible that the question of what counts as a distinct category within an extended projection is parametrized.

6.3 What underlies the CPC?

It is useful to ask why something like the CPC must hold in the first place. While I have no definite answers, I proffer some speculative discussion here. Richards (2010) makes a compelling argument for the crucial role of *distinctness* in grammar, specifically at the point of linearization at PF. Per Richards, "If a linearization statement $\langle \alpha, \alpha \rangle$ is generated, the derivation crashes." (Richards, 2010, 2010, Ex. 5, 5). Interestingly, Reuland (2011) proposes that legibility at LF is subject to a similar constraint. Specifically, for Reuland, local binding of a simplex reflexive (e.g. *zich* in Dutch) is ruled out because the reflexive and its antecedent are effectively copies of one another – i.e. token vs. type distinction breaks down at LF – thus cannot be interpreted twice, as required. This, for Reuland, is why so many languages use a complex reflexive (e.g. Dutch *zichselv*) in such constructions instead.

Building on these ideas, I suggest that all syntactic dependencies may be conditioned by the generalized OCP constraint given in (38):

(38) Generalized OCP constraint (OCP_{Gen}):
  a. The output of a syntactic relation $\Re$ holding under local c-command between two syntactic constituents A and B may not render A and B featurally indistinguishable at the interfaces.
  b. Corollary: the output of a syntactic link between two local syntactic constituents A & B must yield a representation where A & B remain distinguishable at LF and/or PF.

It seems plausible that (38) is an interface condition on syntactic output, much like the θ-criterion or the ban on LF-uninterpretable features, and serves as a wellformedness constraint on the output of a syntactic derivation at Spell-Out. At LF, the assumption is that two locally linked elements that are featurally indistinguishable cannot be semantically interpreted twice (token vs. type distinction breaks down locally, as proposed in Reuland, 2011). At PF, we will continue to assume with Richards that a local representation with two featurally indistinguishable linked elements cannot be linearized. Note that, if OCP_{Gen} is to be relevant for both LF and PF, as I propose here, it must really apply at the level of narrow-syntax, and cannot apply at PF, as proposed by Richards, or at LF, as proposed by Reuland.

How does OCP_{Gen} effectively constrain syntactic operations? The answer is that it doesn't, or at least not directly. While it is tempting to think of a syntactic process, be it assimilatory or dissimilatory, as being triggered or subsequently repaired by the *need to satisfy* OCP_{Gen}, such an assumption is problematic for at least two reasons. If we were to implement OCP_{Gen} as a syntactic repair mechanism operating on penultimate syntactic representations at Spell-Out, we predict that its output cannot (counter-)feed or (counter-)bleed other syntactic operations. This is an undesirable outcome given that dissimilatory processes like case assignment, which we can envision as a repair precisely of this kind, can feed ϕ-agreement (cf. the Revised Moravcsik Hierarchy in Bobaljik, 2008, discussed above). If, on the other hand, we assume that operations throughout the narrow-syntactic derivation are triggered by a need to satisfy OCP_{Gen}, we violate derivational monotonicity (10).

The right kind of solution must instead involve a purely autonomous syntactic operation which is both "dumb" and imprecise with respect to OCP_{Gen}, and merely *happens* to produce outputs that, for the most part, don't violate this constraint. It seems reasonable to imagine that such a result is enforced through grammatical natural selection effected by language change. Any syntactic representations that don't satisfy the OCP_{Gen} will be filtered out and will thus not be passed on to future generations. Only languages that have the syntactic means to deliver a sufficiently varied selection of structures that can satisfy OCP_{Gen} will survive in the course of language change. The CPC is an obvious way to satisfy OCP_{Gen}: category features are root-level features and are thus visible to both LF and PF. It seems reasonable, then, that the distinctness or identity of two syntactically linked elements be determined in terms of their respective categorial features.

7 Formalizing the proposal: introducing RELATE

I formalize these intuitions via a revised model of Agree in syntax. I term this model RELATE only to make clear its distinction from classic variants of Agree. I propose that RELATE, defined as in (39), underlies all syntactic relationships, be they assimilatory or dissimilatory:

(39) The RELATE algorithm:

1. LINK: Link two locally c-commanding objects A & B for some featural attribute α (notated $Link_\alpha(A, B)$).

2. COMPARE: For some $Link_\alpha(A, B)$ where A and/or B is unvalued for α, check whether A & B in $Link_\alpha(A, B)$ are identical wrt. a categorial feature β, where $\beta \neq \alpha$.
   (i) If Yes $\rightarrow$ DISAGREE: force values for α to be distinct across A & B.
   (ii) Else $\rightarrow$ AGREE: allow values for α to be replicated across A & B.

RELATE is similar to, and adopts from, standard variants of Agree in many respects. While the LINK sub-algorithm is itself not feature-driven – i.e. every feature is linked with a matching one in its search domain – the COMPARE algorithm *is* feature-driven, in much the same way as Agree is. For instance, if the feature linking two elements A and B is valued on both, then COMPARE does nothing and that link is returned to the derivation unchanged. COMPARE only manipulates linked objects where the linking feature α is unvalued on at least one of the linked objects. This includes cases where α is unvalued on just one of them, replicating the probe-goal paradigm in Agree, and also cases where α is unvalued on both. The latter does not constitute a radical departure from Agree either since similar proposals have been made in Pesetsky and Torrego (2007) and others. The articulated nature of RELATE also finds parallels in articulated models of Agree proposed in Nevins (e.g., 2014); Kalin (e.g., 2020) which involve the idea that Agree involves a sequence of sub-operations which are (potentially) distributed across distinct grammatical modules.

The only significant addition to the model involves the incorporation of the CPC which is derivationally implemented by the COMPARE sub-algorithm. In cases where two linked elements are categorially identical, these elements are distinguished with respect to the value of the feature linking them, since failing to do so would violate OCP_{Gen}. In all other cases (which is, in fact, most cases since this is the Elsewhere scenario), we get feature assimilation for values of α across A and B, much as under Agree. Ultimately, since assimilation is not the only possible output under RELATE, this model is not crash-proof with respect to syntactic assimilation and can thus, at least in theory, also derive cases of syntactic dissimilation, just as desired.

7.1 How LINK works

I propose that LINK works in the simplest possible way and links two nodes $X(P)$ and $Y(P)$ which are: (a) in a c-command relationship and (b) minimally close with respect to some feature α, for that feature α.

7.1.1 LINK is fallible and insatiable

I assume, as under standard Agree models, that syntactic features are organized as attribute-value pairs and that they may be valued or unvalued on specific nodes. But LINK looks only at featural attributes, not featural values; thus, linking can obtain regardless of whether the features on the linked nodes are valued or unvalued. This has the effect of making LINK be *fallible* in the sense of Preminger (2014): i.e. if LINK fails to find a featural match in the search-domain of some node, it will simply exit at that stage without penalty to the derivation.

Additionally, the establishment of $Link_\alpha(A, B_k)$ does not bleed the formation of $Link_\alpha(A, B_{k+n})$, for some $n \geq 1$, i.e. does not bleed the establishment of subsequent links with A. This means that LINK is, by default, also *insatiable* in the sense of Deal (2022). Both these properties of LINK, i.e. its fallibility and insatiability, allow it to be, in the default case, a computationally simple operation which blindly probes the entire search space of a given node to see if feature-linking with that node is possible, sets up a link whenever this is possible, and exits without penalty to the derivation otherwise.

I further assume a Bare Phrase Structure (Chomsky, 1994) which renders as trivial the distinction between a head X and its projections X' and XP. This means that all instances of local c-command (i.e. cases where some node A c-commands a node C & there is no intervening node B which is c-commanded by A and c-commands C) reduce to cases of sisterhood (see also Béjar and Rezac, 2009; Keine and Dash, 2018; Preminger, To Appear, for discussion of this point). Effectively, then, a link between some node X and a node Y or Y' in X's c-command domain will be trivially equivalent to a link between X and YP and will not be counted separately. This lightens the computational burden of LINK considerably.

7.1.2 Deriving Relativized Minimality by interleaving with COMPARE

A final important property of LINK is that it is interleaved with COMPARE. The output of a successful link for some feature α with a just-merged node A, consisting of A and some other node B in A's search domain, is immediately sent off to COMPARE (in accordance with the Strict Cycle Condition

(SCC) in Chomsky, 1973, and the Earliness Principle Pesetsky, 1989).[21] If A and/or B is unvalued for α, COMPARE will compare the categories of A and B and accordingly trigger AGREE or DISAGREE. The output of COMPARE is then fed back to LINK and will affect the nature of future links with nodes that are subsequently merged in the tree.

Assuming a bottom-up derivation, this means that a lower link will be established before a higher one and will be fed to COMPARE sooner. Consider now a structure where some node B bearing a valued feature α is linked for α with a categorially distinct node C in its c-command domain, which bears unvalued α. The resulting structure is as in (40) ("$X \ldots Y$" := X c-commands Y):

(40) $[B_{[\alpha:y]} \ldots [\ldots C_{[\alpha:\_\_]} \ldots]]$

$\mathrm{Link}_{\alpha}(B, C)$

As discussed above, $Link_{\alpha}(B, C)$ will immediately be shipped to COMPARE, resulting in B valuing α on C, since B and C are categorially distinct. This output is now fed back to LINK. Now, assume that a c-commanding node A which is categorially distinct from C and also bears a valued feature α is merged higher in the structure. The new structure is now as in (41a), not (41b), reflecting the idea that C no longer bears unvalued α.

(41) a. $[A_{[\alpha:x]} \ldots [B_{[\alpha:y]} \ldots [\ldots C_{[\alpha:y]} \ldots]]]$ ✓
b. $[A_{[\alpha:x]} \ldots [B_{[\alpha:y]} \ldots [\ldots C_{[\alpha:\_\_]} \ldots]]]$ ✗

Thus, while A and C will be linked for α since they both bear this feature, such a link can never result in A valuing C since α is already valued on both. In other words, a node A can never value a node C for some feature α past some intervening node B in its c-command domain also bearing a valued feature α.

This is nothing other than a Relativized Minimality effect, but it is derived as a side-effect of the way in which LINK and COMPARE are interleaved. Relativized Minimality is not superimposed as an extrinsic constraint on possible links or hardwired into the definition of LINK (which is conceived as insatiable, as discussed above) – an attractive result.

However, Relativized Minimality effects are not expected to be absolute. We will see below that COMPARE doesn't result in feature-valuation in all cases. When B and C, in some link $Link_{\alpha}(B, C)$, are categorially distinct

[21]Note that this also means that links under sisterhood must be computed simultaneously, which seems fairly intuitive: else link-equivalence between them could not be established.

and are both unvalued for α, COMPARE returns them to LINK unchanged. If a node A bearing a valued feature α is subsequently merged higher in the tree, A will be linked with B and with C; each of these links will be shipped in turn to COMPARE resulting in feature valuation from A to B and from A to C. This essentially recreates the "probe-sharing" mechanism proposed in Pesetsky and Torrego (2007) whereby two probes bearing identical unvalued features are simultaneously valued by a common goal. That the current model can yield this result without added stipulations and simply as a side-effect of how LINK is interleaved with COMPARE is a welcome result.

7.1.3 Defining LINK

Factoring in these considerations, I define LINK in pseudo-code below:

(42)

Algorithm 1: The LINK algorithm

for *every feature α on some node A which has just been merged* **do**
 for *every node B in the search-space of A, ordered according to Minimality* **do**
  if *B bears α* **then**
   match (projection of) A with (projection of) B for α, create $Link_\alpha(A, B)$, & proceed to COMPARE
  else
   next B

LINK is articulated, consisting of a search operation followed by matching, resulting in a link for that matched feature (compare the Search, Match and Value sub-operations under Agree in Chomsky, 2001). For every node A bearing some feature α, the search algorithm sequentially inspects the relevant nodes $\langle B_1, B_2, \ldots B_n \rangle$, ordered according to closeness, in A's c-command domain, for the presence of α. If a match is found with some node B_k in this search domain, it proceeds to link A and B_k for α, yielding $Link_\alpha(A, B_k)$. This link is then shipped to COMPARE and the output of COMPARE is returned to LINK. At this stage, LINK then proceeds to inspect the next node B_{k+1} in the search domain for α and continues in this manner until all the nodes in the search domain have been exhausted.

7.2 How COMPARE works

The COMPARE algorithm essentially serves as a sub-routine on LINK, manipulating one link output at a time, and returning the output of such manipulation back to LINK.

7.2.1 Defining COMPARE

Where LINK only looks at featural attributes, COMPARE zooms in on the linked features, checking the nature of their values. Specifically, COMPARE examines the categories of the two nodes in a link and manipulates the values of the linked feature on nodes according to whether the categories are the same or different. This step thus algorithmically implements the CPC in (37)), repeated below:

(43) Category-Process Correlation in syntax (CPC):

a. Syntactic dissimilation typically obtains between categorially identical elements;
b. Syntactic assimilation typically obtains between categorial non-identical elements.

I now define COMPARE using pseudo-code as in (44):[22]

(44)

[22] I am assuming here that the categorial feature χ is also organized as an attribute-value pair with categorial value determining the so-called label of the head or phrase. But nothing crucial rests on this assumption and we could also treat categories as privative features as is more standard. In this case, COMPARE would check whether the category of A = the category of B. Note, too, that I am assuming that cases of AGREE may be "upward" or "downward", to borrow terminology from the Agree parlance, with featural values being copied from the c-commanding to the c-commanded node, or vice-versa – since this is, *ceteris paribus*, the null hypothesis.

Algorithm 2: The COMPARE algorithm

for *Some* $\text{LINK}_\alpha(A,B)$, *where* χ *is the categorial feature on* A/B *and* $\chi \neq \alpha$, **do**
    if α *is valued on both* A *and* B **then**
        return to LINK
    else
        if *value of* χ *on* A = *value of* χ *on* B **then**
            DISAGREE: force values for α to be distinct across A and B
        else
            AGREE: allow α-value to be copied from A to B or from B to A
    return to LINK

As mentioned earlier, COMPARE, unlike LINK, is feature-driven in the sense that it only manipulates unvalued features on linked objects. As under Agree, I assume that feature-valuedness on a node renders that node syntactically inert wrt. that feature, much like the full valency on a noble gas renders it chemically inert. As per (44), COMPARE first checks whether the feature α in $\text{LINK}_\alpha(A,B)$ is valued on both nodes. If it is, the link is returned untouched to the LINK algorithm. If α is unvalued on at least one of the linked elements, it proceeds to compare the categorial values on A and B. If these are the same, syntactic dissimilation is obligatorily triggered via the sub-operation DISAGREE which forces featural dissimilation by ensuring that the α bears a distinct value on A and B. If the categorial values on the elements are distinct, however, then assimilation is allowed via the operation AGREE.

Assume that A asymmetrically c-commands B and that χ is the categorial feature which can take distinct categorial values. Crossing the variable of α-(un)valuedness with that of categorial (non-)identity across A and B yields the six-cell table in (45::

(45) Distribution of AGREE & DISAGREE:

a. Input: $\text{LINK}_\alpha(A,B)$, category feature = χ, A c-commands B.

b. Possible outputs:

	$[\alpha : \_]$ on A	$[\alpha : \_]$ on B	$[\alpha : \_]$ on A & B
$\chi_A \neq \chi_B$	1a. AGREE	2a. AGREE	3a. AGREE
$\chi_A = \chi_B$	1b. DISAGREE	2b. DISAGREE	3b. DISAGREE

Scenarios 1a & 1b mimic the state-of-affairs under "downward Agree", where the featurally deficient element ("the probe") c-commands the featurally non-deficient counterpart ("the goal"). Scenarios 2a & 2b mirror the situation for "upward Agree" with the featurally non-deficient element c-commanding the featurally-deficient counterpart. The scenarios represented by 3a-3b recreate the probe-sharing scenario discussed in Pesetsky and Torrego (2007) where two or more probes which are deficient for the same set of features may be linked to jointly probe a common goal.

7.2.2 Possible outcomes for AGREE and DISAGREE

While the outcomes (AGREE vs. DISAGREE) themselves do not vary, the nature of each operation must vary according to whether α is unvalued on just A or just B or is unvalued on both. For instance, it is easy to implement AGREE in Scenarios 1a and 2a by copying the value for α from B to A and A to B , respectively, as under classic Agree. But it is clear that this cannot be straightforwardly extended to Scenario 3a, where α is unvalued on both A and B. In this case, a legitimate possibility is that AGREE does nothing, since the values for α are already trivially identical across A and B, thereby satisying the brief of syntactic assimilation that AGREE is set up to accomplish.[23] A different logical option is that one of the nodes gets a dummy value which is then copied onto the other node. We might imagine that the choice between these outcomes is parametrized across languages and potentially even across constructions.

Turning now to cases of DISAGREE, it makes sense to talk about syntactic dissimilation in Scenario 3b where α is unvalued on both linked nodes, making them featurally identical wrt. this property. Unlike in 3a, do-nothing is not an option because we need syntactic dissimilation, not assimilation, & do-nothing would yield the latter, not the former. I propose that in such cases, just one of the nodes – either the higher or the lower – is flagged with a dummy value, since flagging one node, rather than both, is the computationally minimal way to achieve featural dissimilation between them. In contrast to 3b, in scenarios 1b and 2b, the value of α is already distinguished across A and B since it is valued on one and not on the other. In such cases, I propose that a logical outcome is that DISAGREE does nothing since its

[23]Preminger (2014) argues that classic Agree is fallible – i.e. failure to Agree – concretely, failure to be feature-valued – is tolerated. This means that the presence of an unvalued syntactic feature at Spell-Out doesn't crash the derivation. We have already seen that AGREE and DISAGREE are fallible given that they may legitimately fail to apply to pre-valued features in a link. So it should come as no surprise that AGREE is able to leave unvalued features untouched, at least in some cases, in Scenario 3b.

brief of featural dissimilation is already satisfied. An alternative could be that a dummy value is inserted on the node with unvalued α which is crucially different from the value for α on the other. Table 46 summarizes these results. Note that I am collapsing the first and second columns from Table 45 in the table below, since the outcomes for these scenarios are essentially the same:

(46) Logical space of possible outcomes for AGREE & DISAGREE:

	$[\alpha : \_]$ on A or B (not both)	$[\alpha : \_]$ on A & B
$\chi_A \neq \chi_B$	1a/2a. AGREE=feature-valuation	3a. AGREE=do-nothing/dummy value to both
$\chi_A = \chi_B$	1b/2b. DISAGREE=do-nothing/dummy value to A or B	3b. DISAGREE= dummy-value to A or B

8 Running derivations

Let us now run the derivations for a classic case of syntactic assimilation, namely ϕ-agreement (instantiating Scenario 1a/2a), and syntactic dissimilation involving dependent case assignment (instantiating Scenario 3b) in Table (46) above.

8.1 ϕ-agreement (Scenario 1a/2a)

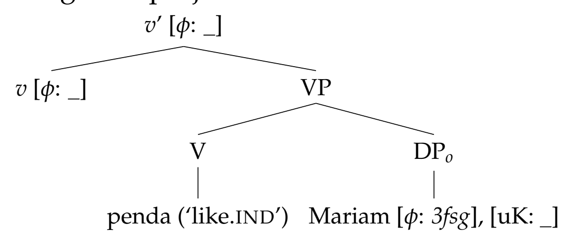
Let us first see how ϕ-agreement can be derived under RELATE, using (47) from Swahili (Niger-Congo, parts of East Africa) as a case-study:

(47) Juma a-na-m-penda Mariam.
Juma SA_{3sg}-PRES-OA_{3sg}-LIKE.IND Mariam
'Juma saw Mariam.' (ud Deen, 2006, Ex. 9, 231)

Swahili is an SVO language and shows both subject and object agreement. I assume, as is standard in Minimalism, that in languages with only subject agreement, like English, only T bears unvalued ϕ-features. In contrast, I assume that in languages like Swahili which show both subject and object agreement, both T and v bear unvalued ϕ-features, with that subject and object DPs bearing valued ϕ-features. A LINK between (some projection of) T and DP (or v and DP), i.e. $Link_\phi$(T, DP) or $Link_\phi$(v, DP), thus instantiates Scenario 1a/2a in (46): the two linked elements are categorially distinct and the linked feature, ϕ, is valued on one and unvalued on the other. The expected outcome is thus AGREE, yielding syntactic assimilation via feature valuation from DP to T/v.

At the point that v, bearing [ϕ: _], is merged in the structure, the tree will look like in (48).

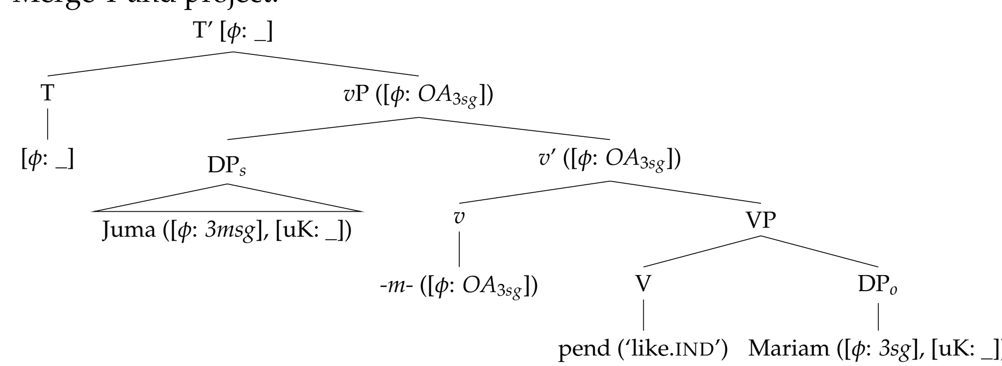
(48) Merge *v* & project:



As soon as *v* is merged, the LINK algorithm is initiated for this feature, and searches its c-command domain in order of closeness for nodes also bearing [ϕ]. LINK first searches VP. This bears no ϕ-features, so LINK keeps searching until it lands on DP_o which bears [ϕ: *3sg*]. This creates $Link_\phi(v, DP_o)$ which is immediately shipped to COMPARE. COMPARE determines first that ϕ is not valued on both *v* and DP_o and then inspects the categories of these elements. It establishes that these are non-identical which triggers AGREE. Given that ϕ is unvalued on just one of the linked elements, namely *v*, this triggers feature-valuation of ϕ from DP_o to *v*. The result is a syntactically assimilatory configuration where both DP_o and *v* bear [ϕ: *3sg*] which is eventually spelled out as object agreement infix *-m-*. This output is returned to LINK for [ϕ] on *v*, which keeps searching the rest of the tree, establishes that there are no other nodes that bear [ϕ] and exits the derivation.

We now keep building the tree bottom-up and reach the point where T, also bearing [ϕ: _], is merged in the structure. At this point in the derivation, the tree looks like this:

(49) Merge T and project:



As soon as T is merged with [ϕ: _], LINK is initiated for this feature, and searches the c-command domain of T for nodes with matching [ϕ], again in order of closeness. It should be immediately apparent that this leads to a problem. The LINK algorithm will first establish a link between T and vP first, yielding $Link_{\phi}$(T, vP), which will be shipped to COMPARE. Assuming that these elements are treated as being categorially distinct this will, in turn, trigger AGREE, yielding feature-valuation of T by vP. The result is that T will end up bearing [ϕ: *3sg*], which is the equivalent of saying, by transitivity, that T shows object agreement.

This is clearly the wrong empirical result and it stems directly from our assumption of a bare phrase structure whereby object agreement (OA) [ϕ: *3sg*] on v is equivalent to [ϕ: *3sg*] on v' and vP. The first point to note here is that this is a problem for (nearly) *every* model of ϕ-agreement under Agree, under bare phrase structure – though it is not explicitly noted as such in the literature, as far as I know. Several solutions suggest themselves. We could assume that DP_s and vP are equidistant from T – but this seems too weak given that it would predict that T could show *either* object or subject agreement when we only want the latter. We could suggest that features percolate from a head up to the point where there isn't a potential feature conflict. This would ensure that [ϕ: *3fsg*] projects up to v' from v; at that point, further percolation is halted by the fact that DP_s bears conflicting ϕ-features. This is both stipulative and undermines the idea of a bare phrase structure (not to mention, it would yield the wrong empirical results in cases where the ϕ-features on DP_s are *not* conflicting in value). Finally, we could abandon the idea of a bare phrase structure altogether.

The solution I propose is different from these and stems from a natural extension of the current model. I propose that the fact that T doesn't show object agreement suggests that T and vP don't actually count as categorially distinct for the purposes of COMPARE.[24] This is a fairly natural assumption to make, given that T and v belong to the same extended projection. This implies that what matters for the CPC (and ultimately for OCP_{Gen}) is not categorially identity but categorial non-distinctness. Let us assume that this is indeed the case. COMPARE thus establishes that T and vP are categorially non-distinct $Link_{\phi}$(T, vP). This triggers DISAGREE. ϕ is valued on vP but unvalued on T. This instantiates Scenario 1b/2b in (46) whereby DISAGREE does nothing, since the two elements are already distinguished by virtue of bearing distinct values for ϕ. This (unchanged) output is now returned to LINK.

LINK next hits DP_s which does bear ϕ, triggering $Link_{\phi}$(T, DP_s). This

[24]Of course, T has been reported to show object agreement in some languages (e.g. in Hindi (Bhatt, 2005) or Standard Gujarati (Murugesan, 2020)). To accommodate such cases, we must either assume that v does not bear unvalued ϕ-features to begin with, or that the condition that T and v are categorially non-distinct is crosslinguistically parametrized.

is input to COMPARE which establishes that these nodes differ wrt. their relevant categorial features. This triggers AGREE, allowing the subject ϕ-value of *3smg* to be replicated across the nodes. COMPARE then returns to LINK for ϕ on T which continues probing its search domain until it hits DP_o, yielding $Link_{\phi}$(T′, DP_o). This is fed to COMPARE which establishes that ϕ is valued on both T and DP_o, and thus returns them unchanged to the LINK algorithm. We can see how interleaving COMPARE with LINK yields Relativized Minimality, just as desired. Concretely, the system ensures that we will never get object agreement on T in Swahili because T will have already been valued by the subject in a a previous instance of COMPARE, by the time it links to the object. LINK exits at this point since it has exhausted its search space. The output is a syntactically assimilatory configuration where ϕ-features are replicated on T and DP_s, on the one hand, and on v and DP_o, on the other.

Of course, matters are much simpler in a language like English, which has only subject agreement. In such languages, I assume that v simply does not bear unvalued ϕ-features. The only agreement ensues due to a link between T, which does bear unvalued ϕ-features just as in Swahili, and DP_s. This proceeds essentially in the manner outlined above, yielding subject agreement on T.

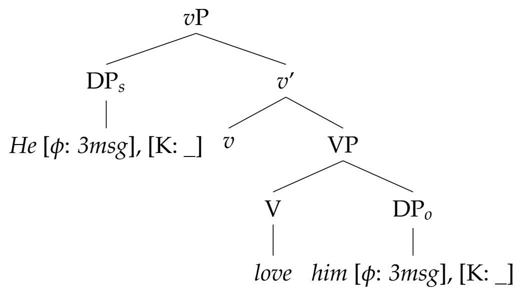
8.2 Dependent case (Scenario 3b)

Dependent case in syntax instantiates Scenario 3a: it results from a syntactic link between two categorially identical elements, e.g. two DPs, which both bear, under assumption, unvalued case-features. This triggers DISAGREE under COMPARE, resulting in a dummy value being added to one of the linked elements.

8.2.1 Deriving NOM-ACC and ERG-ABS

I assume that DP_s and DP_o bear unvalued case features, [K: _]. Consider again our toy sentence from (47) at the point where DP_s has been merged, and the result projected:

(50) Merge DP_s and project:



DP$_s$ bears both [ϕ: *3msg*] and [K: _]. LINK initiates a search for matching features for both in the c-command domain of DP$_s$, in order of closeness. For ϕ-features, this will output the following links: *Link*$_\phi$(DP$_s$, v') and *Link*$_\phi$(DP$_s$, DP$_o$). Each of these will be sent off to COMPARE which will, however, return them unchanged to the LINK algorithm since [ϕ] is valued on all node-pairs in the respective links.

The search algorithm for case on DP$_s$ will culminate in only one link, namely with the only other element in the search space which also bears [K], namely DP$_o$. This yields *Link*$_K$(DP$_s$, DP$_o$) which will be sent to COMPARE. COMPARE first establishes that it is not the case that [K] is valued on both nodes. Then, it examines their respective categories and determines that these are identical. This in turn triggers DISAGREE. [K] is unvalued on both DPs, thus DISAGREE distinguishes them in the most economical way possible, which is to add a dummy value to just one of them. The choice between whether DP$_s$ is assigned the dummy value, or DP$_o$ is, is, I suggest, parametrized. In a language like English, DP$_o$ gets the dummy value – which is essentially a value that says "I am flagging the fact that there is another DP which locally c-commands me me and that I need to be minimally distinguished from it". This is, in other words, precisely a *dependent* case value, call it "*dep*". This result is now looped back to the LINK algorithm which establishes that there are no other nodes in the tree bearing [K] and exits the derivation.

At Spell-Out, [K: *dep*] on DP$_o$ is spelled out as "accusative". In other words, the term "accusative" is nothing other than a label for a dependent case value, precisely as intended under the dependent case approach. [K: _] on DP$_s$ is, in turn, spelled out as "nominative". This is, quite literally, an unmarked case without a value. I.e. "nominative" is nothing other than a label for the genuine absence of case on a nominal, a result which conforms to empirical arguments made to this effect in Sundaresan and McFadden (2011) and later work by Preminger. In an ERG-ABS language, the dummy "*dep*" value for [K] is assigned to DP$_s$. In this case, the presence of *dep* flags the fact that DP_s is minimally distinguished from another DP which it locally c-commands. DP_o is (again, literally) left with unmarked case, [K: _]. [K: *dep*] on DP_s is spelled out as "ergative", this being merely a label for a dependent case value on a subject; [K: _] is spelled out as "absolutive", this being merely the label for unmarked case on an object.

The current proposal thus derives dependent case effects in syntax in exactly the right configurations, just as desired. By the time T is merged, yielding the structure in (49) above, DP_s and DP_o will both already bear valued case; ϕ-agreement for DP_s can thus be case-discriminating, just as predicted under the Revised Moracsik Hierarchy in Bobaljik (2008).[25] As mentioned above, the current model implements the idea (Sundaresan and McFadden, 2011) that unmarked case is really the absence of case: DPs with unmarked case, in this system, lack a case value altogether. It also replicates the proposed solutions in Preminger (2014) and Poole (2022) without invoking a special operation just for dependent case effects. Note, finally, that since COMPARE involves distinctness at the *featural* level, we don't necessarily expect this to yield distinct exponence of these features. Thus, the model can still capture case syncretisms (instances where the features are underlyingly distinct but are exponed identically) (Caha, 2009).

8.2.2 Deriving DAT-NOM

Consider now the DAT-NOM construction in (51) from Icelandic below:

(51) Strákarnir likar/*lika bókin.
boy.PL.DEF.DAT like.3SG/*3PL book.DEF.NOM
'The boys like the book.' (Sigurðsson, 1991)

(51) involves a "quirky" dative subject, *strákarnir* ('the boys.DAT), with a nominative object, *bókin* ('the book'). The ϕ-agreement on the verb is with the nominative object[26], and not a case of default agreement. We can see this clearly in a sentence with a 3PL object as in (52):

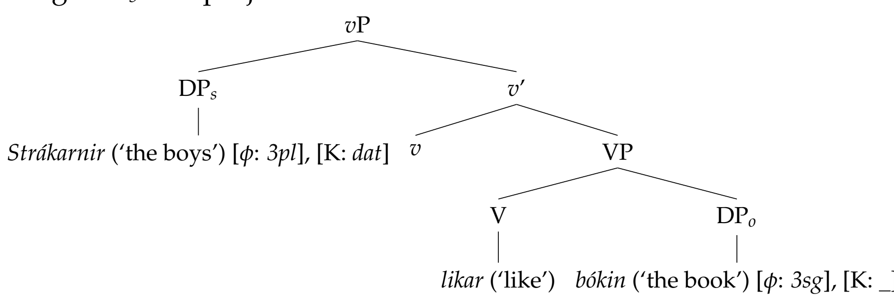
[25]But we predict that *object* agreement between v and DP_o should not be case-discriminating since DP_o will not yet bear a case value given that DP_s will not yet have been merged. This prediction is not specific to this model but is expected to apply equally to all syntactic analyses that derive both dependent case and ϕ-agreement in syntax and obey some version of the Strict Cycle Condition. Poole (To Appear, fn. 10) discusses precisely this problem, noting that such a system predicts, contra Bobaljik, that we should get languages with NOM-ACC case and ERG-ABS agreement alignment. Whether such a language is actually attested remains to be seen.

[26]To be more precise, the number agreement on the verb is due to the nominative object; person agreement with the object is ruled out in this configuration (see e.g. Sigurðsson, 2004, Exx. 31a-c, 148).

(52) Henni $\boxed{\text{höfdu}}$ ekki likað $\boxed{\text{hestrarnir}}$.
her.DAT had.3PL not liked horses.the.NOM
'She had not liked the horses.' (Sigurðsson, 2004, Ex. 29a, 147)

Let us now see how the DAT-NOM case configuration in (51) would be derived under RELATE. (51) has the structure in (53) at the point that the subject is merged:

(53) Merge DP_s and project:



I assume, first, that inherent case is assigned differently, outside of the dependent case system. However this is achieved (presumably due to the lexical-thematic properties of the main verb), DP_s comes to bear bears dative case before LINK for DP_s initiates. The LINK algorithm searches, in order of closeness, for matching [ϕ] and [K] features in the c-command domain of DP_s. The only element which also bears a [K] feature is the object DP. This yields $Link_K(DP_s, DP_o)$ which is shipped to COMPARE. COMPARE, having first established that [K] is not valued on both nodes, determines that the nodes are categorially non-distinct. This triggers DISAGREE. [K] is valued on DP_s and unvalued on DP_o. Given that the two nodes are already distinguished by virtue of bearing distinct values for [K], DISAGREE leaves the nodes unchanged (the "do nothing" outcome in Scenario 1b/2b in (46)). The output of COMPARE is returned to LINK, which establishes that it has exhausted the search space and exits the derivation. At PF, [K: __] on DP_o is spelled out as unmarked "nominative" case.

How do we ensure that T shows number-agreement with the object and not the subject? I assume that T bears unvalued [ϕ: __] features. At the point that T is merged, DP_o will have already been returned to LINK from COMPARE with unvalued [K: __] features. This allows ϕ-agreement to be fed by the case properties of the subject and object, just as desired. I assume that the number-features on T alone are case-discriminating in Icelandic. The search algorithm under LINK for T thus searches specifically for a DP with unmarked case. This immediately eliminates the dative subject from consideration. The next closest candidate is DP_o which does bear unmarked case. Number-agreement on T thus ensues with DP_o along the lines outlined for ϕ-agreement for Swahili above: i.e. due to AGREE yielding feature-valuation triggered under COMPARE.

8.2.3 Deriving DAT-ACC

Languages like Tamil and Faroese also allow a DAT-ACC case distribution in clauses, as in (54) and (55) below:

(54) En-akkŭ avaḷ-æ piḍik-kir-adŭ.
1SG-DAT she-ACC like-PRS-3NSG
'I like her.' (personal elicitation)

(55) Mær dám-ar føroyskan tónleik.
1SG.DAT like-3SG Faroese.ACC music.ACC
'I like Faroese music.' (Jónsson, 2009, Ex. 1a, 142)

The 3NSG agreement on the verb in both cases doesn't reflect the ϕ-features of the subject or object – i.e. it is default agreement. If we again assume that the T head is case discriminating and only seeks to be linked with nominals bearing unmarked case, we derive default agreement by virtue of the fact that no DPs in the clause qualify. We have seen that LINK is fallible: default agreement reflects the idea that the unvalued ϕ-features on T remain unvalued at the point of spell-out.

How do we derive the DAT-ACC case distribution? For Baker (2015), this is due to a parametrized rule of accusative case assignment in such languages. This rule says: "Assign accusative case to a DP just in case there is another DP in its case domain which c-commands it." In contrast, a language which allows DAT-NOM constructions, like Icelandic, has an accusative rule that says: "Assign accusative case to a DP just in case it is c-commanded by another DP *which bears no case*". In other words, accusative case is assigned in Tamil and Faroese as long as there is another locally c-commanding DP, regardless of what case this higher DP bears; however, a language like Icelandic assigns accusative case to the lower of two local DPs, just in case the higher one doesn't bear case. Such a solution thus places a heavy burden on the role of parametrization in deriving case distinctions. It is, further, unclear what independent properties of these languages, if any, condition the choice between these parameters.

The solution I propose naturally falls out of the list of possible outcomes given in Table (46). I assume, as I did for Icelandic quirky case above, that DP_s is lexically assigned DAT case immediately upon external Merge and feeds the LINK operation that then ensues for [K] and [ϕ] on DP_s. This yields $Link_K(DP_s, DP_o)$ which is sent to COMPARE. COMPARE, having established that [K] is not valued on both nodes, determines that the two nodes are categorially identical. This triggers DISAGREE. So far, the derivation has run entirely parallel to that for the Icelandic DAT-NOM construction in (51).

At this point, the derivation has run entirely parallel to that described for Icelandic above, but I propose that they diverge at this juncture. Concretely, where DISAGREE followed the "do-nothing" option for Icelandic, leaving the case-linked node-pairs unchanged, I propose that Tamil and Faroese follow the "insert dummy value" option for the (hitherto) caseless DP. This dummy value is, like the dummy value on a lower DP in a DAT-ACC configuration, a dependent value: it says "Give me a value that minimally distinguishes me from the local DP c-commanding me."[27] COMPARE returns this updated node-pair with DP_s bearing [K:*dat*] and DP_o bearing [K: *dep*] back to LINK; LINK establishes that there are no other nodes in the c-command domain of DP_s and exits the derivation. At spell-out, DP_s is exponed as dative case and DP_o as dependent accusative case.

Note that the current system also makes use of crosslinguistic parametrization to derive the distinction between DAT-NOM and DAT-ACC. This parametrization is specifically rooted in the choice of outcome under DISAGREE. However, the possible choices of outcome made available to a language are not arbitrary. Assuming that a feature that is already on a node cannot be deleted, there are precisely two possible ways in which two nodes which are linked for some feature α, where α is valued on one and unvalued on the other, may be distinguished for that feature. The grammar may decide that the lack of a value on one of the nodes is itself a kind of value, and determines that it needs to do nothing more to distinguish the values for α across the nodes, because they are already so distinguished. Alternatively, the grammar may decide that the lack of a value is not a value per se, and that the α-unvalued node needs an actually value in order to be distinguished from the α-valued one. My proposal is simply that, when it comes to dependent case, Icelandic chooses the former and Faroese and

[27] The notion of minimal distinction is not trivial. The crosslinguistically robust case syncretisms discussed in Caha (2009) show convincingly that "accusative" is the label for a case that is structurally closest to unmarked nominative case. All other non-nominative cases are larger.

Tamil choose the latter.[28]

That the current system not only allows us to derive DAT-NOM and DAT-ACC case-configurations but also predicts such patterns to exist given the set-space of logical possibilities under DISAGREE lends it, I believe, a distinct advantage.

9 Fulfilled empirical predictions

The current proposal makes a number of empirical predictions which are fulfilled, as I discuss below.

9.1 Local anaphora (Scenario 1b/2b)

Dependent case effects in syntax satisfy OCP_{Gen} at PF (see also discussion in Baker, 2015, a.o.), the standard consensus being that (non-lexical) case has no LF reflexes (McFadden, 2004). This is no issue for distinctness proposals like that in Richards (2010), whose generalized OCP constraint functions as a filter on pre-linearized structures at PF. However, the current proposal implements the CPC under AGREE and DISAGREE in COMPARE, as a way to satisfy OCP_{Gen} which is assumed to be an interface constraint on ultimate syntactic representations at spell-out. Under the Y-model of grammar (8), this entails that there should, at least in principle, be cases of syntactic dissimilation which show reflexes at both LF and PF.

Below, I argue that this prediction is met for a sub-class of local anaphora across languages. Consider the local reflexive construction below:

(56) $\boxed{\text{Leela}_i}$ admired $\boxed{\text{herself}_{\{i,*j\}}}$.

[28]It is important to note here that Tamil also allows DAT-NOM constructions as in (i):

i. Leela-vŭkkŭ $\boxed{\text{na:ŋ-gaḷ}}$ teri-nʤ-$\boxed{\text{o:m}}$.
Leela-DAT 1-PL.NOM appear-PST-1PL
'Leela got sleepy.'

The verb shows ϕ-agreement with the nominative object but, unlike in Icelandic, such agreement can be for all ϕ-features. Baker (2015) argues that DAT-NOM constructions in Tamil are different from those in Icelandic because the dative nominal is an adjunct. If this is correct, we can maintain that the choice of possible outcomes under DISAGREE is parametrized across languages. But if these are, in fact, genuine DAT-NOM constructions, as in Icelandic, we would need to revise our proposal to suggest that this choice may be construction-specific, within a particular language. I leave further discussion of this point to subsequent research.

Cases of local anaphora as in (56) have been argued to involve a syntactic dependency between two nominals that stand in a local c-command relationship for some feature relevant to nominal reference, e.g. a ϕ-feature (Reuland, 2011; Rooryck and vanden Wyngaerd, 2011, a.o.) or a referential [ID] feature (Hicks, 2009; Raynaud, 2020). Under Agree, the antecedent (goal) bears a valued ϕ or ID feature, while the anaphor (probe) bears its unvalued equivalent. Feature-valuation between probe & goal yields a structure where the antecedent and anaphor bear identical features – i.e. a structure that shows syntactic assimilation. This structure is then fed to LF, triggering binding of *herself* by *Leela*.

This runs counter to the expectations set up by the CPC. Under the current model, a syntactic link between two categorially identical elements, as *Leela* and *herself* seem to be, should yield syntactic dissimilation, implemented by DISAGREE, not syntactic assimilation, triggered by AGREE. But a closer look at local anaphora crosslinguistically shows that local anaphora does in fact involve DISAGREE, not AGREE, just as predicted under the CPC.

9.1.1 Evidence for syntactic dissimilation in local anaphora

Support for the idea that local anaphora is syntactically dissimilatory comes from both PF and LF. Lidz (1997, 2001) argues that anaphors crosslinguistically are bifurcated into bound pro-forms which are restricted to a "pure-reflexive" interpretation and those that yield a "near-reflexive" interpretation, formalized below:

(57) $\lambda x[P(x, x)]$ (pure reflexivity)

(58) $\lambda x[P(x, fx)]$ (near reflexivity)

Per Lidz (2001) all reflexives that have the additional reflexive marking (self or other body-part) are compatible with a near-reflexive reading. In contrast, inherently reflexive predicates (as with e.g. 'behave' or 'shave') or predicates with dedicated reflexive morphology only allow pure-reflexivity.[29]

[29] The contrast between these readings can be nicely illustrated as follows. Consider a situation where Ringo Starr goes to the Madame Tussaud museum & wants to shave his own statue. This near-reflexive relationship is only possible with the complex anaphor, not its simplex counterpart (cf. Dutch (i)):

i. Ringo$_i$ scheert zich-zelf$_i$/*zich$_i$.
Ringo shaved him-self/*ANAPH
'Ringo shaved himself.'
Intended: ≈ Ringo shaved Ringo's statue.

Reuland (2001, 2011) explains this as follows (note again the parallels to the proposal made here). At LF, a Principle of Recoverability of Deletion/PRD filters out syntactic outputs with fully identical binder-bindee pairs. This is because, under the PRD, the information that is lost on one token can be readily retrieved on the other: i.e. deletion is allowed just in case it is retrievable elsewhere. The problem is that such deletion leads to semantic illformedness. Specifically, the predicate is associated with only one argument (the other having been deleted) when in fact, being transitive, it requires two – there is, in other words, an arity problem. Under these conditions, per Reuland, near-reflexivity is the only parseable LF-input.[30]

These insights are empirically corroborated by Middleton (2020), surveying morphological syncretism patterns for local anaphors, non-local anaphors ("diaphors") and free-standing pronous in 80 languages spanning 12 language families and 1 isolate. In some languages, local anaphors, diaphors and pronouns all bear the same form (Pattern AAA). In others, anaphors and diaphors alone are syncretic (Pattern AAB). Yet other languages show syncretism for diaphors and pronouns to the exclusion of anaphors (Pattern ABB). And at the other end of the spectrum, we have languages which show no syncretism at all (Pattern: ABC). What is crucially absent in this typology is the fifth logical option, namely Pattern ABA, where anaphors and pronouns are syncretic to the exclusion of diaphors. On the strength of this "*ABA effect" (Caha, 2009; Bobaljik, 2012), Middleton proposes that locally bound anaphors, diaphors and pronouns stand in a structural containment relationship with one another. Concretely, locally bound anaphors encode syntactic structure which properly contains that of non-locally bound ones ("diaphors") which, in turn, contains the syntactic structure corresponding to a free-standing pronoun.

These findings allow us to make sense of an observation by Faltz (1977) based on a survey of 140 or so languages, namely that, crosslinguistically, local reflexives tend to be morphologically complex, comprising a pronominal variable + a body-part morpheme like 'self' or 'head', as in (59).

(59) Susan$_i$ loves her-self$_i$.

[30]To quote Reuland (2001, pp. 481-482): "The core of the issue is that the linguistic system must overcome the following conflict: on the one hand, the reflexivity of the predicate cannot be represented either in the syntax or at the interface without a violation of arity, and on the other, it must be possible to obtain interpretations with precisely this property. There is only one way for the system to meet both requirements: the interpretation of the second argument, f(x), must approximate that of the first argument, x, without being formally indistinguishable from it. This approximation must be close enough to x to be "useful". In other words, $[\![f(x)]\!]$ must be able to stand proxy for $[\![x]\!]$ wherever necessary."

Local reflexivity is typically impossible in the absence of such a morpheme, yielding Condition B effects:

(60) * Susan$_i$ loves her$_i$.

There are, of course, exceptions in either direction. Morphologically simplex reflexives in some languages can be locally bound, e.g in Chinese (61) (see Huang and Tang, 1991). Conversely, some morphologically complex reflexives may be non-locally bound, as shown for English in (62) (see Pollard and Sag, 1992; Reinhart and Reuland, 1993, for discussion):

(61) Zhangsan$_i$ renwei [Lisi$_j$ hai-le ziji$_{\{i,j\}}$]
Zhangsan think Lisi hurt-ASP self
'Zhangsan$_i$ thought that Lisi$_j$ hurt himself$_{\{i,j\}}$.'

(62) Leela$_i$ was worried [that the slanderous article about herself$_{\{i,*j\}}$ might turn away potential customers].

But these tend to be the exceptions, not the norm.

Middleton's findings allow us to make sense of these patterns, as well as the systematic exceptions to these patterns above. A locally bound reflexive, encoding the largest structure, is the most likely to be morphologically complex, compared to a diaphor or pronoun. At the same time, there is no expectation that the additional structure on a local reflexive always be morphologically realized. In a language like Chinese, we must assume that the additional structure simply doesn't have a morphological reflex, yielding the identical surface form *ziji* for both the local and non-local reflexive. The proposal also gives us a way to understand the semantic properties of anaphora. Under Middleton's structural containment model, the structure of a local anaphor contains that of a non-local one; thus, the former should have access to a superset of the interpretations (i.e. both near-reflexive and refexive interpretations) available to the latter.

9.1.2 Deriving local anaphora under RELATE

Under RELATE, these dissimilatory effects follow straightforwardly. Consider the case of a locally bound anaphor which lacks a body-part morpheme – i.e. a morphologically simplex anaphor. LINK first links the antecedent DP to the anaphoric DP for some feature α (e.g. ϕ-features). This triggers COMPARE which establishes that the DPs are not both valued for α and then determines that they are categorially identical. This in turn triggers DISAGREE which follows the "do-nothing" option, since the two DPs are already distinguished by virtue of the antecedent being valued for α

and the anaphor being unvalued for it. It is plausible that this then triggers binding at LF, yielding a reading of pure reflexivity.

Consider now the case of a locally bound anaphor with a body-part morpheme, as in (59). Assume now that the addition of a body-part morpheme to the anaphoric DP encapsulates it inside a larger structure (as proposed in Middleton, 2020, and adapted in Preminger, 2019) – much like a KP/PP shell above DP. When the DP binder is α-linked with this new complex anaphor, call it AnaphP, COMPARE now establishes that the two elements are, in fact, categorially distinguishable. This in turn triggers AGREE, allowing α-values to be replicated across the nominals. At LF, the additional body-part structure on the anaphor makes it compatible with a near reflexive reading while also allowing a pure reflexive reading (assuming the additional body-part morpheme serves as an identity function).

There are thus two routes to local reflexivity. There is a purely semantic route whereby reflexivity is established as variable binding at LF on a syntactic representation where the antecedent has a valued feature and the anaphor an unvalued one – this can only yield pure reflexivity. The other route is a syntactic + semantic one whereby reflexivity is first encoded in terms of feature-matching under Agree between two categorially distinct nominals, which then yields near-reflexivity at LF. These two possible outputs correlate by and large with the morphological properties of the anaphors. Anaphors lacking a body-part morpheme tend to be morphologically simplex while those bearing such a morpheme tend to be morphologically complex. But given morphological syncretism, there are of course exceptions: an anaphor with an added body-part morpheme may be spelled out the same as its counterpart without such a morpheme (e.g. *ziji* in Chinese).

In languages like Frisian (and Old English), local anaphora is possible in the absence of a bodypart morpheme: e.g. the equivalent of a sentence like "He$_i$ loves him$_i$" is grammatical in these languages. Languages like Chinese also allow monomorphemic local reflexives & others like Thai (Heinat, 2008) lack dedicated reflexive forms altogether. But here again, we should remember that COMPARE only requires distinctness at the underlying *featural* level. We thus treat these as cases of anaphor/pronoun syncretism: both continue to be distinguished featurally even if they are exponed identically.

9.2 Syntactic dissimilation should be exceptional

The current model also correctly predicts that cases of syntactic dissimilation should be relatively uncommon and that cases of syntactic assimilation should be the norm. Under RELATE, this asymmetry is directly implemented by having DISAGREE apply only under a specific set of conditions and by having AGREE apply in all other cases, i.e. in the Elsewhere scenario. But this itself has a deeper explanation having to do with the way in which the CPC (implemented by the choice of DISAGREE vs. AGREE) interacts with structural and categorial conditions of clausal wellformedness.

First, it is standard to assume that a category is unique within a minimal extended projection. For instance, a nominal extended projection has precisely one instantiation of N, and one of D; a verbal extended projection has precisely one instantiation of V, and one each of *v*, T, and C. The clausal spine involves the verbal extended projection, starting with the verbal root and its satellite projections of ordered functional heads (Adger, 2003). The verb is also associated with one or more nominal arguments which denote participants in the verbal eventuality.

Taken together, this means that a minimal phase like *v*P, involves a single verbal extended projection and one or more nominal extended projections. Let us now further assume a version of the Phase Impenetrability Condition (PIC, Chomsky, 2001) to underlie all syntactic relationships. This means that two grammatical objects in distinct phases can only communicate via the phasal edge (the phase edge and specifier and any peripheral adjuncts). Given what we've just said, non-nominals typically belong to distinct phases, thus can only compete for categorial distinctness with another only via a phase edge. Taken together, this immediately entails that if two nodes in a local phase bear the same category, such nodes are most likely nominal.[31] This implies that it is not an accident that qboth cases of syntactic dissimilation discussed in this paper – namely dependent case and local anaphora – involve xnominals.

At the same time, we don't expect cases of syntactic dissimilation involving non-nominals to be impossible. We have said that, *within* a given phase, a non-nominal category tends to be unique (i.e. is not instantiated on multiple nodes). However, this condition is obviated in a highly specific range of cases involving the recursion of a particular type of extended projection within a minimal phase. This is precisely what happens in *complex predicate* structures involving lexical restructuring (Wurmbrand, 2004). In

[31]One might wonder about the status of non-nominal adjuncts, e.g. adjectives or adverbs which can, of course, occur phase-locally. However, precisely because these are adjuncts, we don't expect them to be visible to one another for the purposes of LINK. And, indeed, the existence of case and agreement concord across serial adjectives suggests that such elements don't need to be distinguished for such features despite their categorial identity, i.e. that such elements don't count for the purposes of the CPC.

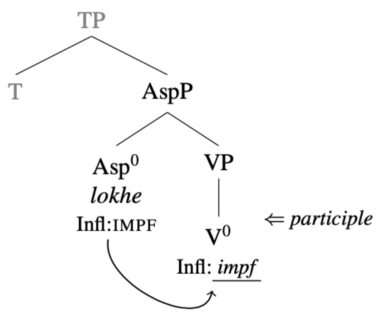
such cases, the restructuring light verb heads its own verbal extended projection which is, furthermore, phase local to the extended projection of the main verb. Such a configuration thus involves more than one local instance of the same verbal category – e.g. two Vs and potentially two *v*s, two Asps and so on – which should then yield distinctness effects under DISAGREE when they are linked for some common feature. In other words, we predict cases of syntactic dissimilation analogous to dependent case and local anaphora, but across like verbal categories.

This empirical prediction is fulfilled in Ndebele (Bantu, Zimbabwe, Pietraszko, 2018b,a). Ndebele has two distinct classes of light verb (LV): a PART-selecting LV that takes a participial complement and a SUBJ-selecting LV that takes a subjunctive one. Pietraszko argues, based on a range of empirical diagnostics (e.g. ordering restrictions and position of negation) that the two have systematically distinct syntactic properties. PART-selecting LVs are functionally restructuring in the sense of Wurmbrand, merely building on the extended projection of the main verb. SUBJ-selecting LVs, in contrast, involve lexically restructuring verbs that head their own verbal extended projection, as described above. Pietraszko further assumes (following Adger, 2003; Wurmbrand, 2011) that heads in a verbal extended projection bear inflectional features, with a lexical head bearing unvalued [INFL:_] which is subsequently valued by a higher functional head in that extended projection, and functional heads bearing valued [INFL].

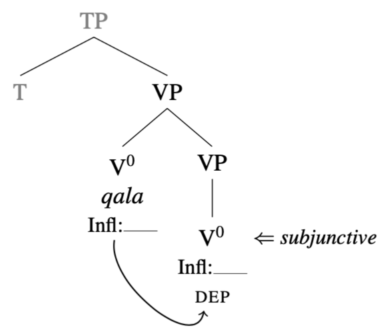
This yields the following syntactic distinction across LV-classes. A functional LV, by virtue of bearing a valued [INFL] feature, serves to value the unvalued [INFL: _] feature of the main verb in its complement, which is interpreted as participial agreement. In contrast, a lexical LV, by virtue of itself bearing unvalued [INFL: _] cannot thus value the [INFL: _] of the main verb in its complement. In such cases, Pietraszko proposes, "the higher unvalued feature [on the lexical LV] assigns a dependency feature, DEP, to the lower head which it failed to value (30). I call this relation *dependent valuation* (31)" (Pietraszko, 2018a, 318).

(63) Direct vs. dependent valuation in Ndebele (Pietraszko, 2018a, 318):

(29) Functional LV: *direct valuation*



(30) Lexical LV: *dependent valuation*



(31) ***Dependent valuation***

a. Structural description: α[F: ___] c-commands β[F: ___]

b. Structural change: $\beta \longrightarrow \beta$[F: ___, DEP]

Dependent valuation in lexical-LVs in Ndebele is, thus, nothing other than the verbal equivalent of dependent case, or local anaphora.

As should be clear by now, these results are not only derivable but are also correctly predicted to obtain under the proposed model of RELATE. In fact, Pietraszko's rule for dependent valuation is generalizable across all categories. Under the current system, dependent valuation is expected to result whenever two categorially identical nodes *A* and *B* which stand in a local c-command relation are both linked for some feature α which is unvalued on both *A* and *B*.[32]

9.3 CPC may licitly fail under syntactic invisibility

We have implemented the idea that syntactic relationships must be local by proposing that two syntactic objects *A* and *B* can only be linked if they are syntactically visible to one another i.e. are phase-local and stand in a minimal c-command relation to one another. Furthermore, if two syntactic objects can be linked for some feature, they *must* be linked for it. This entails, then, that two elements which share the same feature but remain unlinked must necessarily not be syntactically visible to one another by virtue of violating one or more of the structural wellformedness conditions listed

[32] It is, further, unsurprising that dependent valuation on the main verb in Ndebele is interpreted as the subjunctive given that this is, in many languages, a kind of *obviative* mood, thus implies a comparison with the indicative. It is, indeed, plausible that obviative mood systems generally instantiate syntactic dissimilation between two non-distinct verbal categories in a local domain, e.g. two C heads. This is, of course, purely speculative for now and is a matter for future research.

above.[33] Since such elements will never be linked to one another in such cases, they will also never be manipulated by COMPARE, which implements the CPC. As such, as predict that two categorially identical elements *A* and *B* may be featurally indistinguishable from one another just in case they remain unlinked by virtue of being syntactically invisible to one another.

This prediction, too, is fulfilled. Long-distance (or non-local) anaphors and logophors tend to be morphologically simplex, without the additional body-part morpheme – a result also corroborated by the findings in Middleton (2020) as we have seen – and are incompatible with readings of near-reflexivity (Reinhart and Reuland, 1993; Reuland, 2011). Analogously, two DPs may bear the same case value just in case they belong to distinct local domains. That this is not an accidental correlation is convincingly argued in Baker and Vinokurova (2010), who show that dependent case assignment in Sakha is directly fed by DP-movement into a local case domain containing another DP. Finally, returning to the case of predicate-nominals and small clauses in (35)-(36), it is noteworthy that a prominent alternative analysis of case-matching in such cases involves the idea that the relevant nominals are not local to one another (den Dikken, 2007) – this being precisely the configuration that licenses case identity across such nominals.

9.4 CPC shouldn't affect LF and PF

Finally, note that, under RELATE, the CPC is implemented in the narrow syntax, by manipulating the value of a feature linking two nodes in different ways based on whether the categories of the linked nodes are non-distinct or distinct. While the choice of how a feature on a node is valued *can* affect how it will be exponed at PF or interpreted at LF – it is, by no means, entailed that it should.

We predict, therefore, that there should be cases of syntactic dissimilation – be it for case or local anaphora – where the featural distinction implemented by DISAGREE between two linked nominals does not result in them being distinct at PF. In other words, we expect syncretisms for case and local anaphora to be possible: precisely because the CPC is implemented in narrow syntax, such syncretism patterns are not relevant for the CPC. This prediction is, of course, also fulfilled, as we have seen earlier. As discussed at length for case in Caha (2009) and for anaphora in Middleton

[33] The model thus also gives us an independent way to define a local domain in syntax. I.e. a syntactic domain is local just in case, whenever it contains two categorially non-distinct elements which share some feature α, these are necessarily syntactically distinguished with respect to values for α.

(2020), syncretism is not only attested for case and anaphora crosslinguistically, but these syncretisms also follow robust patterns of distribution (cf. the *ABA constraint discussed wrt. Middleton's work above).

10 Outro

One of the primary theses of this paper is that any model of syntactic relationships must take into consideration the Category Process Correlation (CPC), described below which, I suggest, follow from a generalized OCP constraint on final narrow-syntactic outputs at Spell-Out:

(64) Category-Process Correlation in syntax (CPC):
  a. Syntactic dissimilation typically obtains between categorially non-distinct elements;
  b. Syntactic assimilation typically obtains between categorial distinct elements.

I have proposed a revised model of Agree, termed RELATE, which is defined as in (65) below:

(65) The RELATE algorithm:
  1. LINK: Link two locally c-commanding objects A & B for some featural attribute α (notated $Link_{\alpha}(A, B)$).
  2. COMPARE: For some $Link_{\alpha}(A, B)$ where A and/or B is unvalued for α, check whether A & B in $Link_{\alpha}(A, B)$ are identical wrt. a categorial feature β, where $\beta \neq \alpha$.
     (i) If Yes $\rightarrow$ DISAGREE: force values for α to be distinct across A & B.
     (ii) Else $\rightarrow$ AGREE: allow values for α to be replicated across A & B.

I have shown that the simple expedients of allowing syntactic linking between two nodes not only under conditions of feature asymmetry but also in cases where a feature is unvalued on both linked nodes (a possibility already suggested in Pesetsky and Torrego, 2007) and by taking into account the respective categories of the linked elements — yield a massive payoff. The RELATE model can derive not only assimilatory phenomena like ϕ-agreement but also dissimilatory ones like dependent case and local anaphora without the need for additional machinery.

In this context, it should be noted that, while there may appear to be an Occam's Razor argument for preferring the proposals in Clem/Deal and

Poole over mine.[34], this impression is illusory. The proposals in Clem/Deal and Poole must introduce significant additional machinery to Agree to make dependent case work. Much, perhaps even all, of this is inevitable given the nature of dependent case. The proposal I make here, though not termed "Agree", is at a comparable level of complexity and can further derive the asymmetric distribution of syntactic assimilation and dissimilation crosslinguistically.

In addition, the revised model also makes a number of empirical predictions which seem, by and large, to be fulfilled. Foremost among these is the fact that it correctly predicts that syntactic dissimilation should be the exception; syntactic relationships should, by default, be assimilatory. Indeed, we have seen only two robustly attested patterns of syntactic dissimilation, namely dependent case assignment and local anaphora. All other syntactic phenomena, involving A and Ā-movement and agreement, instantiate syntactic assimilation. Under the current proposal, this asymmetry follows from the way in which the CPC interacts with the PIC and the way in which extended projections are distributed across phases. In short, nominal extended projections are typically repeated in a minimal phase, paving the way for competition effects, such as case competition effects, across like nominal categories in a local domain. It is striking and, I believe, by no means coincidental, that the one case of dependent valuation noted for Ndebele by Pietraszko occurs in precisely the kind of structural configuration that licenses competition in non-nominals, i.e. complex predicate constructions involving a lexical LV. It remains to be seen whether other cases of non-nominal dependent valuation exist. I have tentatively proposed that obviative mood marking may qualify as a kind of dependent mood valuation triggered under DISAGREE due to a link between two non-distinct modal heads in a local c-command relation.

Before I conclude, I would like to take a look again at Table (46), repeated below, which delineates the logical space of possible outcomes under AGREE and DISAGREE:

(66) Logical space of possible outcomes for AGREE & DISAGREE:

	$[\alpha : \_]$ on A or B (not both)	$[\alpha : \_]$ on A & B
$\chi_A \neq \chi_B$	1a/2a. AGREE=feature-valuation	3a. AGREE=do-nothing/dummy value to both
$\chi_A = \chi_B$	1b/2b. DISAGREE=do-nothing/dummy value to A or B	3b. DISAGREE= dummy-value to A or B

We have seen that ϕ-agreement in syntax instantiates Scenario 1a/2a; de-

[34] The argument would go something like this. These other proposals use the existing operation of Agree to implement dependent case where I propose an operation, RELATE, which subsumes AGREE in addition to a new operation, DISAGREE

pendent case instantiates Scenario 3b, and local anaphora represents Scenario 1b/2b. Are there any phenomena that instantiate Scenario 3a: i.e. cases involving a syntactic link between two categorially distinct nodes for some feature α which is unvalued on both? I propose here that ϕ-agreement with a nominal anaphor crosslinguistically may instantiate precisely such a scenario. As originally noted in Rizzi (1990), ϕ-agreement with an anaphor tends to yield atypical results, an observation termed the "Anaphor Agreement Effect (AAE)". Languages seem to exploit different parametrized strategies to avoid covarying ϕ-agreement in such cases. In some languages (e.g. Albanian, Italian Rizzi, 1990; Woolford, 1999), we get default agreement, in others we get a dedicated "anaphoric" agreement (e.g. Swahili Woolford, 1999), and in yet others the controller of agreement is anomalously switched to a non-anaphor (e.g. Kutchi Gujarati and Tamil, as discussed in Patel-Grosz, 2014; Sundaresan, 2016, respectively). In addition, Yuan (2021a) discusses the role of case in "protecting" an anaphor from triggering ϕ-agreement, in accordance with the AAE, for Inuktitut.

In recent work, Murugesan (2020) argues that the AAE obtains whenever a verbal functional head, e.g. T or v, bearing unvalued ϕ-features, tries to Agree with an anaphor which also bears unvalued ϕ-features by virtue of not yet having ϕ-Agreed with its antecedent. This is, in fact, the typical scenario for cyclic ϕ-Agree between v and a locally bound anaphor in object position given that the subject antecedent will not yet have been merged in Spec, vP at that point. Convincing support for this idea comes from the observation that, in those exceptional cases where ϕ-agreement with an anaphor obtains after the anaphor has had a chance to get its ϕ-features valued by its antecedent – e.g. ϕ-Agree between T and the object anaphor in Standard Gujarati – the AAE fails to hold and covarying ϕ-agreement obtains.

Under the current proposal, these facts are derived naturally under Scenario 3a. Assume a ϕ-link between v and an object DP which is shipped to COMPARE. COMPARE will establish that these elements are categorially distinct, triggering AGREE. Given, furthermore, that [ϕ] is unvalued on both, AGREE will either do nothing (i.e. like unvaluedness across the nodes already counts as feature identity), yielding default agreement, or will insert a dummy value on both v and the anaphor, yielding for v "anaphoric" agreement. At the same time, the current proposal overgenerates. In other words, in many languages, the situation underlying the AAE results in outright ungrammaticality – an outcome that is not so readily derived under RELATE. I leave further elaboration of this point for future work, noting for now merely that all four cells of the outcome table predicted in Table (46) are, in theory, both attested and derivable.

There are, of course, many open questions. One question that arises is how global case splits such as those discussed in Clem and Deal (2023) may be modelled in the current system. Global case splits refer to the crosslinguistic phenomenon whereby the case on a nominal is determined not by properties of that nominal itself or by the presence of another local nominal but by a comparison of the properties (e.g. person features or definiteness) of both. In Shawi, the language discussed by Clem and Deal (2023), dependent ergative case is assigned to subjects which are at least as high on the $1 > 2 > 3$ person hierarchy as the object. It is clear that such effects cannot be captured under a standard variant of Agree between a nominal and verbal functional head, warranting a more complex Agree algorithm such as that proposed in Clem and Deal (2023). However, under RELATE, two local DPs can be compared directly without need for a mediating functional head. This paves the way for different outcomes under AGREE and DISAGREE between them based on how the person features on each nominal may affect its categorial status. A further point of note is that when the subject shows up with ergative case, "a morpheme explicitly indexing the features of the object may attach to it" (Clem and Deal, 2023, 3). This too can be made to follow straightforwardly from a direct comparison of both local nominals. Finally, Clem and Deal (2023) argue that the existence of such patterns, which may further mimic hierarchy effects for agreement, lends credence to the idea that dependent case assignment is tied to ϕ-agreement. We have already seen that case can feed ϕ-agreement, thus it should be entirely possible for such parallels to obtain across both domains. I leave a fuller discussion of this point for future research.

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