

# The Morphology of the Basque Auxiliary: Thoughts on Arregi & Nevins 2012

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## 1 Distributed Morphology and lexicalism

Arregi and Nevins (2012) provide an explicit formulation of Distributed Morphology (DM) and support it with an illuminating and detailed treatment of Basque auxiliaries. I present a critique of their theoretical framework and of their analysis, and argue for constraint-based lexicalist morphology (LM), which differs from DM in two principal ways. First, while DM is *REALIZATIONAL* in the sense that morphology interprets the output of syntax, LM is *GENERATIVE* in that morphology builds phonologically and semantically interpreted words, possibly with complex argument structure information. These are combined in the syntax into phonologically and semantically interpreted sentences. The second main difference is that DM is resolutely *PROCEDURAL*, even in A&N’s constraint-and-repair version where constraints express inviolable generalizations and rules move morphemes and change their feature specifications to enforce them. The non-procedural, OT-based version of LM that I defend here has no morphological movement or structure-changing operations and uses ranked violable constraints as the generative mechanism.

To forestall misunderstanding, I emphasize that a strictly constraint-based approach need *not* embrace parallelism and global constraint evaluation; it is compatible with a cyclic approach where words are built incrementally and interpreted phonologically and semantically at each morphological step, as in Stratal OT. Although I believe such interactionist approaches have advantages over separationist ones (Scheer 2010), this will not be at issue here. Furthermore, though LM tends to be associated with lexicalist syntax, it is in principle compatible with a wide range of approaches to syntax, and was actually assumed in Chomsky’s (1995) original formulation of the Minimalist program.

I will be comparing DM to a family of constraint-based LM theories that includes Minimalist Morphology (Wunderlich & Fabri 1994, Wunderlich 2001) and Optimal Construction Morphology (Caballero & Inkelas 2013), abstracting away from the differences between them. They have much in common with DM. They are morpheme-based and treat paradigms as emergent rather than primitives of the theory, unlike “a-morphous” paradigm-based lexicalist theories such as Paradigm Function Morphology (Stump 2001), where affixes are not vocabulary items but outputs of operations. They also share with DM the use of underspecification, “Elsewhere” blocking, modularity, and a commitment to locality.

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Recent developments have brought LM and DM even closer. Today's DM is very different from the DM launched in Halle & Marantz 1993. Many of the objections to DM raised by morphologists (Pullum & Zwicky 1991, Stump 2001, Williams 2007, Aronoff 2012) are no longer applicable because recent articulations of it have implicitly taken account of them. It is not "syntax all the way down" any more; syntax and morphology are now separate modules as in LM, "distinct in their computational character and information types, and narrowly restricted in their interaction" (Rezac 2011:1). Embick (2010) reinstates the cyclic interleaving approach to the morphology-phonology interface, and (in this volume) retracts DM's much criticized treatment of stem allomorphy by readjustment rules in favor of an approach more in tune with LM.

Arregi & Nevins take this welcome though largely unacknowledged rapprochement with LM several steps further. Morphology is not only a module (p. 341), but consists of a series of sub-modules dedicated to specific types of constraints and repair operations. The clitic/affix distinction, rejected by Embick & Noyer 2001, is rehabilitated, albeit not in the way phonologists draw it (p. 64 ff., 80 ff., 95-101). A&N eschew morphological lowering operations that apply to abstract feature bundles prior to vocabulary insertion — another move towards conceptual economy, since these lowering operations were just head movement reversed. They make effective use of morphological features and markedness. Perhaps their most significant move is the adoption of constraint-driven derivations. These innovations of their book, coupled with its exceptionally precise and comprehensive empirical coverage, make it a landmark contribution. It is no exaggeration to say that it does for DM what the publication of Chomsky & Halle 1968 did for generative phonology.

The new look of DM makes it possible to focus more clearly on the essential architectural commitments that distinguish DM from LM. A&N's work is the perfect platform for theory comparison for another reason as well: it presents not merely a few illustrative analyses but a virtually complete account of the intricate auxiliary system of several dialects. It is now up to competing theories of morphology to show that they can deliver an equally good or better accounting of the Basque auxiliary system. This essay is a first step towards this goal from the perspective of LM.

My conclusion so far is that Basque provides no support for the involvement of syntactic head movement in word-formation, or for a processual realizational approach in general. Demonstrating this with a constraint-based lexical analysis of comparable depth would require another book; my aim here is just to outline, in the concisest possible way, DM and LM treatments of the crucial Basque data and to assess their merits. After introducing the principal generalizations, I turn to the phenomena involving morpheme order and paradigm gaps where the approaches diverge most sharply, and argue that DM makes things more complicated than they really are. I then proceed to three general points: (1) Basque morphology exhibits no opaque generalizations that require rule ordering within the morphology, (2) DM still fails to characterize phonological and morphological wordhood correctly, and (3) the constraint-and-rule approach leads to redundancy and loss of generalization.

The first part of the argument centers on the mirror effect, the correspondence between the constituent structure and order of morphemes in words and the constituent structure and order of syntactic heads in clauses (Baker 1988). An example of the mirror effect is that when Tense and Aspect are under separate syntactic heads, Tense is always higher, and when they are expressed by separate affixes, Tense is always farther from the verb root. Basque instantiates this generalization by marking Aspect on the main verb and Tense on the auxiliary. DM and lexicalism account for this

systematic relation between morphology and syntax in different ways: DM by deriving words from syntactic structures in ways that preserve their hierarchical relations, and lexicalism by constraints that apply to both domains (Grimshaw 1986). Any theory must have some principle, hopefully a semantically grounded one, that requires Tense to scope over Aspect. DM applies it in the syntax, and derives word structure from syntactic structure by scope-preserving movement operations. Instead of assuming the primacy of syntax, Lexicalism imposes the same scopal requirement on both syntax and morphology.<sup>1</sup>

The Basque case that I will focus on is the order of arguments in the clause and the order of person-case morphemes that index them in the auxiliary. The basic word order is Subject – IO – DO – Verb, as in verb-final languages generally.<sup>2</sup> The order in the auxiliary is Absolutive – Tense – Dative – Ergative — precisely the reverse, modulo the constraint that forbids word-initial Tense. DM derives the auxiliary from the syntactic structure by head movement, while LM derives them independently and attributes the correspondence between them to constraints that govern both syntactic constituency and morphological constituency. I will argue that A&N’s analysis does not really relate syntactic and morphological constituency in a principled way and that LM delivers a better analysis of Basque.

The exposition then turns to morpheme co-occurrence restrictions in the Basque auxiliary, including Person-Case Constraint (PCC) effects. Here DM’s syntax-centered processual approach again imposes analyses that are incompatible with LM. I lay out constraint-based analyses which are less stipulative and relate the Basque phenomena to similar phenomena in other languages, and which eliminate an apparent Duke of York derivation proposed by A&N.

I next turn to the problem of characterizing wordhood in DM, incisively addressed already by Williams (2007). I show that LM explains a major generalization across morphology and syntax noticed by A&N, and that it provides exactly the constituents that form phonological domains, namely stems, lexical words, and postlexical words (lexical words with clitics attached in the syntax). I conclude with some comments on the classic issue of duplication that arises in all constraint-and-repair approaches, and on the issue of opacity within morphology and at the morphology/syntax interface.

## 2 Morphology of the auxiliary

(1) reproduces the transitive present paradigm of the Ondarru Basque auxiliary from Yrizar 1992: 222.<sup>3</sup>

### (1) Transitive present

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<sup>1</sup>Of course both approaches must allow for the mirror effect to be overridden by other factors — in morphology, by phonological constraints and idiosyncratic restrictions on morpheme order, in syntax by adjacency requirement for direct arguments in positional licensing systems, as in *Mary gave the book to Fred* vs. *Mary gave Fred the book*. And both must provide for fusion of categories in the same functional head or affix.

<sup>2</sup>Shown, among other things, by focus, binding, crossover effects, and the order in multiple Wh-questions (de Rijk 1969, Elordieta 2001, Donohue 2004: 26).

<sup>3</sup>Affrication of *-tt-* as in *saittut* → *sa(i)txut*, regular in A&N’s data, appears in Gaminde’s data cited in Yrizar 1992. A major morphological difference between the two data sets occurs in the past ditransitive paradigm (not reproduced here).

	1Sg ‘me’	2Sg ‘you’	(3Sg)	1Pl ‘us’	2Pl ‘you’	(3Pl)
1Sg ‘I’		saittut	dot		saittuet	dottuas
2Sg ‘you’	nasu		dosu	gaittusu (dosu)		dosus
3Sg ‘(s)he’	nau	saittu	dau	gaittu	saittue	(do)ittu daus
1Pl ‘we’		saittuau	dou		saittuau	dous
2Pl ‘you’	nasue		dosue	gaittusue (dosue)		dosues
3Pl ‘they’	nabe	saittue	dabe	gaittue	saittues	(do)ittue dabes

A&N’s newer Ondarru data (p. 376-385) is very similar to Yrizar’s, except that their 2. person ergative plus 1Pl absolutive forms (parenthesized in (1)) have the interesting additional property of suppressing the 1Pl morpheme, viz. 2Sg/1Pl *dosu* for Yrizar’s *gaittusu* ‘you(Sg.) — us’ and 2Pl/1Pl *dosue* for Yrizar’s *gaittusue* ‘you(Pl.) — us’. A&N derive these forms by PARTICIPANT DISSIMILATION, dealt with below in section 9.

I treat the person-marking morphemes in the traditional way as agreement affixes (for A&N they are clitics). They are grouped around a core auxiliary head, whose allomorphy depends on the preceding “absolutive” (i.e. nominative) object or present tense marker *d-*:<sup>4</sup> after 1Sg. objects it is /-a-/, /-au-/ (e.g. *n-a-su* ‘me-Pres-you (Sg.)’), after 1Pl. and 2 person objects it is /-aittu-/ (e.g. *saitxut* ‘you-Pres-I (Sg.)’), and when there is no absolutive (nominative) it appears as *-o-*, *-au-*, or *-oittu-*. The position of the agreement affixes relative to the head is indicated by the hyphen in (2); /su/ and /gu/ can appear either before it or after it, depending on what other affixes are present.

(2)	Absolutive/Ergative	Dative (bimorphemic, Prep+P)
First singular	/n-/, /-t/, /-a/ <i>n-</i> , <i>-t</i> , <i>-a</i>	/-tz+t/ <i>-st</i>
Second singular	/su/ <i>s-</i> , <i>-su</i>	/-tz+su/ <i>-tzu</i>
Third singular	—    —	/-tz+∅/ ~ /-ko+∅/ <i>-tz</i> , <i>-ko</i>
First plural	/gu/ <i>g-</i> , <i>-gu</i>	/-tz+gu/ <i>-sku</i>
Second plural	/su(...)-e/ <i>s-...-e</i> , <i>-su-e</i>	/-tz+su-e/ <i>-tzue</i>
Third plural	/-e/ <i>-e</i>	/-tz+∅-e/ ~ /-ko+∅-e/ <i>-tze</i> , <i>-koe</i>

The morphemes in the left column of (2) are unspecified for case and can mark the person of either an ergative argument or of an absolutive argument. In the first singular the relation between prefixed *n-* and suffixed *-t/-a* is evidently suppletive; otherwise the prefixed forms (normally in absolutive function) are derivable from the corresponding suffixed ones (normally ergative) by deleting *-u*: *gu-* → *g-*, *su-* → *s-*. In *dou*, *saittuau*, *-g-* is phonologically deleted.

The datives in the right column evidently consist of a preposition plus a person morpheme, with some straightforward phonology (/ts/ → *s* / \_\_\_ [+obstr, -cont], and Voicing Assimilation /g/ → [k]). The third person has a portmanteau allomorph /ko/ used when the auxiliary contains no

<sup>4</sup>I think absolutive is just a name for nominative in languages that have an ergative case (contra Legate 2006), but I follow standard usage here for the sake of minimizing irrelevant terminological disparities.

other agreement morpheme.<sup>5</sup> We'll see at (25) and (47) below that the bimorphemic composition of the dative explains why it never appears in the initial, most deeply embedded slot of the auxiliary, even when it represents the thematically lowest argument.

Second and third person plurals of both sets contain a plural morpheme *-e*, which in this dialect is placed at the end of the auxiliary, sometimes separated from the corresponding person morpheme by intervening morphemes. Only one *-e* is ever realized, regardless of how many plural arguments there are.<sup>6</sup> There's also another plural ending *-s*, and /*gu*/ is a portmanteau that marks both plural number and first person.

To summarize, the case/agreement morphemes are of three types with respect to ordering:

- (3) a. suffixes: the datives, past tense *-an*, the plurals *-e* and *-s*, first singular *-t/-a*
- b. prefixes: *d-*, *g-*, first singular *n-*
- c. unspecified (prefixed or suffixed as the constraint system dictates): ergative/absolutive *gu*, *su*

The ordering restrictions (3a,b) on suffixes and prefixes are inviolable, i.e. governed by undominated constraints. These constraints, and the candidates violating them, such as forms with suffixed rather than prefixed 1Sg. *-n*, will simply be omitted in the tableaux below. The ordering restrictions subsumed under (3c) will be analyzed extensively below.

The case/agreement morphemes form an auxiliary with the functional head to which they attach, which I label T, as A&N do. The auxiliary is syntactically combined with a main verb, on which perfect or imperfect aspect is morphologically registered.<sup>7</sup>

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<sup>5</sup>A&N reject the morphological decomposition of the datives on phonological grounds. Their first argument is: “when *-tz* (the underlying form of the third singular dative clitic in our analysis) is followed by first singular ergative *-t* or first plural ergative *-gu* in Lekeitio and Ondarru, the result is *-tza-t* and *-tza-(g)u*, respectively, not *-s-t(a)* and *-s-ku*. A similar issue arises with the second singular form *-tzu* (33c). Although the cluster *tz-s* typically surfaces as *tz* in Basque, this is not the case in Biscayan finite verbs, where this cluster triggers epenthesis. For instance, third singular dative *-tz* followed by second singular ergative *-su* results in *-tza-su*, not *-tz-u*, in Lekeitio and Ondarru” (p. 130). The difference in phonological treatment can however be attributed to the fact that the morphological boundary inside the dative complex is tighter than the boundary between the case-person markers — most likely the former undergoes level 1 phonology. As a reminder of this tighter bond, I'll separate the dative and the person marker it governs with '+' instead of the '-' that I use for other morpheme boundaries, e.g. dative 1Sg. *tz+t* → *st*, dative 3Sg. and ergative 1Sg. *tz+∅-t* → *tzat*. Their second argument is that in Zamudio, the “dative clitic often surfaces as *-sku*, but the corresponding ergative clitic is *-u*, with no initial velar stop” (p. 131). The form *-u* is derived from *-gu* via phonological lenition (*g* → *y*-), which applies generally in Biscayan dialects, with deletion optionally to varying extent in Lekeitio and Ondarru, and obligatorily in Zamudio. A&N (p. 179 and fn. 92) argue that the output form of 1.Pl. /*g-*/ has been reanalyzed as underlying /*-u*/ in Zamudio. Alternatively, on the evidence of Zamudio's initial 1.Pl. /*g-*/ (e.g. A&N 98, ex. (111)) and of its dative forms we can assume that it retains underlying /*g-*/, with dative /*-ts+gu*/ → *-sku* at level 1 as in the other dialects, but categorical intervocalic *g* → ∅ at level 2. Yrizar 1992 I:599-604 shows the town of Zamudio as having *y-*, but the nearby dialect of Erandio (just 4 miles west of Zamudio, across what is now the Bilbao airport, if I read the Google map correctly) deleting even initial *g-* (Yrizar 1992 I:599-604).

<sup>6</sup>In DM it is probably necessary to associate a separate *-e* with each plural person clitic, to have it move to the end of the auxiliary, and to posit a morphological or phonological rule that collapses *-e* + *-e* into *-e*. In LM it can be treated as a single morpheme which assigns the feature [+Plural] to one or more arguments of the verbal predicate (as in Georgian, for example).

<sup>7</sup>The agreement morphemes are also added to a small class of aspectually unspecified main verbs, such as *etorri* ‘come’ and *ekarri* ‘bring’.

- (4) a. Eur-ak su-ri Jon-∅ presenta-∅ d-o-tz+su-e. (>  
 they-ERG.PL you.Sg-DAT Jon-ABS introduce-PRF PRES-T-DAT+2SG-PL  
*(do)tzue*, A&N 64)

‘They introduced Jon to you (Sg).’

- b. Su-k ni-∅ ikus-i n-a-su. (A&N 19)  
 you.Sg-ERG me-ABS see-PRF 1SG-T-2SG  
 ‘You(Sg.) have seen me.’

In the auxiliary, Datives always follow T immediately, even when there is no absolutive to claim the initial slot. In the present tense, T is preceded by an absolutive if there is one, or else by the morpheme *d-*, on which see below. The past tense is expressed by *-(a)n*; being restricted to suffixal position, it does not compete for the initial position with the absolutive:<sup>8</sup>

- (5) Ni-k Jon-ei gusta-ten n- e -tz+∅ -an (A&N 341)  
 1Sg-ERG/ABS Jon-DAT like-IMPF 1Sg- T -Dat+3Sg -Past  
 ‘John used to like me’

### 3 Lexical analysis

Since the auxiliary complex is formed as a word in the morphology, it enters the syntax as a single functional head. Its case and person/number features must match those of the finite main verb’s Nominative, Ergative, and Dative arguments.

LM assumes that morphemes have grammatical and semantic properties which specify how they are combined and what the result of the combination is. E.g. English has a morpheme  $\left[ \begin{smallmatrix} -s \\ +Plural \end{smallmatrix} \right]$ , with a subcategorization restriction  $\left]_N \text{ ---} \right]$  that requires it to be suffixed to a Noun and leaves the category Noun of the base unchanged, yielding  $\left[ \begin{smallmatrix} \text{book-s} \\ +Plural \end{smallmatrix} \right]_N$ . Selectional restrictions on affixes are enforced locally; in cyclic versions of LM the phonology, semantics, and argument structure are computed at each step.

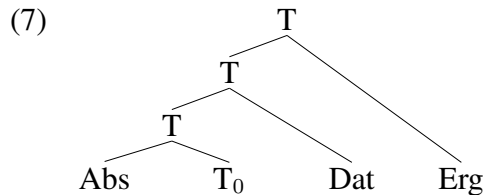
Within this overall framework, a lexicalist OT word derivation can be constructed in several ways. In Minimalist Morphology, morphemes are combined freely and the resulting candidate words are organized into paradigms by blocking principles that select the optimal word forms from the set of potential word forms. The point of this two-stage evaluation is that the same constraints and principles account for polysemy in existing forms and for the ungrammaticality of non-existing forms. In Optimal Construction Morphology, words are constructed to render a given input meaning and morphosyntactic feature complex, delivered by GEN (and perhaps filtered through a constraint system). The morphology evaluates competing candidate words in terms of which optimally realizes the meaning target. For the sake of simplicity and maximum compatibility with the realizational outlook of DM I assume the latter format. The featurally specified inputs will be given at the top of each tableau, and the candidates are fully formed morphological words that express them.

<sup>8</sup>A&N (2.4.3 and p. 100) treat *-an* as past tense complementizer agreement.

The ordering of the case/agreement morphemes in the Basque auxiliary is governed by the three ranked violable constraints in (6). The first two are just the standard OT treatment of second-position phenomena (clitics, verb-second etc.). The third is a correspondence constraint which requires the constituent structure of the auxiliary to be congruent with the hierarchical relations of the thematic roles that it licenses.

- (6) a. NONINITIALITY:  
        $T_0$  is not initial in T.  
 b. ENCLISIS:  
        $T_0$  is initial in T.  
 c. CASEALIGNMENT ( $\approx$  MIRROR PRINCIPLE)  
       If the Th-role that  $C_1$  licenses outranks the Th-role that  $C_2$  licenses,  $C_1$  c-commands  $C_2$  (constituent structure mirrors thematic argument prominence).

The order of case/agreement morphemes derived by (6) is shown in (7).



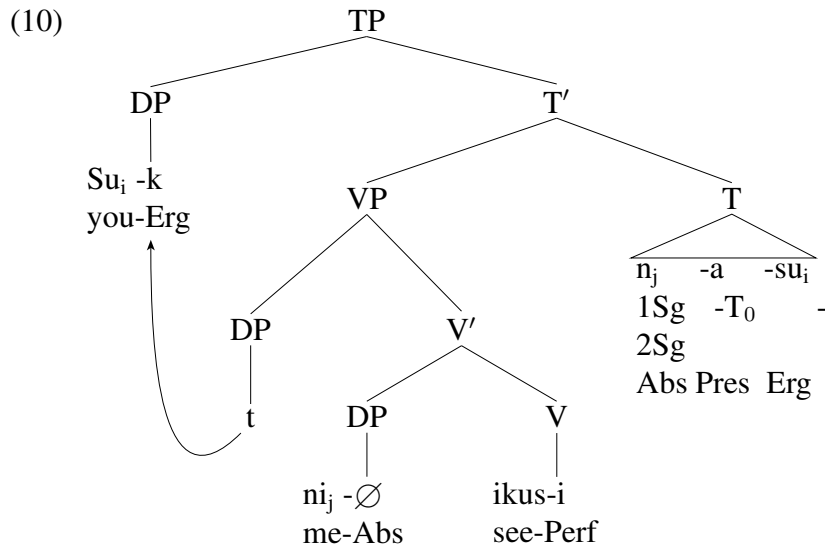
The morphological derivation of *n-a-su* ‘you (Sg.)-Pres-me’ (see (1)) by the constraints in (6) is shown in (8).

(8)

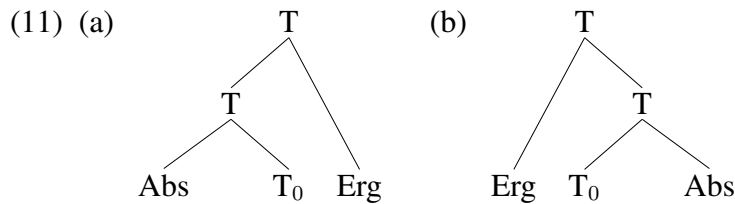
	NONINITIALITY	ENCLISIS	CASEALIGNMENT
Present + Abs.1Sg + Erg.2Sg			
a. * <i>a-t-su</i> T-1Sg-2Sg	*		
b. <i>n-a-su</i> 1Sg-T-2Sg		*	
c. * <i>n-su-a</i> 1Sg-2Sg-T		**	
d. * <i>a-su-t</i> T-2Sg-1Sg	*		*
e. * <i>s-a-t</i> 2Sg-T-1Sg		*	*
f. * <i>s-n-a</i> 2Sg-1Sg-T		**	*

The output is sent to the syntax, where words are combined and agreement is enforced. The derivation of sentence (9) given in (10).

- (9) Su-k            ni- $\emptyset$     ikus-i    **n-a-su.**            (> *nasu*) (A&N 19)  
 you.SG-ERG me-ABS see-PERF 1SG-PRES-2SG  
 ‘You(Sg.Erg) have seen me (Abs).’



All violation marks in tableau (8) are based on the left-branching structure in (11a) (not shown in the tableau for space reasons). Its right-branching mirror image in (11b) (which would be realized as ungrammatical *\*s-a-t* rather than *n-a-su*) is harmonically bounded. While the top T of both (11a) and (11b) conforms to (6c) CASEALIGNMENT, (11b) loses (on any ranking of the constraints) to (11a) because its lower T violates (6a) NONINITIALITY.



The correct result is derived both in an incremental cyclic derivation (as in Stratal OT or Optimal Construction Morphology), and in a single evaluation of the finished auxiliary (as in parallel OT). Either way, the three constraints in (6) together force a clitic order that reverses the basci orientation of the auxiliary in the clause.

This minimal example already provides some food for theory comparison. Constraints (6a) NONINITIALITY and (6b) ENCLISIS correspond to A&N's T-NONINITIALITY ("terminal T cannot be leftmost within T<sup>0max</sup>", p. 276) and T-PENINITIALITY ("only one morpheme may precede terminal T within T<sup>0max</sup>", p. 266). But they are more general, and they do more work. They are more general in two respects. First, neither of them needs to specify the domain restriction "within T<sup>0max</sup>", because all constraints referring to morphemes apply within the word domain. In fact, the same NONINITIALITY constraint applies in the syntax to bar auxiliary T<sub>0</sub> words from being initial in the clause, as we will see at (56) below. Secondly, ENCLISIS does not need to specify "only one" because that follows from the constraint ranking NONINITIALITY > ENCLISIS. And the constraints do more work in OT than in DM because they generate the correct outputs directly and do not require movement processes to implement them, which have to be hedged by arbitrary restrictions, as shown below. The sparser machinery achieves not merely greater theoretical parsimony or elegance, but a more restrictive typology. These advantages of the lexical analysis accrue directly from adopting OT.



CASEALIGNMENT is also a very general constraint in syntax; some version of it is basic to Lexical Decomposition Grammar, the licensing theory explored in Kiparsky 1996, 2001, Wunderlich 1997, and for Basque in Donohue 2004. It builds on the idea (due to Bierwisch) that predicates are represented by expressions in which Th-roles are lambda-abstractors over the variables in the function denoted by the predicate, the semantic role of the variable over which the lambda operator abstracts determines the semantic content of the resulting Th-role, and the variable's depth of embedding in Semantic Form determines the Th-role's rank in the Th-hierarchy. The Semantic Form of nouns and verbs includes in addition a referential argument, which is bound by a functional category (C/I in the case of verbs, D in the case of nouns). The referential argument of a verb is an event ( $\lambda s$  in (12)). For example, 'kill' is composed first with the thing-killed and then with the agent, expressed respectively by the absolutive-marked object and ergative-marked subject in Basque. And 'show' is composed first with the thing-shown, then with the intended seer, and then with the agent.

- (12) a. *kill*:  $\lambda y \lambda x \lambda s$  [ CAUSE ( $s, x$ , DIE ( $y$ )) ]  
 b. *show*:  $\lambda z \lambda y \lambda x \lambda s$  [ CAUSE ( $s, x$ , CAN (SEE ( $y, z$ ))) ]

The semantic decomposition does the work that syntactic D-structure does in the GB tradition. In particular, complex predicates represent two or more events. The arguments of derived predicates are licensed by case, agreement, and word order in the same way as simple predicates (see Donohue 2004 for Basque, and Kiparsky 2013 for a typological demonstration), but in complex predicates the most prominent argument of an embedded event structure is visible as a subject for purposes of anaphora, control, and other construal phenomena. For example, Japanese "biclausal" causatives are represented as follows:

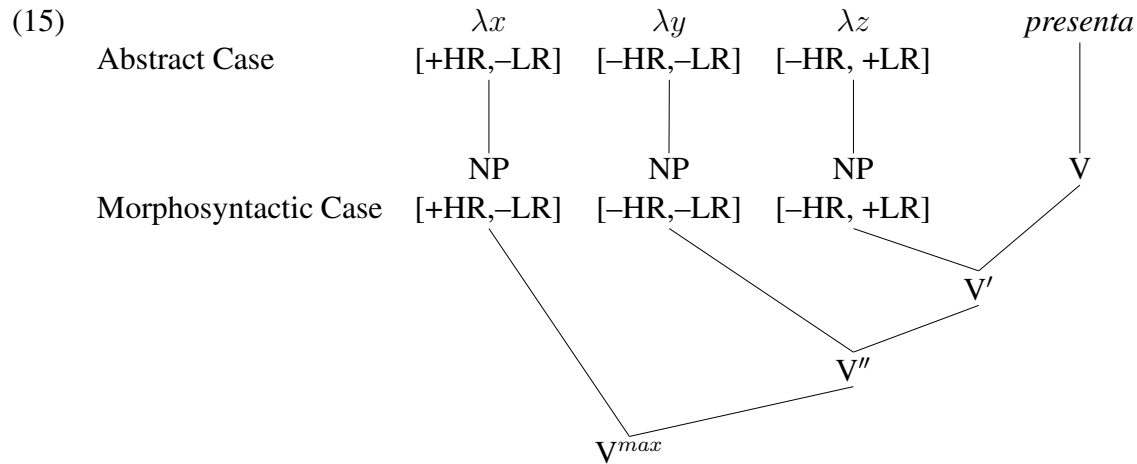
- (13) a. *kaw-ase*:  $\lambda z \lambda y \lambda x \lambda s_1$  [ CAUSE ( $s_1, x, \exists s_2$  BUY ( $s_2, y, z$ )) ] 'make buy'  
 b. *kaw-ase*:  $\lambda z \lambda y \lambda x \lambda s_1$  [ CAUSE ( $s_1, x, \exists s_2$  CAN (BUY ( $s_2, y, z$ ))) ] 'let buy'

Coercive causatives such as (13a) have direct internal arguments, eligible to be case-marked with accusative *o* when the double-*o* constraint permits, while permissive causatives such as (13b) have a causee additionally annotated with inherent dative case. Both however have "subject properties" as far as binding, honorification etc. are concerned.

The thematic roles are assigned abstract Case, characterized by the cross-classifying features [ $\pm$ H(ighest) R(ole)], [ $\pm$ L(owest) R(ole)], which must optimally match the corresponding morphosyntactic feature specifications of their licensers, morphological case, agreement, or structural position. There are four abstract Cases, identical with the grammatical functions commonly posited in the typological literature, and four structural morphosyntactic cases:

- |      |    |               |                          |
|------|----|---------------|--------------------------|
| (14) |    | Abstract Case | Morphosyntactic case     |
|      | a. | [+HR,+LR] S   | Nominative (=Absolutive) |
|      | b. | [-HR,+LR] O   | Accusative               |
|      | c. | [+HR,-LR] A   | Ergative                 |
|      | d. | [-HR,-LR] D   | Dative                   |

In the simplest case, the two case tiers line up perfectly and all the features unify. This is illustrated by the Basque verb *presenta* ‘introduce’.

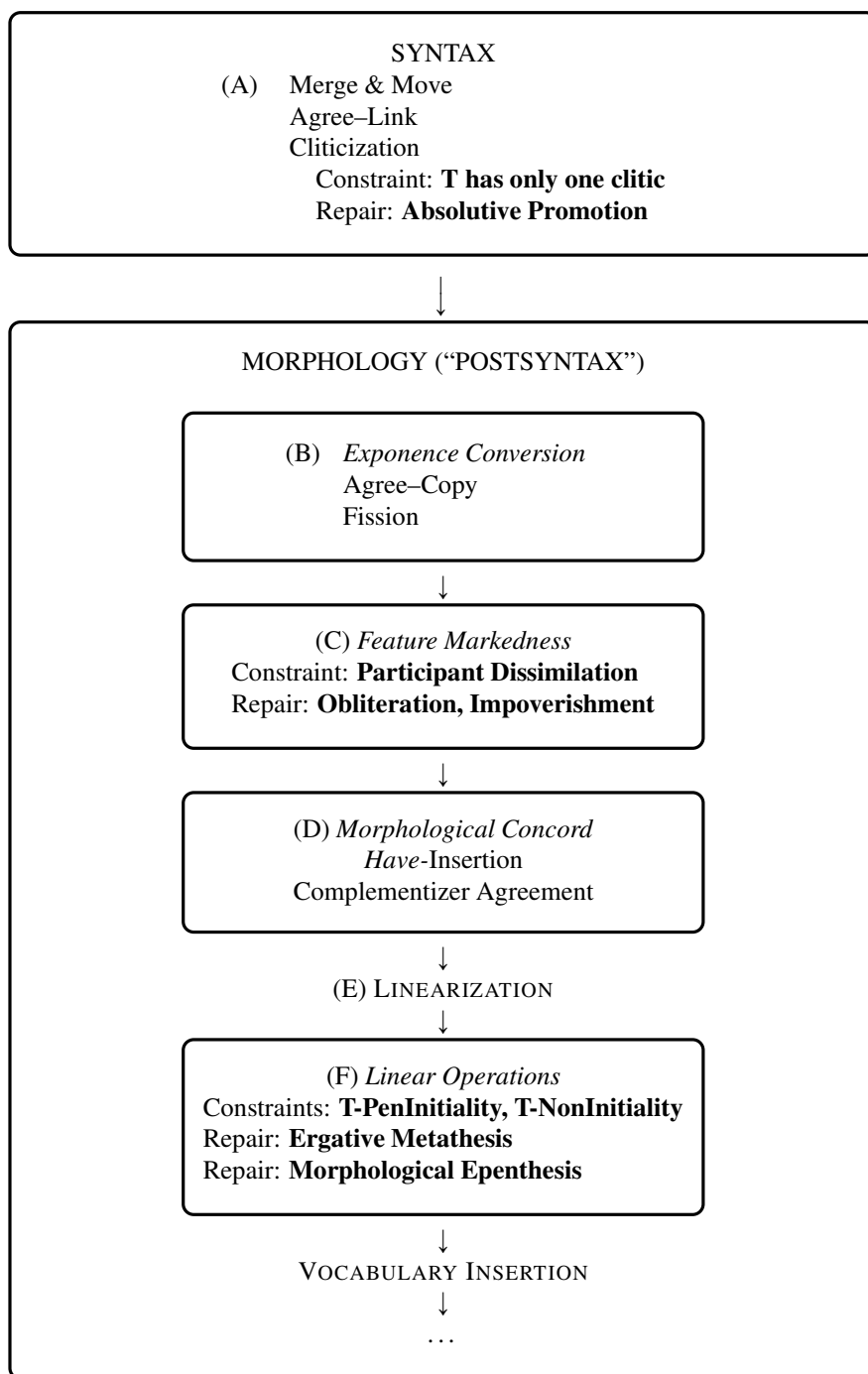


The basic clausal order Subject – Indirect Object – Direct Object thus reflects the case hierarchy and ultimately the order of semantic composition of the arguments with the predicate. Within the word, the same correspondence between case-person morphemes and the case hierarchy organizes the auxiliary. This is the theoretical principle behind the alignment constraint (6c).

#### 4 The DM analysis in detail

Here is a summary of A&N’s proposed organization of morphology and its interface with syntax, with their analysis of the Basque auxiliary (adapted from their pp. 4, 342).

(16) Distributed Morphology

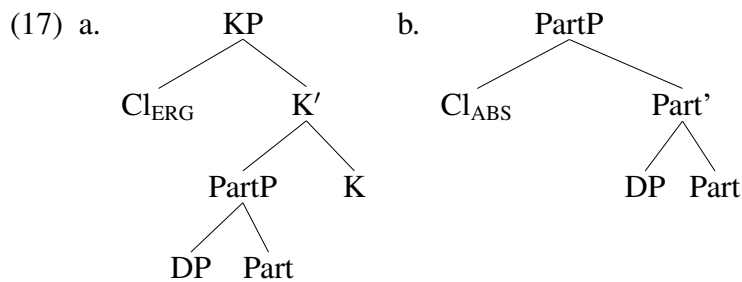


Unlike LM, which is designed to have the constraints get the word structure right the first time, DM posits a sequence of syntactic and morphological operations that together put the morphemes into the correct order and assemble them into a single word. Syntactic operations operate on unordered abstract nodes containing feature bundles to yield an output which is sent to the morphology, where a set of morphological operations first apply to unlinearized feature bundles and

nodes, then a word-internal Linearization operation imposes an ordering on feature bundles, Linear Operations move abstract terminal nodes around and copy them within the word, and finally Vocabulary Insertion provides them with phonological exponents. This terminates the morphological derivation, and the output then goes to the phonology (though A&N leave the door ajar for cyclic interleaving).

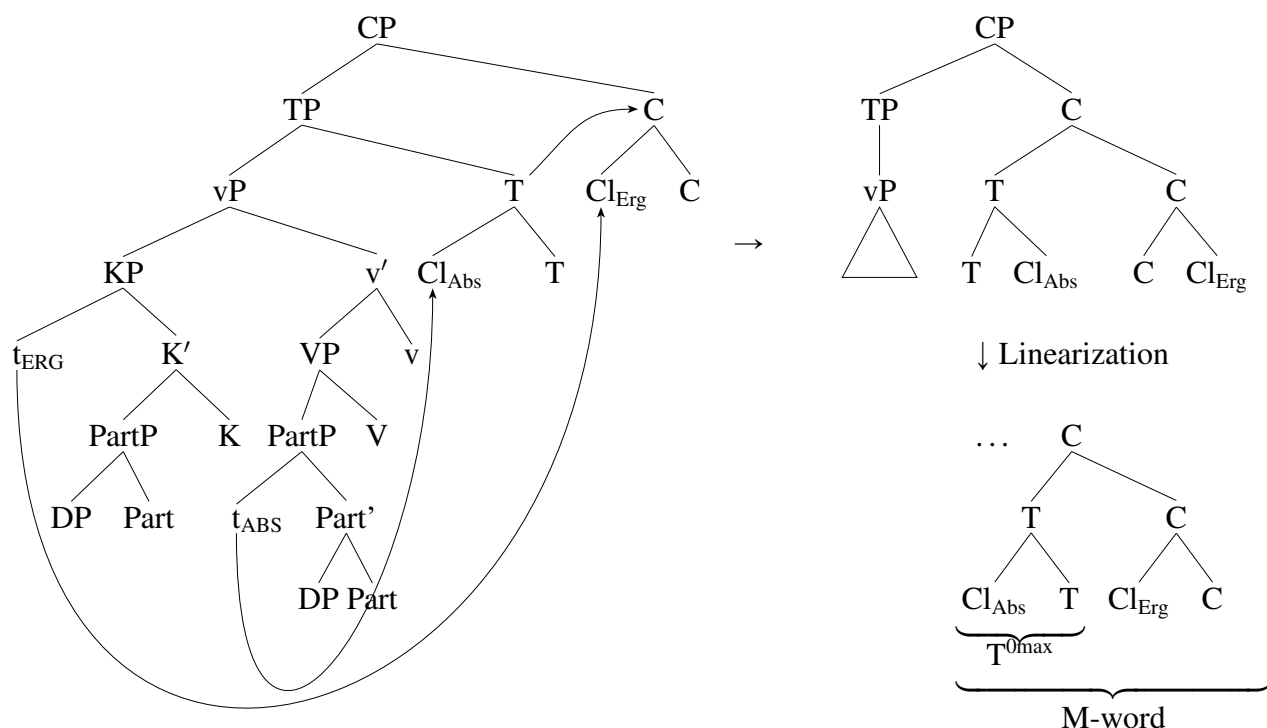
This architecture departs from other versions of DM in some significant respects. Linearization is allocated to a distinct fixed stage of the derivation, which separates early morphological operations that do not care about the order of morphemes from later morphological operations that do care about the order of morphemes, and there are many more types of operations than in Embick and Noyer (2001).

For A&N, P/N morphemes are clitics that originate as heads of KPs and Part(icipant)Ps in argument position.



The derivation begins in the syntax with the usual merge and move processes. The AGREE-LINK operation establishes an agreement relation based on hierarchical relations and locality. Still in the syntax, ergative clitics head-move from their argument position to the functional projection C(omp), absolutive and dative clitics head-move to T(ense), and T is then adjoined to C. (This requires main clauses to be headed by C.) (18) summarizes these stages of the derivation, as presented on their pp. 58-59.

(18)



According to A&N (p. 57) the reason case-bearing clitics are attracted to T and C is that the clitics bear a finiteness feature [+fin] that must be checked by the heads T and C (Rizzi 1997). Why ergative clitics must land in C and absolutive and dative case must land in T rather than the other way around remains unexplained. In particular, it does not seem to follow from the thematic prominence of the arguments that the clitics are associated with, or from the grammatical relations or cases that they bear.

Another Basque-specific constraint guarantees that T and C attract just one clitic each (A&N p. 66). The posited head-to-head movement of clitics requires some loosening of the standard locality constraints (p. 58). In (18) the clitics have to bypass intervening ineligible heads to reach their proper landing sites. Absolutive/dative clitics move from below the c-commanding ergative clitic past v and V to T, and ergative clitics in turn move past the absolutive in T to C. A&N propose that head movement of clitics has the special property that it typically skips intervening heads that cannot host them, in this case skipping v and V, which cannot host clitics at all, and T, which cannot host ergative clitics (although it can host dative and absolutive clitics).

This entire apparatus appears to be an artifact of having the pieces of the auxiliary assembled by syntactic movement. The lexical analysis has no movement, hence no puzzle about what moves where when, and why. Instead, (6c) applies directly in both morphology and syntax, interacting with constraints that are specific to those domains. The position of datives follows directly from (6). They cannot precede T because of their bimorphemic structure, and they cannot follow ergatives by (6c).

In DM the output of these syntactic movement processes then enters the morphology, passing through a sequence of strata, each with its own set of well-formedness principles implemented by corresponding repair operations. Exponence Conversion, the first submodule of the morphology, interprets the syntactically constructed agreement links by copying the values of the  $\phi$ -features onto

the unvalued agreeing element T (A&N 86), and Fission applies (to split off Plural into a separate morpheme, among other things, A&N 132). The second submodule implements syntagmatic and paradigmatic feature co-occurrence constraints in the auxiliary by feature deletion processes. I address this part of the analysis in sections 7-9 below. The next module effects complementizer agreement, posited by A&N (2.4.3 and p. 100) for *-an*, which I treat as a past tense marker.

This part of the DM derivation produces unordered constituent structures with no actual morphemes. The clitics are now linearized with respect to their sisters by the two rules in (19). (19a) places clitics before their head. For datives, it is overridden by a special linearization rule (19b) that places dative clitics after T.

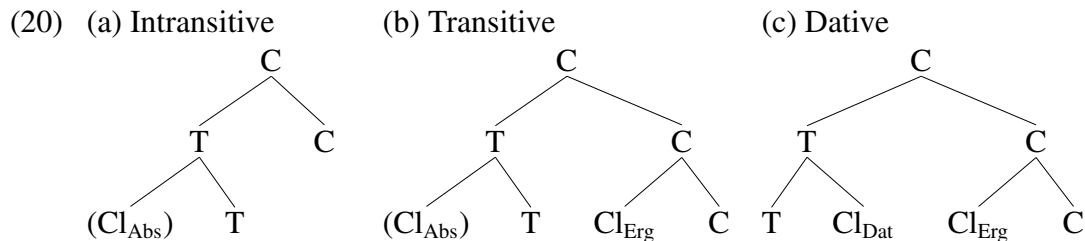
(19) Linearization in Basque words (A&N 60, 264)

- a. In a binary branching node *x* with daughters *y* and *z*, where *y* is the head of *x*, *z* precedes *y*. (Head-finality, the general rule for Basque.)
- b. In a binary branching node *x* with daughters *y* and *z*, where *y* is the head of *x* and *z* is a dative clitic, *y* precedes *z*. (Special linearization rule that places dative clitics after T.)

The fixed position of dative clitics is stipulated a second time in the structural description of Ergative Metathesis, to which we turn next.

## 5 Ergative Metathesis

Syntactic cliticization and morphological linearization yields the following structures:



After Linearization, all three classes of clitics occur string-adjacent to T, and on A&N's assumption that allomorphy depends on string-adjacency we might expect the shape of T to be sensitive to them.<sup>9</sup> Actually clitic allomorphy ("agreement" for A&N) only ever depends on absolutive clitics; if there is no absolutive clitic in the auxiliary, T assumes its default shape. In the lexical approach this is a natural consequence of the constituent structure in (7) and morphological locality.<sup>10</sup>

<sup>9</sup>Bermúdez-Otero notes that this is not the case under Embick's (2010) proposal that vocabulary insertion is cyclic, which A&N do not adopt but leave open as a possibility (p. 114, fn. 4).

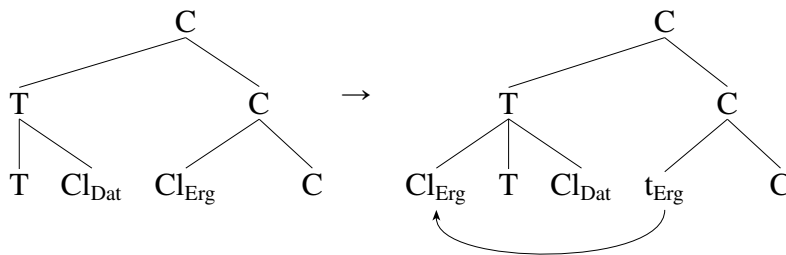
<sup>10</sup>As Bermúdez-Otero points out, the structure in (20c) predicts that T<sub>0</sub> allomorphy might be conditioned by the dative, assuming that vocabulary insertion is cyclic and the highest projection of T defines a cyclic domain. A&N (p. 83) actually say that T<sub>0</sub> agrees covertly also with datives. The evidence comes from a dialect in which first person dative clitics are represented by absolutives in ditransitive auxiliaries (p. 87) ("impoverishment"). Since these clitics are absolutives, and placed like other absolutives to the left of T<sub>0</sub>, the fact that they affect the shape of T<sub>0</sub> like absolutives is expected. I have not found any instances of actual dative agreement in their data.

Some derivations require further repair operations to fix linearity violations that emerge from the Linearization process. When there is no absolute clitic, linearization creates a violation of T-NONINITIALITY. There are two classes of cases of this type: transitives with third person subjects, which have no clitic (cases (20a,b)), and Dative constructions (case (20c)). These violations are repaired in the past tense by ERGATIVE METATHESIS (previously called ERGATIVE DISPLACEMENT), and in the present tense by insertion of the clitic *d-*, analyzed by A&N as an empty clitic. Ergative Metathesis moves an ergative clitic to the left edge of T in past tense auxiliaries with (null) third person objects, e.g. *neban* ‘I -ed it’ (A&N 278 ff.); see the 3.P columns in the past paradigm (21).<sup>11</sup>

(21) Transitive past

	1Sg ‘me’	2Sg ‘you’	(3Sg)	1Pl ‘us’	2Pl ‘you’	(3Pl)
1Sg		sindduda(se)n	neban		sinddudasen	nittun
2Sg	ninddusun		sendun	gendusun		sendusen
3Sg	nittun	sinddusen	(e)ban	gaittun, gindun	sinddusen	sittun
1Pl		sinddu(gu)sen	gendun		sinddu(gu)sen	gendusen
2Pl	ninddusuen		senduen	gendusuen		sendu(e)sen
3Pl	nittuen	sinddu(e)sen	(e)ben	gaittuen, ginddue(se)n	sindduesen	sitxue(se)n

(22) ERGATIVE METATHESIS



The rule incorporates three conditions. The clitic that moves is the *ergative*, not the structurally closer dative. This duplicates the linearization rule (19b) that dative clitics must follow their T head. The clitic has to move to the *left edge* of T, duplicating the NONINITIALITY constraint. And it moves only in the *Past*, to keep the initial position vacant for a default clitic in the present tense.

When both subject and object are third person, and the tense is past, no overt material is available to put before T, so A&N posit a zero prefix to satisfy the constraint, as in (23b).

- (23) a. Irakurr-i **n** **-eu -n** liburu -∅ (/*n-eu-n/* → *neban*) (Ondarru, A&N 339)  
 read-PRF 1.SG -T -PAST book- ABS.SG.

‘I read (Past) the book.’

<sup>11</sup>Depending on the dialect, the process is subject to additional constraints which cannot be detailed here for lack of space. The data in (21) are again from Yrizar, with some phonological variation omitted.

- b. Bota- $\emptyset$   $\emptyset$  -**eu** -**n** (/eu-n/ > *ban*) (Ondarru, A&N 190)  
 throw-PRF 3.SG -PST.3.SG -PAST  
 ‘He threw it.’

Again, the lexical analysis derives these cases directly. There are no 3.Person absolutive/ergative P/N morphemes, and no past tense prefixes.<sup>12</sup> A faithfulness constraint IDENT-F (apparently undominated) prevents insertion of featurally incompatible prefixes, as in (24) 1Sg for 3Sg. The NONINITIALITY constraint is then violated, precisely when and because there is no way to obey it.

(24)

	IDENT-F	NONINIT	ENCLISIS	CASEALIGNMENT
Past (+ Abs.3Sg) + Erg.1Sg → <i>n-eb-an</i>				
1a. * <i>eu-t-n</i> T-1Sg-Past		*		
1b. $\text{☞}$ <i>n-eu-n</i> 1Sg-T-Past			*	
Past (+ Abs.3Sg) (+ Erg.3Sg) → <i>eb-an</i>				
2a. $\text{☞}$ <i>eu-n</i> T-Past		*		
2b. * <i>n-eu-n</i> 1Sg-T-Past	*		*	

In case 1 of (24), NONINITIALITY coerces the ergative into initial position. There is no “Ergative Metathesis” operation in the sense of a movement of the clitic either within the auxiliary or between functional heads. In case 2 of (24), NONINITIALITY cannot be obeyed because there is nothing that can be put in initial position (without violating undominated constraints such as IDENT-F and the requirement that *-n* must be suffixed). This exceptional situation compels a violation of NONINITIALITY. There is no invisible clitic.

In this way ranked violable constraints avoid the need for the artifice of letting morphotactic conditions be satisfied by epenthetic default morphemes that are phonologically null and morphologically and semantically empty. Lexicalism has no problem with null morphemes — in fact we will want to say that the preposition in the 3P. dative clitic has a null object (*tz*+ $\emptyset$ ) — but it cannot make sense of A&N’s crucial contrast between the absence of a clitic and a null clitic with no detectable properties, which verges on empirical unfalsifiability.<sup>13</sup>

## 6 *d*-Insertion

To continue with the DM derivation: since Ergative Metathesis is restricted to Past tense auxiliaries, another repair is required when a present tense auxiliary lacks an overt absolutive. This is the an empty morpheme *d*- as a last resort to satisfy NONINITIALITY. This analysis is not in principle incompatible with my proposal, but the price to be paid for it are the dubious moves needed to keep the initial position vacant so that *d*- can fill it, in particular the zero prefix in /eu-n/*ban* that we saw in (23b) and the stipulation that Ergative Metathesis takes effect only in the past tense. Trask (1977, 1997) and Donohue (2004) account for that restriction more simply by making

<sup>12</sup>The lexical inventory has to be specified in any case, though one can argue that the gaps must be enforced by the constraint system itself.

<sup>13</sup>The same issue arises with T-initial forms like Zamudio *otzen*, Lekeitio *eutzan* ‘he -ed (to) it (it)’, where A&N posit that NONINITIALITY is satisfied by an initial null 3Sg. clitic (their (140), p. 288).



it a present indicative prefix. It can't be inserted if the input specifies past tense because of feature clash (by a general faithfulness constraint IDENT-F, let us suppose), but it is inserted in the present tense where dominant constraints on morpheme order permit.

(25) Derivation of *dotzat* 'I have -en (it) to him'

	NONINIT	ENCLISIS	CASEALIGNMENT
Pres (+ Abs.3Sg.) + Dat.3Sg + Erg.1Sg → <i>d-o-tz-t</i>			
a. * <i>e-tz-t</i> T-Dat.3Sg-1Sg	*		
b. * <i>tz-e-t</i> Dat.3Sg-T-1Sg		**	
c. * <i>d-o-t-tz</i> Pres-T-1Sg-Dat.3Sg		*	*
d. * <i>n-a-tz</i> 1Sg-Pres-T-Dat.3Sg		*	*
e. ☞ <i>d-o-tz-t</i> Pres-T-Dat.3Sg-1Sg		*	

It is true that *d-* occurs only in present auxiliaries, but the drawback of making it simply a present tense prefix is that it must be blocked from appearing throughout intransitive and transitive present paradigm, so as not to derive unwanted forms like \*/do-T-t-su/ → \**dotzu* instead of *nasu* 'you(Sg.) — me' in (8). Adopting Hualde and Ortiz de Urbina's (2003: 207) view that *d-* is a present absolutive third person prefix would take care of this overgeneration. But A&N (p. 136 ff.) give compelling arguments to show that it is *not* an absolutive clitic. Yet third person absolutive present is an accurate characterization of its distribution. It appears in the third person in (1) and (26), and the present paradigms (27)-(29), which have a third person absolutive object throughout.

(26) Intransitive

	Present	Past
1Sg	nas	nitzan
2Sg	sara	siñan
3Sg	<b>da</b>	san
1Pl	ga	giñan
2Pl	sase	siñasen
3Pl	<b>dii</b>	sin

E.g. *da* 'he -s'

(27) Ditransitive present, singular direct object (only 3P)

	1Sg	2Sg	3Sg	1Pl	2Pl	3Pl
1Sg		dotzut	dotzat		dotzuet	dotzet
2Sg	dostasu		dotzasu	doskusu		dotzasu
3Sg	dosta	dotzu	dotza	dosku	dotzue	dotze
1Pl		dotzuau	dotzau		dotzuau	dotzau dotzeu
2Pl	dostasue		dotzasue	doskusue		dotzasue
3Pl	doste	dotzue	dotze	doskue	dotzue	dotze

E.g. *dosku* ‘he -es us it’

(28) Ditransitive present, plural direct object (only 3P)

	1Sg	2Sg	3Sg	1Pl	2Pl	3Pl
1Sg		dotzuas	dotzas		dotzue(ta)s	dotzes
2Sg	dostasus		dotzasus	doskusus		dotzasues
3Sg	dostas	dotzus	dotzas	doskus	dotzues	dotzes
1Pl		dotzuaus	dotzaus		dotzuaus	dotzaus
2Pl	dostasues		dotzasues	doskusues		dotzasues
3Pl	dostes	dotzues	dotzes	doskues	dotzues	dotzes

E.g. *doskus* ‘he -es us them’

(29) Ergative+Dative present, absolutive object (only 3P)

	1Sg	2Sg	3Sg	1Pl	2Pl	3Pl
1Sg		dotzut	dotzat		dotzuet	dotzet
2Sg	dostasus		dotzasus	doskusu		dotzasus
3Sg	dosta	dotzu	dotza	dosku	dotzue	dotze
1Pl		dotzuau	dotzau		dotzuau	dotzau
2Pl	dostasue		dotzasue	doskusue		dotzasue
3Pl	doste	dotzue	dotze	doskue	dotzue	dotze

E.g. *dosku* ‘he -es us it’, *dostasus* ‘you have -ed (to) me’

An apparent problem for this generalization is that the paradigm (29) applies also to bivalent (intransitive) Ergative – Dative verbs (Yrizar 1992: 223). However, it has been argued that apparently intransitive verbs with ergative subjects are covertly transitive (Levin 1983, Ortiz de Urbina 1989, Bobaljik 1993, Hale & Keyser 1993, Laka 1993, Alcázar 2012, but see Preminger 2012 for a contrary view). In terms of Lexical Decomposition Grammar, this would require an expletive 3P absolutive object, linked to an improper theta-role (a theta-role which corresponds to nothing in semantic structure) with the feature [+LR].<sup>14</sup> It is a natural consequence of the decomposition of case into relational features sketched out in section 3, as well as of theories of ergative case as “dependent case” (Marantz 1991). On this assumption, the generalization that *d-* appears in present tense third person absolutive contexts holds up.<sup>15</sup>

<sup>14</sup>In LDC improper [+HR] theta-roles have been used for dummy subjects such as *it* and *there*, e.g. *There came a war* from  $\lambda y \lambda x$  [y COME].

<sup>15</sup>The transitivity of unergatives has been documented for other languages. A robust cross-linguistic generalization is that intransitive sentences cannot be antipassivized — in other words, there are no impersonal antipassives, even though impersonal passives are common. But in Bandjalang (Crowley 1978: 62) intransitives with ergative subjects (“urinate”, “yawn”, “dance”) can be antipassivized by the suffix *-li* to yield *absolutive* (nominative) intransitives. (In Lexical Decomposition Grammar, antipassivization is intransitivization, whereas passivization is demotion (existential binding) of the most prominent available Theta-role. This also explains why there are transitive passives (passives of ditransitives, as in English) but no transitive antipassives.) In Georgian, subjects of transitive and intransitive verbs cannot be conjoined, except that certain intransitive verbs can optionally have ergative subjects, and exactly those subjects *can* be conjoined with the subjects of transitive clauses (Boeder 1979: 443).

However, as A&N show, *d-* is not a case-person clitic like the first and second clitics. It does not *license* third person absolute arguments. Therefore it seems best to treat *d-* as a present tense marker which *selects* a third person absolute auxiliary. Similarly the morpheme *g-* appears to be a default clitic that selects auxiliaries with a dative, but does not itself license dative arguments, see e.g. (48) below.

## 7 The Person-Case Constraint

Like its neighbor languages French and Spanish (Bonet 1994, 1995), Basque obeys the Person-Case Constraint (PCC).

### (30) The PERSON-CASE CONSTRAINT (PCC)

PCC: Dative may not co-occur with first and second person absolute.

The PCC prohibits sentences like ‘They introduced me to you’ (A&N 75), though speakers can express the idea in more roundabout ways (A&N 68, Rezac 2008). Because of the PCC and the absence of third person agreement, an auxiliary or verb can have at most two agreement morphemes (Donohue 2004).

One of A&N’s most interesting claims is that the PCC is derivable from Basque’s clitic restrictions: dative and absolute clitics cannot co-occur because they compete for the single slot allotted to them in T; third person is exempt from the PCC because there are no third person absolute clitics; hence ‘They have sold me to him’ is grammatical.

A shadow is cast over this explanation by the fact that the PCC is attested in a range of typologically and genetically diverse languages which have overt third person clitics, or lack the one-clitic-per-host restriction on auxiliaries, and/or lack the requirement that dative and absolute clitics have a feature that must be checked in T.

- (31) a. Agnès me la présentera. (1>3) French  
 Agnès 1sg.Rec 3sg.F.Thm Present.Fut.3Sg  
 ‘Agnès will introduce her to me.’
- b. \*Agnès me lui présentera. (3>1) French  
 Agnès 1sg.Thm 3sg.F.Rec present.Fut.3Sg  
 ‘Agnès will introduce me to her.’
- c. \*Tha su me sistisune. Greek  
 Fut GEN.2SG ACC.1SG introduce-3PL  
 ‘They will introduce me to you.’

Indeed, the PCC is documented in languages which lack auxiliaries altogether (Haspelmath 2004, Rezac 2011). It would be strange if a constraint as general as the PCC were grounded in Basque in a set of constraints that are specific to that language, some of them idiosyncratic and typologically uncommon.

A&N are aware of this concern and strive to allay it by questioning the cross-linguistic unity of PCC effects, claiming that they are so heterogeneous that the PCC cannot be reduced to a single constraint. The parochiality of their Basque-internal account would then not be so objectionable.

A&N's argument seems to rest on their underlying assumption that the inventory of constraints is small and uniform, and that cross-linguistic variation is located in the repair processes that implement them. This is almost certainly incorrect. It is clear that the scope of constraints can vary across languages in ways that cannot be ascribed just to differences in the available repairs. For example, complex consonant clusters are universally marked, but different languages restrict them to varying extents (onsets, codas, 2- and 3-consonant clusters, etc.). In fact, from the OT perspective, most constraints (for all we know, all of them) come in families that form stringency hierarchies, which are variously interranged with other Markedness and Faithfulness constraints to yield a variety of complex patterns, all the way from inviolable core constraints of a language down to subtle effects detectable in its margins (TETU, Emergence of the Unmarked).

A second argument against A&N's attempt to reduce the PCC to Basque cliticization constraints, or for that matter against any sort of morphological filter account, is that in most languages, including some forms of Basque, it is a constraint on argument structure or on Th-role combinations, not on the distribution of morphosyntactic case. Haspelmath's (2004) descriptive formulation makes this clear.

- (32) PERSON-CASE CONSTRAINT: Combinations of bound pronouns with the roles Recipient and Theme are disfavored if the Theme pronoun is first or second person and the Recipient pronoun is third person.

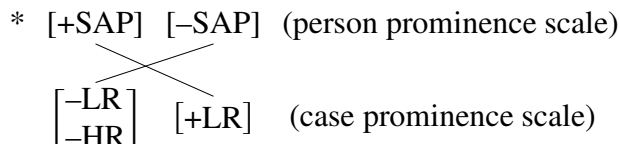
This formulation of the PCC applies to Recipient/Experiencer datives (to applicative datives, in A&N's terms), but not to directional/locative datives. Sentences like "I approached the boat (Dat.\*)" are indeed reportedly OK in some dialects of Basque including the standard Batua dialect (p. 75, see also Rezac 2007, Preminger 2012). They are unacceptable in Ondarru and many other Biscayan dialects (p. 75). For A&N the first group of dialects, where the PCC restricts applicative datives but not directional/locative datives, are a complication. They posit two different types of dative case, "dative-P" and "dative-AppI" and a functional category H ("Host") intermediate between C and T which can host "dative-P". By stipulation, T and C don't attract "dative-P" clitics, so they must go to H. Since the functional category H is otherwise unmotivated, and "dative-P" as a case-theoretic category is also unmotivated, this is not a compelling treatment.

The lexical analysis invites a different view of the PCC, which unifies the two versions of it. It attributes PCC effects to a misalignment between the thematic/argument structure hierarchy and the person hierarchy (Rosen 1990, Aissen 1999, Haspelmath 2004). Under the case theory outlined in section 3, both dialect groups have the same constraint prohibiting a misalignment of person and case prominence. They differ in whether it applies to abstract Case or to morphosyntactic case. Abstract Dative case (the Indirect Object relation, borne by arguments that are assigned the Recipient/Experiencer role) and morphosyntactic dative case are both [-HR,-LR], though adverbials (like all adjuncts) can bear only morphosyntactic case. Dative outranks Accusative on the case hierarchy ([-LR] > [+LR]), and [+Speech Act Participant] outranks [-Speech Act Participant]. The constraint prohibits a specific mismatch between these two prominence scales.<sup>16</sup>

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<sup>16</sup>The PCC has stronger and weaker variants. In some languages it requires that Datives be higher than Accusatives on the person hierarchy, in others only that it not be lower. See Haspelmath 2004 for these variations on the PCC theme.

(33) The Person-Case Constraint (PPC)



In standard Basque, the PCC applies at the level of abstract Case. In Ondarru, it applies at the level of morphosyntactic case, in which case it includes directional/locative datives.

## 8 Absolutive Promotion

The PCC also predicts that psych-predicates with a dative Experiencer may not have 1 or 2 person absolutive objects. In some dialects, the auxiliary then contains only a dative person clitic. Since dative clitics must be suffixed, NONINITIALITY is satisfied by a default prefix *ga-*. Other dialects, including Ondarru, resolve the PCC violation by allowing the absolutive in the auxiliary to be “promoted” to ergative. The sentences in (34) illustrate this pattern.

- (34) a. Ni-ri Jon-∅ ondo jaus-ten g -a -t (>gasta)  
me-DAT Jon-ABS well fall-IMP ∅ -T -CL.D.1.SG  
'I like Jon.' (Ondarru)
- b. Ni-ri su-∅/k<sub>i</sub> ondo jaus-te d -o -t -su<sub>i</sub>.  
me-DAT you(SG)-ABS/ERG<sub>i</sub> well fall-IMP PRS.3.SG -T -CL.D.1.SG -CL.E.2.SG<sub>i</sub>  
(>stasu)  
  
'I like you(Sg).'
- c. Jon-ei gu-∅/k<sub>i</sub> es d -o -tz -gu<sub>i</sub> gusta-ten (>dotzau)  
Jon-DAT we-ABS/ERG not PRS.3.SG -T -DAT.3.SG -CL.E.1.PL like-IMP  
  
'Jon doesn't like us.'

The liker (Experiencer) argument is indexed by the dative clitic in its usual position. A third person “likee” is absolutive (see (34a)), but a first or second person absolutive is promoted to ergative (*-su*, *-gu* in (34b,c)), and the Aux head then does not have the absolutive form (*-o-*).

A&N posit an ABSOLUTIVE PROMOTION repair process that moves the internal argument to the specifier of vP to acquire ergative case; its clitic (like other ergative clitics) then moves from there to C. This intermediate landing site explains why the PCC is repaired by promoting the absolutive rather than the dative: the specifier of little v requires an ergative KP, which is inconsistent with dative case, but consistent with the absolutive argument because it does not yet have case (p. 71).

Such an account is not available in the lexicalist theory I am assuming. Some other explanation is needed for why PCC violations with psych verbs are resolved by changing the case of the object (Theme), rather the dative, or by paraphrasing the sentence, as in the case of other PCC violations.

I offer a conjecture based on the observation that a class of psych-verbs have three semantic roles: Experiencer, Cause, and Theme (Target of Emotion, Pesetsky 1995). Some semantically trivalent verbs assign all three roles to distinct syntactic arguments, others are syntactically bivalent. English has both these types, in addition to a type that is bivalent semantically and syntactically (35a).<sup>17</sup>

- (35) a. *fear*:  $\lambda y \lambda x [x \text{ FEAR } y]$  (Experiencer > Theme)  
 like, admire, detest, despise, enjoy, hate, honor, love, esteem
- b. *frighten*:  $\lambda x \lambda y [x \text{ CAUSE } [y \text{ FEAR } z]]$  (Cause > Experiencer)  
 embarrass, overwhelm, thrill, encourage, inspire, cheer up, embolden
- c. *interest*:  $\lambda z \lambda y \lambda x [x \text{ CAUSE } [y \text{ BE-INTERESTED-IN } z]]$  (Cause > Experiencer > Theme)  
 interest, disenchant, excite, disgust, tire, attract, piss off, encourage, impress
- d. *please*:  $\lambda z \lambda y \lambda x [x \text{ CAUSE } [y \text{ LIKE } x]]$  (Cause > Experiencer > Theme)  
 thrill, amuse, fascinate, intrigue, engross, offend, bore

For example, *The novel frightened John* entails (36a) but not (36b), whereas *John feared the novel* has the opposite entailment.<sup>18</sup>

- (36) a. The novel caused John to be afraid (of something).  
 b. John was afraid of the novel.

Further evidence comes from co-occurring adverbials.

- (37) a. John fears/likes/admires tigers for their strength. (*Tigers* is a Theme)  
 b. Tigers frighten/amuse/impress John \*for their strength. (*Tigers* is a Cause)

If we assume that *for* here marks a Cause (as in *jumped for joy*, *can't sleep for the noise*), we can understand its unavailability in (37b) on the basis of the constraint that a single event can have only one Cause.

These diagnostics show that predicates of type (35c) have both a Cause role and a Theme role.

- (38) a. Jane interested Bill in her ideas.  
 b. The experience disenchanted Sue with the project.

The Cause and Theme roles can fuse, and in trivalent psych verbs of type (35c), such as *please*, they *must* fuse. Their subject bears both roles at once but only one of them can be expressed at a time. So *The novel pleased John* entails both (39a) and (39b) (in contrast to (36)).

<sup>17</sup>Many verbs, such as *impress*, *worry*, *amuse*, *anger*, *sadden*, *terrify*, *depress*, *excite*, *annoy* belong to more than one of these classes, and the salient interpretations depend on animacy, stative vs. eventive meaning and other factors.

<sup>18</sup>Predicates of the *frighten* class have the thing-feared as an implicit semantic variable which may be contextually interpreted, but is not a syntactically accessible theta-role. From *John frightened Fred* we can infer that he made (or intended to make) Fred fear something, but we cannot specify that something syntactically by an object or prepositional phrase. It might be something John said or did, something Fred thought he might do or might happen to him, etc.

- (39) a. The novel caused John to be pleased. (Cause)  
 b. John was pleased with the novel. (Theme)

Since there can be only one Cause and one Theme, an additional oblique cause and Theme is unavailable (in contrast to (38)):

- (40) a. The novel pleased me (\*for its depiction of Finland).  
 b. The novel pleased me (\*with/\*at the author).

Donohue (2004, Ch. 4) argues that Basque verbs like *gustatu* are trivalent semantically with fusion of the Cause and Theme arguments, like English *please*.

How is an argument valued that fuses the Cause role (the highest role — abstract case features [+HR, –LR]) and the Theme role (the lowest role — abstract case features [–HR, +LR])? Does it syntactically outrank the Experiencer (abstract case [–LR, –HR]), or is it outranked by it? In Basque the fused role normally counts as [+LR] for purposes of case marking, so that its bearer is a grammatical object with absolutive case.<sup>19</sup> However, if that argument is first or second person, this would violate the PCC, which prohibits the co-occurrence of a dative (–LR, –HR) with a first and second person absolutive (+LR). In deference to the PCC, the fused argument role is valued as abstract Ergative (–LR) instead, which receives ergative morphosyntactic case (–LR).

If this analysis is correct, there is no need to treat Absolutive Promotion in Basque as a case-change process, still less as a movement of clitics to a non-canonical landing site. The Cause role, normally recessive in the syntax, is selected as the basis for case assignment and agreement in order to accommodate the PCC restriction (see fn. 19 for possible other manifestations outside PCC contexts). This explains why the PCC does not cause a gap in the paradigm in this particular class of verbs. It may also help explain why the Ergative in the auxiliary is compatible with an absolutive nominal external argument.<sup>20</sup>

## 9 Participant Dissimilation

Recall from (1) that in Ondarru second person ergative morphemes can't occur with first person plural morphemes in the same auxiliary. In Zamudio, any second person morpheme excludes a first person plural dative or ergative. A PARTICIPANT DISSIMILATION constraint in A&N's Feature Markedness subcomponent of the morphology prohibits these configurations, and the constraint is enforced by deletion of the first plural (211 ff.).<sup>21</sup> Thus, the Ondarru auxiliary *do-su* 'Present-2.Sg.' is multiply ambiguous, because it neutralizes several combinations of first person plural and

<sup>19</sup> Likewise accusative in English, French, German, Italian etc. However, it is not simply a regular object in any of these languages. Its Cause role (+HR) is manifested as a logical subject in anaphora and control.

<sup>20</sup> According to A&N the absolutive is the result of a more general optional deletion of the ergative ending stigmatized as Spanish-influenced usage (p. 72). But they cite an observation by Rezac that for some speakers ergative endings are deleted only in third person arguments, a restriction not replicated in the absolutive promotion pattern. This asymmetry is reminiscent of Hanging Topic Left Dislocation (*nominativus pendens*), as in German *Mein Bruder, den hat man vergessen* versus *?Ich, mich hat man vergessen* (Grohmann 2000). If the unexpected Basque absolutives were default case in left dislocation structures, they should always be sentence-initial, and replace datives as well as ergatives.

<sup>21</sup> A&N account for the retention of the first person singular by impoverishing away its [+participant] feature before the deletion has a chance to apply.

second person. (41) shows how three inputs converge on the same form, in which ‘we’ remains unexpressed and the auxiliary registers only ‘you’:

- (41) a. Su-k            gu-∅    ikus-i    **d-o-su**            (Present + Abs.1Pl + Erg.2Sg)  
              you.Sg-ERG us-ABS see-PRF Present-T-2SG (missing Abs.1Pl)  
              ‘You(Sg) have seen us.’
- b. Su-k            gu-ri    emo-n    **d-o-su**            (Present + Dat.1Pl + Erg.2Sg)  
              you.Sg-ERG us-DAT give-Prf Present-T-2SG (missing Dat.1Pl)  
              ‘You(Sg) have given it to us.’
- c. Gu-ri    su-∅/su-k                            gusta-te    **d-o-su**            (>                            su)  
              We-DAT you.Sg.ABS/you.SG.ERG like-PERF PRES-T-2SG (missing Dat.1Pl.)  
              (Present + Erg.2Sg + Dat.1Pl)

‘We like you(Sg.)’ (With ergative from “Absolutive Promotion”, A&N 348.)

Descriptively:

(42) PARTICIPANT DISSIMILATION

- |   |   |
|---|---|
| <p>a.    *<math>\begin{bmatrix} +\text{Speaker} \\ +\text{Plural} \end{bmatrix}</math>    <math>\begin{bmatrix} +\text{SAP} \end{bmatrix}</math></p> <p style="margin-left: 40px;">                              </p> <p style="margin-left: 40px;"><math>\begin{bmatrix} -\text{HR} \end{bmatrix}</math>                 <math>\begin{bmatrix} +\text{HR} \end{bmatrix}</math></p> <p style="margin-left: 40px;">(Ondarru)</p> | <p>b.    *<math>\begin{bmatrix} +\text{Speaker} \\ +\text{Plural} \end{bmatrix}</math>    <math>\begin{bmatrix} +\text{SAP} \end{bmatrix}</math></p> <p style="margin-left: 40px;">                              </p> <p style="margin-left: 40px;"><math>\begin{bmatrix} -\text{LR} \end{bmatrix}</math></p> <p style="margin-left: 40px;">(Zamudio)</p> |
|---|---|

For Ondarru the constraint could be formulated in a less arbitrary way as an instance of the constraint family that prohibits misalignment between person prominence and case prominence (1 > 2 but [-HR] < [+HR]). The Zamudio version does not work this way, so at least that dialect requires something like (42b).

The repair to violations of Participant Dissimilation is determined by faithfulness constraints, in the case of Ondarru and Zamudio MAX-2PERSON.

(43) MAX-2P

A second person must be realized.

These constraints jointly do the work of A&N’s obliteration rule, as shown in tableau (44) for (41c).

- (44) dosu ~~we-DAT~~ (like) you-Abs’ (Present)



			PARTDISS	MAX-2P	NONINITIALITY	ENCLISIS	CASEALIGNMENT	MAXTENSE
Present + Abs.2Sg + Dat.1Pl → <i>d-o-su</i>								
1a.	* <i>s-a-tz+ku</i>	2Sg-T-Dat+1Pl	*			*		*
1b.	* <i>a-tz+ku</i>	T-Dat+1Pl		*	*			*
1c.	* <i>a-su</i>	T-2Sg			*			*
1d.	<i>d-o-su</i>	Pres-T-2Sg				*		
1e.	* <i>s-a</i>	2Sg-T				*		*
1f.	* <i>tz+ku-a</i>	Dat+1Pl-T		*		**		*
1g.	* <i>d-su-a</i>	Pres-2Sg-T				**		
1h.	* <i>d-o-tz+ku-su</i>	Pres-T-Dat+1Pl-2Sg	*			*	*	
1i.	* <i>d-o-tz+ku</i>	Pres-T-Dat+1Pl		*		*		

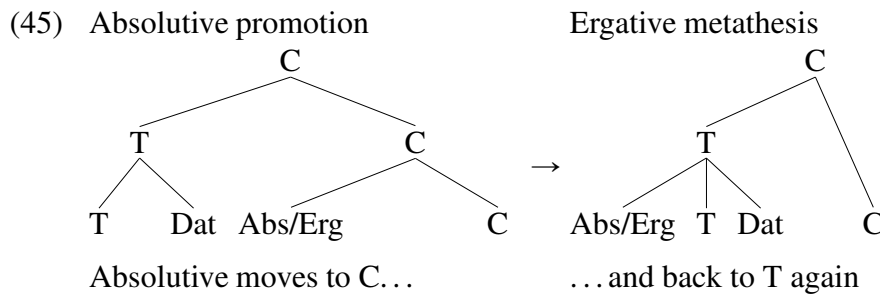
## 10 Opacity

Recall from section 8 that A&N posit a syntactic process of ABSOLUTE PROMOTION, which turns absolutes into ergatives in order to repair violations of the PCC, which applies in psych-verbs to ban first or second person absolute Themes with dative Experiencers. Absolute Promotion can feed morphological processes which then obliterate the context that triggered it, rendering it opaque. An example of such opacity is the interaction between Absolute Promotion and Participant Dissimilation (A&N 346-349). In (41c), the 2Sg ergative clitic *-su* in *d-o-su* is derived from an absolute by Absolute Promotion (in which case the corresponding pronoun may be ergative or absolute). In response to the PCC, the 1Pl. dative Experiencer argument triggers the promotion of the 2Sg Theme from absolute to ergative, and the resulting ergative then causes the dative clitic in the auxiliary to be deleted by Participant Deletion (section 9). The pronoun argument *gu-ri* remains dative, but in A&N's analysis, it is not involved in either Absolute Promotion or Participant Deletion: "The only reason that Absolute Promotion occurs is because there is competition for the clitic host position of T with the dative. The triggering context for Absolute Promotion is a dative clitic, but due to the syntactic repair that is chosen, a subsequent context is created in which the dative is deleted. The result is apparent overapplication of Absolute Promotion, which normally only occurs in the presence of a dative clitic argument, but in this case the dative is not found on the surface." As they make clear, Absolute Promotion must be a syntactic process (in module A of (16)), whereas Participant Deletion must be a morphological process (in module C of (16)). Therefore the opaque counterbleeding interaction between these processes is predicted on their theory.

In the alternative I have put forward, Absolute Promotion is syntactic in the sense that the PCC dictates the choice of abstract Case of the Experiencer argument in psych-verbs. The PCC is not triggered by competition for the single slot allotted to clitics in T, but bans misalignment of two prominence scales, the thematic hierarchy (the abstract Case hierarchy in terms of Lexical

Decomposition Grammar) and the person hierarchy. Absolutive Promotion is not clitic movement to C via vP, but selection of the Cause role of *please*-type predicates in argument structure. Participant Deletion in the auxiliary is morphological, and implemented by grammatical mechanisms that conform to lexicalist principles. Apart from these differences in execution, the interaction between the two processes is explained by the separation of modules as in A&N. Because the PCC constrains argument structure, it is visible both to the syntax and to the morphology, and in fact it is accessed independently by them, as shown by the fact that in psych-verb cases like (41c) the syntactic argument is optionally ergative or absolutive, while the clitic is obligatorily ergative.

In the DM analysis the interaction of Absolutive Promotion and Ergative Metathesis leads to a “ping-pong” (Duke of York) derivation, which A&N consider an argument for DM. The linearization rule (4b) requires a dative clitic to be in T. The one-clitic-per-head constraint then precludes T from hosting an absolutive (case (20c)). Absolutive Promotion of the absolutive into an ergative allows it to move to C. The vacant pre-T slot still violates NONINITIALITY. This is repaired as before in the morphology (module C of (16)) by Ergative Metathesis.



The examples in (46) illustrate this configuration.

- (46) a. Liburu emon **netzan** ‘I gave the book to him’ (Ondarru, A&N 16)
- b. Ni(k) Jon-ei gusta-ten **netzan** ‘John used to like me’ (A&N 341)
- c. n- eu -tz-∅ -an  
 1Sg- T -3SgDat -Past  
 ‘I -ed (to) him (it)’

The lexical analysis again derives these cases directly. Dative clitics are bimorphemic, of the form Prep+Pronoun (see (2)), e.g. *-st* = /-tz-t/, *-tzu* = /-tz-su/, *-sku* = /-tz-gu/, *-tz* = /-tz-∅/. Putting them before T would incur a violation of ENCLISIS, so the promoted Ergative goes there.

(47)

	NONINIT	ENCLISIS	CASEALIGNMENT
Past (+ Abs.3Sg.) + Dat+3Sg + Erg.1Sg → <i>n-e-tz-an</i>			
1a. * <i>e-tz+∅-t-an</i> T-Dat+3Sg-Erg1Sg-Past	*		
1b. * <i>tz+∅-e-t-an</i> Dat+3Sg-T-Erg1Sg-Past		**	
1c. * <i>n-tz+∅-e-an</i> Erg1Sg-Dat+3Sg-T-Past		***	*
1d. ☞ <i>n-e-tz+∅-an</i> Erg1Sg-T-Dat+3Sg-Past		*	*

A&N claim that the syntactic ping-pong derivation is independently supported by the distribution of the third person singular dative clitic allomorph *-tz* in Ondarru. They propose that it occurs in auxiliaries that are marked with the feature [+have], which is inserted in T in the context of an ergative clitic, which sits in C (p. 144); otherwise, the allomorph is *-ko*. In their derivation, the promoted clitic in C triggers the *-tz*- allomorph of the dative, and it remains after Ergative Metathesis removes the clitic from C (counterbleeding). In contrast, an auxiliary that has no clitic in C *at any stage in the derivation* has the third person dative allomorph *-ko-*, as in the psych-verb configuration (20c), where a third person absolutive, not being represented by a clitic, does not undergo Absolutive Promotion.

- (48) Jon-ei ardau-∅ gusta -ten g -a -ko.  
 Jon-DAT wine-ABS.SG like -IMPF ∅ -T DAT.3SG  
 ‘Jon likes wine.’ (Ondarru)

But the generalization can equally well be stated in another way: the dative has the allomorph *-ko-* if it is the sole overt case/agreement morpheme in the auxiliary, otherwise it is *-tz-*. The auxiliary *netzan* has the *-tz-* dative allomorph because it contains a 1Sg. clitic. The prohibition of the *ko* dative in the presence of another clitic can be seen as another instance of the family of syntagmatic markedness constraints on the co-occurrence of clitics in the auxiliary treated in A&N’s second subcomponent of the morphology (C, Feature Markedness).

The upshot is that opacity in A&N’s analysis arises only through rule interaction between the big modules, syntax and morphology (“postsyntax”), not *within* the morphology. Moreover, the conditions under which syntactic processes operate can be masked by the effects of morphological processes, never the other way round. All crucial ordering relations within the morphology are instances of feeding and bleeding. Exponence Conversion feeds the rest of the morphology, Participant Dissimilation feeds Ergative Metathesis (341, 344), and Participant Dissimilation bleeds Ergative Metathesis and Root Reduplication (346, 347). None of these interactions result in opacity.

This generalization does not follow from anything in DM’s architecture. Since the submodules (B)-(F) within (16) are ordered, there is no reason why they could not interact opaquely. This under-utilization of rule ordering is another indication of DM’s excess theoretical power.

The observed interactions and limitations to opacity are motivated in OT-based LM. Both syntax and morphology access argument structure. They can access different bits of argument structure. Under the analysis proposed here, this situation is instantiated in Absolutive Promotion, where there may be a case disparity between the nominal argument and the clitic that corresponds to it in the auxiliary, as in (41c), allowed by the argument structure of psych-predicates. The reason the morphological constraints on the auxiliary are transparent is that the auxiliary is built in a single morphological stratum, the word level, at least as far as the data considered here indicates.<sup>22</sup>

## 11 Reconstructing the ‘word’

In lexicalist theories, the lexicon and morphology deliver words to the syntax, and the syntax may augment them by cliticization and perhaps other processes. In non-lexicalist theories, words are defined on *syntactic* structures. A&N have two different kinds of words, M-WORD and X<sup>0max</sup>.

<sup>22</sup>Aside from the level 1 decomposition of the datives in fn. (5).

- (49) a. M-WORD: a 0-level node that is not dominated by any other 0-level node.  
 b.  $X^{0max}$ : a 0-projection of terminal X that is not dominated by a 0-projection of X.

The M-word is equivalent to Embick & Noyer’s 2001 M(aximal) Word, to Lexical Phonology’s postlexical word, and to prosodic phonology’s clitic group. The  $X^{0max}$  word has no counterpart in LM. A word contains as many  $X^{0max}$  words as it has terminal X heads. In Basque, the only  $X^{0max}$  that figures in A&N’s analysis is  $T^{0max}$ , which is the domain of morpheme ordering, by the previously mentioned NONINITIALITY and PENINITIALITY constraints:

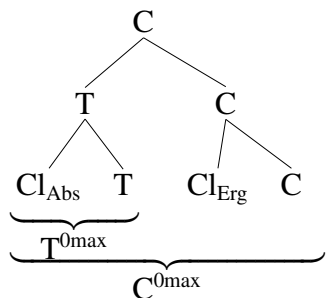
- (50) a. T-PENINITIALITY: Only one morpheme may precede terminal T within  $T^{0max}$ .  
 b. T-NONINITIALITY: Terminal T cannot be leftmost within  $T^{0max}$ .

The reason (50) is defined on  $T^{0max}$  words rather than on M-words is that it doesn’t see the modal particles procliticized to the auxiliary, such as evidential *ei-*. For purposes of these constraints, the prosodic word *ei-d-a-tor* has *-a-* in second position, not in third position.

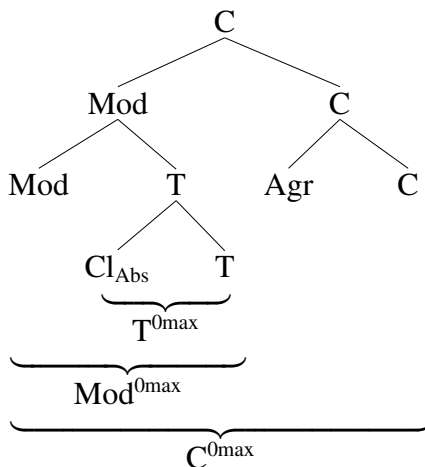
- (51) Jon-  $\emptyset$  ei- d -a -tor.  
 Jon -ABS EVID PRES -T -come  
 ‘Jon seems to be coming.’ (Ondarru)

Thus, *nasu* in (4b) will have the word analysis in (52a), and *ei-dator* in (51) will have the word analysis in (52b).

(52) a.



b.



The proclitic *ei-* in (51) is part of the auxiliary M-word by definition (49a) and of  $Mod^{0max}$  and  $C^{0max}$  by definition (49b), but it is not in  $T^{0max}$ . So, if the ordering constraints in (50) are defined on the auxiliary  $T^{0max}$ , they will apply as desired.

A lexicalist approach does not define words derivatively, and it does not need so many different “ $X^{0max}$  words”. The morphology outputs LEXICAL WORDS, which are the domain of lexical

constraints like (6), including those that fix the order of morphemes. Modal particles are generated in the syntax and postlexically procliticize to the lexical words that they scope over to form POSTLEXICAL WORDS. No other kinds of words are required.

Postlexical words ( $C^{0max}$ ) are referred to by Basque's ban on finite-verb initial sentences, which prohibits (53b) as a word order variant of (51).

- (53) a. CP-NONINITIALITY:  $C^{0max}$  cannot be leftmost within CP (A&N 326).  
 b. \*Ei- d -a -tor Jon-  $\emptyset$ .  
 EVID PRES- T -come Jon -ABS  
 'Jon seems to be coming.'

A&N (329) draw attention to the parallelism between sentence-level CP-NonInitiality and T-NonInitiality. They suggest that the latter is historically a generalization of the former, and propose to capture the relationship between them by (54).

(54) *Condition on edge-related constraints*

Given an edge constraint C on a 0-level node N regulating the distance of N from the edge of some domain D:

- a. If N is an M-word, then D is the maximal projection of N (XP).  
 b. Otherwise, N is a terminal, and D is the maximal 0-level projection of N ( $X^{0max}$ ).

The intended effect of conditions (54a) and (54b) comes for free in lexicalism, on the assumption that auxiliaries, such as *nasu*, are lexical words formed in the morphology, e.g. (55a), and particles like *ei* are procliticized to them in the syntax to form postlexical words (AKA clitic groups), as in (55b). Lexical words are subject to morphological constraints and lexical phonology, and postlexical words are subject to syntactic and postlexical phonological constraints.

- (55) a. Lexical word: [ [ n- a ]<sub>T</sub> -su ]<sub>T</sub>  
 b. Postlexical word: [ nasu ]<sub>T</sub>  $\xrightarrow{\text{cliticization}}$  [ ei [ nasu ]<sub>T</sub> ]<sub>T</sub>

Under this lexical analysis, the two constraints (54a) and (54b) are not just historically related: they are special cases of a single constraint.

(56) NONINITIALITY:  $T_0$  is not initial in a constituent that it heads.

- a. Lexical instantiation:  $T_0$  (the auxiliary morpheme) can't be initial in its word.  
 b. Syntactic instantiation:  $T_0$  (the auxiliary word) can't be initial in its clause.

As far as I can tell, DM provides no counterpart to the lexical word (the word minus its syntactically added pro- and enclitics). For example, (52b) says that *dator* and *nasu* in (51), (55) are not words of any kind, while-words *ei da-*, *ei na-* are words (of the  $\text{Mod}^{0max}$  type). This is the opposite of what a lexicalist analysis predicts. Since the lexical word is attested as a domain of prosodic

phonology and word-level phonological processes in many languages, phonology supports the lexicalist concept of wordhood over the DM one.<sup>23</sup>

It appears that DM's definition of "word" in terms of syntactic maximal projections both undergenerates and overgenerates, and that a proper characterization of wordhood must be based on morphology.

## 12 Problems with the constraints-and-repair model

A&N's DM analysis suffers from the well-known duplication problem that besets all theories that rely on both constraints and rules. The intended division of labor is that constraints express the generalizations, while the rules perform the actual operations that enforce them. But they largely duplicate each other and the theory provides no principled formal link between them. As A&N themselves note in connection with Plural Clitic Impoverishment, "the structural description of the rule matches the corresponding markedness constraint that triggers the rule" (p. 226). But once the constraints are properly formulated and ranked, the rules are unnecessary. As we saw, the NON-INITIALITY and ENCLISIS constraints suffice to ensure that the Aux head is preceded by exactly one morpheme; the DM analysis not only has similar (albeit more complex) constraints, but in addition has rules that move clitics around, often many times, to satisfy them. The NONINITIALITY and PARTICIPANT DISSIMILATION constraints could be erased from the grammar without affecting its output. The rules that implement them would remain unchanged in their formulation, in their application, and in the resulting outputs.<sup>24</sup> The lexical analysis has just the constraints and gets it right in one go: when the markedness constraint prohibits the two affixes from appearing together, the Faithfulness constraints determine which one survives. Thus, the analysis mobilizes the constraints themselves to derive the correct outputs without any redundancy or duplication.

The problem of formally relating constraints and rules is not new. It has been thoroughly aired in phonology, first in the 1960's in connection with morpheme structure constraints (Stanley 1967), again in the 1970's a propos conspiracies (Kisseberth and Kenstowicz 1977), and re-emerged in the 1980's in the debate around constraint-and-repair approaches (Paradis 1987). It remained unsolved each time, a fact which played a role in the rapid turn to pure constraint-based theories such as OT in the 1990's.

Apart from duplication, the combination of rules and constraints incurs additional complexity due to the need to choreograph their interaction. A&N distinguish *triggering* constraints, which define configurations that must be repaired by some rule when they arise, from *blocking* constraints, which configurations that are not allowed to arise at all. As is well known, OT straightforwardly reduces this functionality to constraint interaction.

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<sup>23</sup>DM wordhood is not straightforward even in Basque. A&N point out that "in careful, slow speech, modal particles [such as *ei*] are pronounced as belonging to a prosodic word separate from the auxiliary" (p. 335, fn. 81) — prima facie evidence for (55b). A&N's explanation is that the modal particles are *written* as separate words; they note that conditional *ba*, which belongs to the same class of particles and is written as one word with the auxiliary, is "typically included with the auxiliary in one prosodic word in careful speech". On the other hand, the reason that auxiliaries are written separately from particles like *ei* must be that the originators and users of the writing system have analyzed them as words. Clues to the structure might come from the pattern of variation in phrasing, and in optional word-level processes such as flapping of /d/ and intervocalic Voiced Stop Deletion, which should generate variant pronunciations such as /ei dosu/ → [eirosu], [eisu] and /ba dosu/ → [barosu], [basu] (A&N 179, Hualde et al. 1994: 34).

<sup>24</sup>Tellingly, A&N use "Participant Dissimilation" both for the constraint that induces the obliteration and impoverishment operations, and as a cover term for those operations themselves.

- (57)
- $P \rightarrow Q$  is triggered in the context  $X\_Y$  if  $*XPY \gg *Q$ ,
  - $P \rightarrow Q$  is blocked in the context  $X\_Y$  if  $*XQY \gg *P$ .

### 13 Conclusion

A&N's analysis is exemplary in its ingenuity and thoroughness, and offers a wealth of insights about Basque morphology. I doubt that it could be much improved within the confines of DM. But if this is close to the best that DM can do, what can we conclude about DM? A&N's analysis does not deliver the "transparent interface between syntax and morphology" that was claimed for DM by Embick & Noyer (2007: 302). If my diagnosis is correct, much of the complexity of A&N's analysis is an artifact of the DM framework itself, and so is the loss of important generalizations that lexical approaches reveal.

Arguably it is lexicalism that offers a more transparent interface between syntax and morphology. LM certainly has interface problems of its own, and no doubt future research will reveal many more. But a framework in which morphology generates phonologically and semantically interpreted words and syntax combines them into phonologically and semantically interpreted sentences requires less interface machinery. This allows formally cleaner and more restrictive theories of morphology and its interface with syntax, which in turn deliver simpler and more perspicuous analyses of morphological systems. This conclusion affirms, and indeed strengthens, A&N's theoretical point that the effect and interaction of syntactic and morphological operations is constrained in a principled way by the formal character of the representations to which they apply.

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