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Adjunction as categorization: On the syntactic quiriness of word-level modification*

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Abstract: In Minimalism, modification is standardly modeled by adjunction, defined as Pair Merge, but there are alternative approaches to modification and adjunction too. This paper explores a mode of adjunction that is native to the word domain in a single-engine framework like Distributed Morphology. It is not planned but a byproduct of root categorization, more exactly of a co-categorization relation between a defectively categorized modifier and a normally categorized base. This mode of adjunction locks the base or its head in situ without turning the whole construction into an island. Empirically, this is manifested as a quirky phenomenon of head immobility. I explore this scenario with two case studies, respectively on German immobile verbs and Hungarian reduplicated particle verbs, and argue that their quirky behaviors have the same cause: the categorization-based mode of adjunction. The theory in this paper, if on the right track, lends further support to a distinction between word- and phrase-level syntax even in a single-engine framework.

Keywords: adjunction, categorization, Distributed Morphology, immobility, particle verb, compound verb, German, Hungarian

1. Introduction¹

In generative syntax, syntactic modification is standardly modeled by adjunction, which in the Minimalist Program is defined as Pair Merge (Chomsky 2000). However, neither is adjunction the only way to model modification, nor is (Chomskyan) Pair Merge the only way to define adjunction. Several alternative approaches exist in the literature. Thus, Cinque (1999, 2010) treats adverbs and adjectives as specifiers of functional projections. Hornstein and Nunes (2008) define adjunction by unlabeled concatenation, and Oseki (2015) makes a similar proposal in terms of Set Merge. Meanwhile, Rubin (2003) rethinks Pair Merge and triggers it by a functional head Mod. These alternative approaches are not free from problems (Song 2019: 55), but they are insightful explorations showing that the

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¹ Grammatical labels: ACC=accusative, COMP=comparative, FOC=focus, INF=infinitive, ITE=iterative, NEG=negative, PRF=perfective, PTCP=participle, REFL=reflexive.

mode of adjunction is an issue that can be open to further discussion. This paper presents an exploration in this direction.

Specifically, while the above-mentioned studies all focus on classical adjunction in canonical phrasal syntax, this paper focuses on word-level adjunction. In branches of generative syntax adopting the “single engine hypothesis,” like Distributed Morphology (DM; Halle and Marantz 1993), word formation is treated as a syntactic process.

- (1) **The single engine hypothesis** (as formulated in McGinnis-Archibald 2016: 390)
A single generative engine governs sound/meaning correspondences, making no distinction between word-level and phrase-level syntax.

However, this formulation is too strong, as the word domain is still a special theoretical domain even in DM. Thus, the word domain, but not the canonical phrasal domain, relies on the root-categorization operation and has “obligatory idiomaticity” (Panagiotidis 2014). Besides, it is in the word domain that interpretable categorial features like $[iN]/[iV]$ are introduced.

In this paper, I claim that word-level adjunction can also proceed in a special mode—via categorization. Moreover, this special mode of adjunction causes quirky word behavior under certain syntactic conditions. I illustrate this with two cases, respectively from German and Hungarian. In both cases, a verb becomes syntactically immobile after what can be analyzed as a step of adjunction via categorization, as in (2).

- (2) a. German: *tanzen* ‘dance’ (mobile) → *bauch-tanzen* ‘belly-dance’ (immobile)
b. Hungarian: *ki-néz* ‘out-look; look out’ (mobile) → *ki-ki-néz* ‘out-out-look; look out from time to time’ (immobile)

I will define the exact meaning of immobility in later sections. In a nutshell, in both cases, a base verb (simple or complex) is modified in a categorization process. Consequently, it is frozen and cannot move to higher zones anymore, leading to a situation of “ineffability” (den Dikken’s 2003 term).

My analysis of the immobility phenomena, if on the right track, lends further support to a distinction between word- and phrase-level syntax, because the categorization-based mode of adjunction is “native” to the word domain. Therefore, I revise (1) to (3).

- (3) **The single engine hypothesis (revised version)**
A single generative engine governs sound/meaning correspondences. Whatever distinction between word-level and phrase-level syntax can be explained by using formal syntactic tools.

The rest of this paper is organized as follows. In Section 2, I present the new mode of adjunction. In Sections 3–4, I present the two case studies. Section 5 concludes.

2. Adjunction as categorization


In this section, I present my theory of the categorization-based mode of adjunction in the word domain, largely based on Song (2019: 43ff.). I do not claim that word-domain adjunction is always based on categorization. Rather, categorization just makes available an additional adjunction mode.

In DM, the little x categorizers are category-defining heads. This is expressed abstractly in (4a) and more concretely in (4b).

- (4) a. $x \triangleq [iCAT:X]$
 b. $n \triangleq [iCAT:N], v \triangleq [iCAT:V], \dots$

Each categorizer introduces a categorial feature, which by assumption is both interpretable (since it is category-defining) and valued. I leave aside the deeper question of what exactly categorial values are. My proposal is compatible with either an axiomatic approach or an approach where they are given further analysis (e.g., Panagiotidis 2015). Above I have assumed two featural metaproperties: interpretability and valuation. I further assume that these do not have to go together (pace Chomsky 2001)—an idea that has been advocated in a number of places (e.g., Pesetsky and Torrego 2007).

The $[iCAT:X]$ schema in (4) in principle makes available an additional categorizer type defined by an unvalued (but interpretable) categorial feature $[iCAT:_]$. I call this the *defective categorizer* (Cat). Importantly, the categorial feature on Cat is still interpretable once valued, which is what makes Cat a categorizer. But at the same time, since $[iCAT:_]$ is only interpretable upon valuation, its interpretation depends on a normal categorizer via Agree, as in (5).

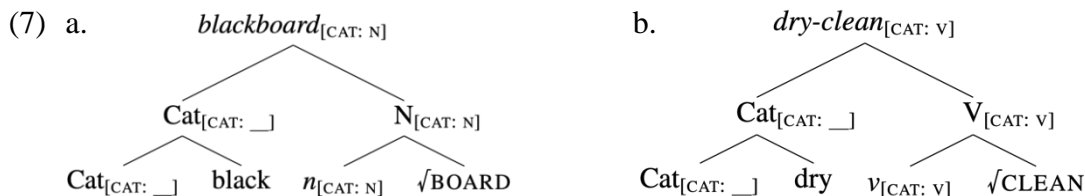
- (5) $[x [{}_{\text{Cat}} \text{Cat } \omega_1] [{}_X x \omega_2]]$


Here, ω_1 and ω_2 represent two roots or root-like chunks. Specifically, ω_1 is a slot for miscellaneous recycled modifiers, which can be simple or prederived. Such units are root-like in that they are inert in the current derivational layer (in the sense of Zwart 2009). The Cat part (hereafter Cat_ω) categorially depends on X, with the two categorial features entering agreement. Then, $[iCAT:X]$ becomes a shared prominent feature and labels the entire structure. Since $[iCAT:X]$ is the only active feature on X, Cat-X and X are featurally identical.² From a structure-building perspective, Cat_ω ends up adjoined to X, which is a head in the traditional sense, and we essentially obtain a modifier-head compound. Cat is usually null, but potential overt realizations include linking elements in compounds, such as *-(e)s-* in German and *-i-* in Japanese.

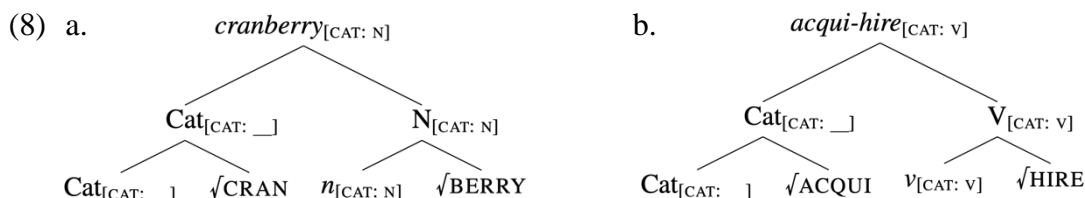
- (6) a. German: *Arbeit-s-zimmer* ‘n. work-LK-room’, *geist-es-krank* ‘a. spirit-LK-ill’
 b. Japanese: *nom-i-mizu* ‘n. drink-LK-water’, *fur-i-mazeru* ‘v. shake-LK-mix’

The Cat-X adjunction is not “planned” but a byproduct of categorization: ω_1 is (re)categorized as a modifier of X. See (7) for an illustration.

² Whether Cat-X and X are also featurally identical to Cat depends on whether Cat carries other, noncategorial formal features. That is, there may be multiple flavors of Cat. Unlike a normal categorizer x , where any additional formal features may be viewed as part of the category-defining value, extra formal features on Cat must be treated separately since the categorial feature on Cat is unvalued.



In (7a), ω_1 is a recycled unit *black* (inert in the current derivational layer), and ω_2 is a root $\sqrt{\text{BOARD}}$. The root is nominalized, while *black* is recategorized by Cat into “part of a bigger noun” upon feature valuation. Crucially, this dependent categorization mode, or *co-categorization*, does not yield the phrase *black board*, and the Cat-introduced *black* is categorially different from the homonymous adjective *black*. According to Panagiotidis (2014), each categorization cycle defines a “domain of obligatory idiomaticity.” In the case of Cat_{ω} , this means that the modificational meaning of the Cat-introduced *black* is idiomatic. Similarly, in (7b), ω_1 is an inert recycled unit *dry*, and ω_2 is a root $\sqrt{\text{CLEAN}}$. The root is verbalized, and *dry* is recategorized into “part of a bigger verb,” modifying V in an idiomatic way. There are also cases where ω_1 has no independent status, as in (8).



The ω_1 units here are roots. Again, the Cat-introduced material is categorially integrated into X, and the meaning of Cat_{ω} , as well as that of Cat-X, is up to idiomatic lexicalization.

The above analysis of modifier-head compounds has several implications (see Song 2019: 66ff.). Here I only highlight one: modifier-head compounds are incompatible with head movement. This is because Cat-X and X are featurally indistinguishable insofar as head movement is concerned, both bearing just a categorial feature [*i*CAT:X]. Thus, when a higher head targets X for movement, it also targets Cat-X. But the latter cannot go through head movement since it is not a head. Consequently, X is blocked by a minimality condition like (9).

(9) **Minimal link condition** (Chomsky 1995: 311)

K attracts α only if there is no β , β closer to K than α , such that K attracts β .

Above I have treated X as a head even though it is routinely decomposed in DM. This is necessary if we want to maintain classical head movement in DM at all. I remain agnostic as to how the head status of the *x*-root combination is derived. It could be due to layered derivation (Zwart 2009). The key assumption here is that the apparent phrasal nature of X is not a problem for classical head movement (e.g., V-to-T). Thus, my prediction is that languages with head movement cannot have productive modifier-head compounding. At least in the verbal domain, this seems true. As Table 1 shows, English compound verbs are consistently translated into French/Spanish by periphrasis.

Table 1: Translations of English compound verbs in French/Spanish (Song 2019: 75)

English	French	Spanish
<i>hand-wash</i>	<i>laver à la main</i> ‘wash by hand’	<i>lavar a mano</i> ‘wash by hand’
<i>dry-clean</i>	<i>nettoyer à sec</i> ‘clean in dry’	<i>limpiar en seco</i> ‘clean in dry’
<i>sleep-walk</i>	<i>marcher en dormant</i> ‘walk sleeping’	<i>caminar dormido</i> ‘walk sleeping’
<i>window-shop</i>	<i>faire du lèche-vitrines</i> ‘do lick-windows’	<i>ir de escaparates</i> ‘go of windows’

Nevertheless, the above formulation of the prediction is too strong. First, we do not want modifier-head compounding to be totally incompatible with head movement, for V-to-*v* movement does happen in English (Chomsky 1995). Second, languages with head movement may not have it in all contexts. For instance, in German verb movement is only required in verb-second contexts. To address the first issue, we can assume that Cat does not have to attach to a plain lexical head but may attach to any qualified categorial value provider—namely, any host with an interpretable and valued categorial feature. On the assumption that the verbal category is essentially the category of eventuality, this provider could be any (sub)eventive head in the *v*P zone. Indeed, I tentatively propose that modifier-head compounding always happens to lexical heads in the traditional sense—nondecomposed, event-structure-complete big Vs in the verbal case. In modern decompositional models, this means that the modifier only gets attached after the verbal root has integrated all eventuality information. This is in line with the observation that modifier-head compounding sometimes changes the head’s argument structure, as in (10).

- (10) a. He can *run*_{intransitive} faster than me.
 b. He can *outrun*_{transitive} me.

In (10), *run* is intransitive, but the “prefix” *out-* makes it transitive. This can be explained if we assume that *out-* is attached at the *v* level.

The second issue above is easier to address. To account for languages with mixed head movement requirements, we can reformulate the prediction as follows:

- (11) Modifier-head compounds can productively exist in languages with no head movement beyond the lexical zone; they can partly exist in languages with mixed head movement; they cannot exist in languages with consistent head movement.

This reformulation is still simplistic, but it suffices for current purposes. See Song (2020) for a more complete discussion. Below, I will demonstrate how the theory in this section can explain the immobility phenomena in German and Hungarian.

3. German immobile verbs

The two commonly recognized complex verb types in German are separable (aka particle) and inseparable (aka prefixed) verbs. See (12) for an illustration.

- (12) a. *Später fährt er zusammen mit seinem Freund weg.*
 later drives he together with his friend away
 ‘Later, he drives away with his friend.’ (DWDS corpora)

- b. *Leider* *verstehe* *ich* *kein* *Französisch*.
 unfortunately understand I no French
 ‘I am afraid I do not understand French.’ (Cambridge Dictionary)

German is a verb-second language, where the finite V must move to C unless the latter is occupied by an overt complementizer. In the case of separable verbs, only the base verb is moved, while the preverbal element (hereafter preverb) is not, as in (12a). By contrast, inseparable verbs are moved as a whole, as in (12b). Below are more example items.

- (13) a. **Separable:** *ab-schicken* ‘off-send; dispatch’, *auf-stehen* ‘up-stand; get up’,
an-kommen ‘on-come; arrive’, *ein-treten* ‘in-step; enter’
 b. **Inseparable:** *be-stehen* ‘BE-stand; exist, pass’, *ent-stehen* ‘ENT-stand; come
 into being’, *ge-stehen* ‘GE-stand; confess’

Inseparable preverbs are often semantically bleached, but they are still clearly attached to the V category. In this sense, inseparable verbs are different from the class of “complex” verbs in (14a), which are simple verbs derived from compound nouns (given in (14b)).

- (14) a. *lang-weile-n* ‘long-while-V; bore’, *hand-habe-n* ‘hand-having-V; handle’,
ohr-feige-n ‘ear-fig-V; slap in the face’, *wett-eifer-n* ‘bet-zeal-V; compete’
 b. *Lang(e)-weile* ‘long-while; boredom’, *Hand-habe* ‘hand-having; handle’,
Ohr-feige ‘ear-fig; slap in the face’, *Wett-eifer* ‘bet-zeal; competitiveness’

The syntactic behavior of these verbs is just that of simple verbs, and they undergo verb movement normally, as in (15).

- (15) a. *Langweilst* *du* *dich* *gerade?*
 bore.2SG you yourself already
 ‘Are you already bored?’
 b. *Kōji* *ohrfeigt* *Yūko* *und* *verbringt* *den* *restlichen* *Abend* *mit* *Ipppei*.
 Kōji slaps Yūko and spends the remaining evening with Ipppei
 ‘Kōji slaps Yūko and spends the rest of the evening with Ipppei.’ (DWDS)

In addition to the three types discussed above, German still has a fourth type of complex verb. Items in this type resemble denominal or particle verbs in makeup but have highly restricted distribution, in that they are syntactically immobile, as in (16).

- (16) a. **Bau-spart* *er* / **Spart* *er* *bau?*
 building-saves he saves he building
 ‘Does he building-save (=save with a building society)?’
 b. *Er* *will* *bau-sparen.* / ... *weil* *er* *bau-spart.*
 he wants building-save because he building-saves
 ‘He wants to building-save. / ... because he building-saves.’
 (adapted from Vikner 2005: 88)

The verb *bau-sparen* cannot be used in verb movement contexts at all, as in (16a). It can neither be moved as a whole (unlike prefixed/denominal verbs) nor be split in two (unlike

particle verbs). Thus, it can only be used in contexts with no verb movement requirement, as in (16b). See (17) for another example.

- (17) a. **Bauch-tanzt Erna noch / *Tanzt Erna noch **bauch**?*
 belly-dances Erna still dances Erna still belly
 ‘Does Erna still belly-dance?’
- b. **Erna **bauch-tanzte** letzten Sommer / ***tanzte** letzten Sommer **bauch**.*
 Erna belly-danced last summer danced last summer belly
 ‘Erna belly-danced last summer.’
- c. *Erna hat sehr viel **bauch-ge-tanzt**.*
 Erna has very much belly-GE-danced.PTCP
 ‘Erna has belly-danced a lot.’ (adapted from Ahlers 2010: 16)

Just like *bau-sparen*, *bauch-tanzen* cannot be moved at all, neither as a whole nor in a split fashion. That said, immobile verbs can be inflected (16b)/(17c), and like separable verbs, their past participles are formed with the infix *-ge-* (17c). The only constraint on their use is that they cannot move. In fact, not just the participle infix *-ge-* but also the infinitive infix *-zu-* can be inserted into immobile verbs.

- (18) a. *Die letzte Gelegenheit, vor den langen Sommerferien*
 the last chance before the long summer.vacation
***bauch-zu-tanzen**, habt ihr am kommenden Dienstag.*
 belly-to-dance have you.PL on.the coming Tuesday
 ‘Your last chance to belly-dance before the long vacation is next Tuesday.’
 (Instagram)
- b. *Du ... brauchst nie mehr Bus zu fahren und nie mehr **bau-zu-sparen**.*
 you need.2SG never more but to ride and never more building-to-save
 ‘You no longer need to take the bus or to building-save.’ (DWDS)

In short, immobile verbs are separable provided they are in situ. By contrast, prefixed or denominal verbs cannot be infixed with *ge/zu* (19).³ See (20) for more immobile verbs.

- (19) a. **ver-ge-standen vs. verstanden, *lang-ge-weilt vs. ge-langweilt*
 b. **ver-zu-stehen vs. zu verstehen, *lang-zu-weilen vs. zu langweilen*
- (20) *bauch-reden* ‘belly-talk; ventriloquize’, *kopf-rechnen* ‘head-calculate; do mental arithmetic’, *berg-steigen* ‘mountain-climb; mountaineer’, *wett-rennen* ‘bet-run; run a race’

Immobile verbs consist of a base verb and a modifier, so they are like compounds. They typically arise by backformation. The verbs in (20) are coined based on the nouns in (21).

- (21) *Bauch-reden* ‘belly-talking; ventriloquism’, *Kopf-rechnen* ‘head-calculating; mental arithmetic’, *Berg-steigen* ‘mountain-climbing; mountaineering’, *Wett-rennen* ‘bet-running; race’

³ There is interspeaker variation regarding the position of *ge/zu* in certain cases. See Ahlers (2010). I set this issue aside since it is not crucial to my discussion.

But backformation is not a formal derivational process and plays no role in the synchronic representation of immobile verbs. Structurally, immobile verbs are just compound verbs.

German immobile verbs have been studied from various perspectives (see, i.a., McIntyre 2002, Vikner 2005, Fortmann 2007, Ahlers 2010, Song 2019, Forche 2020). Previous accounts usually explain the immobility in terms of structural uncertainty or syntactic conflicts. Thus, Vikner (2005) proposes that immobile verbs are not yet resolved between an inseparable and a separable structure and must fulfill requirements of both, which is impossible. McIntyre (2002) and Fortmann (2007) both resort to syntactic conflicts, respectively using a constraint-based and a rule-based formulation. McIntyre assumes that the conflict is between the constraints MINIMAL V2 and BACKFORMATION INTEGRITY, while Fortmann assumes that it is between the head movement rule and an interpretive chain rule imposed on such verbs, which prohibits the nonhead from being stranded. Ahlers (2010) identifies immobile verbs as compounds but proposes a complex-head representation for them, thus explaining the immobility via the lexical integrity hypothesis (LIH, Di Sciullo and Williams 1987). My account is similar to Ahlers's in that I identify immobile verbs as compounds too. However, I do not analyze them as complex heads but give them a Cat-based co-categorization structure, as in (22).

- (22) a. [_{v°} [_{x°} *berg*] [_{v°} *steigen*]] (Ahlers 2010)
 b. [_v [_{Cat} *Cat berg*] [_v *v* $\sqrt{\text{STEIG}}$]] (my analysis)

The Cat-V structure is derived by Set Merge in the main derivational layer. Thus, Cat-V is not a head despite its label V (due to the shared-feature-based labeling). That said, it is intuitively an “augmented head” because of the categorial integration of Cat and V. In this sense, my Cat-V may be considered a minimalist implementation of Fortmann's V*. On my analysis, immobility is not reduced to the LIH but is reduced to minimality. This difference between Ahlers's analysis and mine leads to our different predictions. Ahlers predicts that the entire immobile verb is frozen, while I predict that only the head is, and Cat_ω is still syntactically operable, as it is not affected by the minimality condition on V. In usage, speakers strongly prefer to keep immobile verbs intact, but my informants report that fronting the nonhead is marginally acceptable in the metalinguistic context below.

- (23) a. (?)*BAU hat er gespart, nicht „pau“!*
 building has he saved not LISTENER-ERROR
 ‘He has BUILDING-saved, not “puilding”!’
 b. ?*BAUCH möchte er reden, nicht „pauch“!*
 belly would.like he talk not LISTENER-ERROR
 ‘He would like to BELLY-talk, not “pelly”!’
 c. (?)*KOPF wird er rechnen, nicht „koff“!*
 head will he calculate not LISTENER-ERROR
 ‘He will HEAD-calculate, not “heth”!’

The fact that such sentences are marginally okay for some speakers (who strongly reject the movement of the verb head) is evidence that the mobility conditions on Cat_ω and V are different. Such preverb mobility is only available for immobile verbs but not for prefixed or denominal verbs.

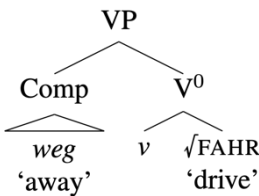
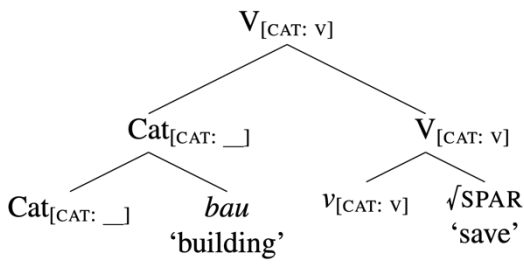
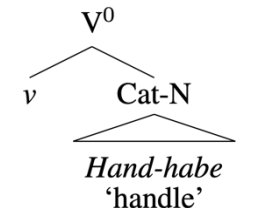
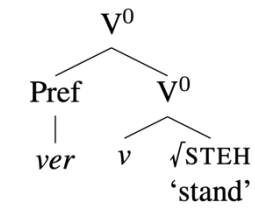
- (24) a. **VER hat er standen, nicht „vier“!*
 VER has he stood not LISTENER-ERROR
 ‘He has UNDERstood, not “umber”!’ (*ver-stehen* ‘understand’)
- b. **FRÜH wird er stücken, nicht „fruh“!*
 early will he piece.V not LISTENER-ERROR
 ‘He will have BREAKfast, not “brick”!’ (*[früh-stück]_{N-env}* ‘have breakfast’)

Further evidence for the syntactic accessibility of the inner structure of immobile verbs comes from the contrastive ellipsis context.

- (25) a. *Erna möchte nicht bauch- sondern hand-tanzen.*
 Erna would.like not belly- but hand-dance
 ‘Erna doesn’t want to belly-dance but wants to hand-dance.’
- b. *Er kann nicht nur kopf- sondern auch finger-rechnen.*
 he can not only head- but also finger-calculate
 ‘He can not only head-calculate but also finger-calculate.’

The well-formedness of such sentences is unexpected on Ahlers’s analysis, because the LIH strictly bans syntactic operations from targeting word-internal parts.

If my analysis of immobile verbs is on the right track, we can structurally distinguish the four complex verb types in German as follows.

- (26) a. particle verb
wegfahren ‘drive away’
- 
- b. immobile verb
bausparen ‘building-save’
- 
- c. denominal verb
handhaben ‘handle’
- 
- d. prefixed verb
verstehen ‘understand’
- 

In (26a), a verb head (routinely decomposed in a separate derivational layer) merges with a particle in its complement, yielding a main-derivational-layer phrasal category. (26b) is the Cat-based derivation of an immobile verb. In (26c), a compound noun is recategorized by a verbalizer into a simple verb. In (27d), a prefix is attached to a verb head, yielding a complex head. I remain agnostic about this procedure (Pair Merge may be useful).

Recall from Section 2 that X in Cat-X may be more complex. In German, X may be a particle verb, which yields a “double-prefixed” verb. Such a verb is immobile regardless

of the mobility of X. Two often-cited examples are *vor-an-melden* ‘pre-at-announce; pre-register’ and *ur-auf-führen* ‘original-up-lead; première’.

- (27) a. *Sie meldete ihre Tochter zu diesem Kurs an.*
 she announced her daughter to this course at
 ‘She enrolled her daughter in this course.’ (PONS Dictionary)
- b. *Du *meldest uns vor-an / *an-meldest uns vor / *vor-an-meldest uns.*
 you announce us pre-at at-announce us pre pre-at-announce us
 ‘You pre-register us.’
- c. ... *wenn du uns vor-an-meldest.*
 if you us pre-at-announce
 ‘... if you pre-register us.’ (Haider 2010: 60)
- (28) a. *Jedes Jahr zur Weihnachtszeit führt die Gruppe ...*
 every year for.the Christmas.time leads the group
ein Märchen auf.
 a fairy.tale up
 ‘Every year, the group performs a fairy tale for Christmastime.’ (DWDS)
- b. *Sie *ur-auf-führten das Stück / *auf-führten das Stück ur /*
 they original-up-led the piece up-led the piece original
**führten das Stück ur-auf.*
 led the piece original-up
 ‘They performed the piece for the first time.’
- c. ... *weil sie das Stück ur-auf-führten.*
 because they the piece original-up-led
 ‘... because they performed the piece for the first time.’ (Zeller 2001: 77–78)

The particle verbs *an-melden* (27a) and *auf-führen* (28a) are mobile and separable. With the addition of another preverb, they both become immobile (27b)/(28b) and can only be used in contexts with no verb movement requirement (27c)/(28c). On my analysis, these items have the structure below.

- (29) a. [v [Cat Cat *vor*] [X=VP [Comp *an*] [v *melden*]]]
 b. [v [Cat Cat *ur*] [X=VP [Comp *auf*] [v *führen*]]]

A prediction of this analysis is that in the metalinguistic correction context, only the outer preverb can go through “corrective movement.” This is borne out.⁴

- (30) a. *VOR haben sie sich an-ge-meldet, nicht „voll“!*
 pre have they REFL at-GE-announced not LISTENER-ERROR
 ‘They have PRE-registered themselves, not “pray”!’
- b. **VOR-AN haben sie sich ge-meldet, nicht „vor-ein“!*
 pre-at have they REFL GE-announced not LISTENER-ERROR
 ‘They have PRE-AT-announced themselves, not “pre-in”!’

⁴ My informants’ judgments for *ur-auf-führen* are worse, probably because *ur-* is a true prefix and must attach to a host.

In sum, German immobile verbs are syntactically derived modifier-head compounds. On my adjunction-as-categorization analysis, this has two consequences. First, the head is blocked from movement due to minimality. Second, elements in the compound are still visible to syntax. Both predictions are borne out. This mode of adjunction is native to the word domain and provides a purely derivational account of immobile verbs, without resorting to structural uncertainty, conflicting rules, or the LIH.

4. Hungarian reduplicated particle verbs

In this section, I present another case of immobility caused by word-level modification: the case of Hungarian reduplicated particle verbs (hereafter RPVs). I explain the syntactic quirkiness of such verbal items with the same theoretical method as above, reducing it to a minimality effect caused by co-categorization. The Cat-X structure in this case is more complex in both Cat₀ and X, which demonstrates the technical flexibility of the theory.

Like German, Hungarian has many complex verbs composed of a base verb and a preverb. See (31).

- (31) *be-megy* ‘in-go; enter’, *ki-néz* ‘out-look; look outside’, *fel-hív* ‘up-call; call (by phone)’, *meg-hív* ‘MEG-call; invite’, *el-olvas* ‘away-read; read through’

The majority of Hungarian complex verbs are separable, so they are more like German particle verbs than the other types we have seen. I just call them particle verbs following common practice. Hungarian verbal particles mostly have transparent meanings, though once they are combined with verbs, idiomaticity often arises.

Hungarian particle verbs are used in two word orders: $\text{Prt} < \text{V}$ in neutral contexts, $\text{V} < \text{Prt}$ in nonneutral (i.e., [+NEG], [+FOC], [+WH]) contexts.

- (32) a. *János el-olvasta a könyvet.*
 John away-read.PST the book.ACC
 ‘John read through the book.’ (neutral)
- b. *János nem olvasta el a könyvet.*
 John not read.PST away the book.ACC
 ‘John did not read through the book.’ (negation)
- c. *János TEGNAP olvasta el a könyvet.*
 John yesterday.FOC read.PST away the book.ACC
 ‘It was yesterday that John read through the book.’ (focus)
- d. *Ki olvasta el a könyvet?*
 who read.PST away the book.ACC
 ‘Who read through the book?’ (*wh*-question)

In (32a), the context is neutral, and the particle verb *el-olvasta* is used in normal order. In (32b–d), the contexts are all nonneutral, and the same particle verb is used in the inverted order. This word order variation is well studied (see, i.a., Csirmaz 2004, É. Kiss 2008, Surányi 2009, Hegedűs and Dékány 2017, and references therein). It is generally assumed that in nonneutral contexts the verb head is moved to a higher functional position, leaving the particle behind. For concreteness, I adopt the following derivational analysis adapted from É. Kiss (2008) and Surányi (2009), glossing over some details.

- (33) [FP F [TP Spec [T
- ^{*}
- T ... [vP v [PredP Spec [Pred
- ^{*}
- Pred ... [VP V ... Prt ...]]]]]]]]

The particle Prt originates in VP, either in V-complement or as an adjunct.⁵ During the derivation, both V and Prt first move into a vP-internal functional layer PredP (V to Pred, Prt to Spec-PredP) for semantic incorporation. Next, they both move into TP, which is their surface height in neutral contexts. In nonneutral contexts, V is further attracted to a higher functional head, for which I use the cover label F. Prt stays behind in Spec-TP.

Hungarian verbal particles may be reduplicated to express an irregular iterative (aka erratic, Lipták 2016) aspect, as in (34). This strategy is not often used but is productive.

- (34) a. *Át-át-lebben* a fórumnyilatkozaton a néma sokaság fogalma.
 across-across-flutters the forum.declaration.on the mute crowd notion
 ‘The notion mute crowd keeps fluttering across the forum declaration.’
 b. A kismackó *meg-meg-állt*, s körül-nézett.
 the little.bear MEG-MEG-stood and around-looked
 ‘The little bear stopped occasionally and looked around.’ (Piñon 1991: 4)
 c. *El-el-olvasta* az újságot.
 away-away-read.PST the newspaper.ACC
 ‘He read the newspaper from time to time.’ (Kiefer 1996: 181)

A quirky situation arises if we try to use RPVs in nonneutral contexts.

- (35) a. CSAK A NÉMA SOKASÁG FOGALMA **lebben át-át* /
 only the mute crowd notion flutters across-across
**át-át-lebben* a fórumnyilatkozaton.
 across-across-flutters the forum.declaration.on
 ‘Only the notion mute crowd keeps fluttering across the forum declaration.’
 b. A kismackó nem **állt meg-meg* / **meg-meg-állt* az erdőben.
 the little.bear not stood MEG-MEG MEG-MEG-stood the wood.in
 ‘The little bear didn’t stop occasionally in the woods.’ (Piñon 1991: 7)
 c. Ki **olvasta el-el* / **el-el-olvasta* az újságot?
 who read.PST away-away away-away-read.PST the newspaper.ACC
 ‘Who read the newspaper from time to time?’ (Kiefer 1996: 43)

As in (35), Hungarian RPVs can neither be used in the inverted nor in the normal order in nonneutral contexts. We encounter ineffability again. Intuitively, the cause of the ineffability is that, for some reason, the verb cannot move across the particle position when reduplication happens. One way to escape the dilemma is through periphrasis.

- (36) a. Péter nem **ment át-át* / **át-át-ment* a szomszédhoz.
 Peter not went across-across across-across-went the neighbor.to
 ‘Peter didn’t go over to the neighbor from time to time.’

⁵ Views differ on Hungarian preverb classification. É. Kiss (2008) treats all preverbs as secondary predicates, Hegedűs and Dékány (2017) classify them into complement- and specifier-types, and Surányi (2009) argues that some preverbs are base-generated as adjuncts. I use an all-encompassing VP in my simplified representation.

- b. *Nem igaz, hogy Péter időnként át-át-ment a szomszédhoz.*
 not true that Peter occasionally across-across-went the neighbor.to
 ‘It is not true that Peter went over to the neighbor from time to time.’
- (37) a. *JÁNOS *nézett be-be / *be-be-nézett hozzá.*
 John looked in-in in-in-looked him.to
 ‘JOHN occasionally visited him.’
- b. *JÁNOS volt az, aki be-be-nézett hozzá.*
 John was that who in-in-looked him.to
 ‘It was John who occasionally visited him.’
- (adapted from Kiefer 1996: 187–188)

Complex verb immobility is a very special (and bizarre) phenomenon in Hungarian. Hungarian complex verbs fall in different structural types as German ones do. Apart from the basic type in (31), there are also recategorized ones, which are denominal verbs with complex noun sources.

- (38) [[[*be-foly*]_{V-ás}]_{N-ol}]_V ‘[in-flow]-N-V; influence’
 [[[[[*fel-vé*]_{V-t}]_{N-el}]_{N-i}]_{N-z}]_V ‘[up-take]-N-N-N-V; take an entrance exam’
 [[[*ki-von*]_{V-at}]_{N-ol}]_V ‘[out-pull]-N-V; précis’ (Hegedűs and Dékány 2017: 3–4)

These verbs are all inseparable, as expected, since their particles are deeply embedded. Recall that there are also denominal “complex” verbs in German (see (14)). As in German, such verbs in Hungarian are mobile.

- (39) a. *János felvételi-z-ett az egyetemre.*
 John entrance.exam-V-PST.3SG the university.to
 ‘John took a college entrance exam.’ (neutral)
- b. *János nem felvételi-z-ett / *vételizett fel az egyetemre.*
 John not entrance.exam-V-PST.3SG the university.to
 ‘John did not take a college entrance exam.’ (negation)
- c. *JÁNOS felvételi-z-ett / *vételizett fel az egyetemre.*
 John.FOC entrance.exam-V-PST.3SG the university.to
 ‘It was John who took a college entrance exam.’ (focus) (ibid.)

The syntactic quirks of RPVs has been studied in a number of previous works (see, i.a., Piñon 1991, Kiefer 1996, Lipták 2016, Song 2018, Lipták and Saab 2019). Thus, Piñon (1991) proposes that the particle is copied from its neutral surface position (I^0 in his model) to an I' -adjunct position. On this account, inversion is impossible because the particle and its copy do not form a unit, and the normal order is ungrammatical since the verb movement requirement is still there in nonneutral contexts. Kiefer (1996) treats particle reduplication as focusing and attributes the inversion failure to the assumption that focused elements must occupy the preverbal position in Hungarian. He then explains the ungrammaticality of the normal word order by assuming that there is only one focus position in a clause. Unlike Piñon, Kiefer treats the reduplicated particle as a unit, putting it in the preverbal focus position as a whole. Lipták (2016) triggers particle reduplication by an $ASP_{[+ERRATIC]}$ head realized at PF by an affixal reduplicative morpheme RED, which copies the particle provided it is adjacent to the verb (an alignment rule). Lipták and Saab (2019) update this proposal in terms of a quantificational head Q_{ASP} encoding an iterative

operator and selecting an AspP_[+PRF], plus a local-doubling-based method of reduplication. Leaving aside details, I summarize this approach as two core ideas: (i) the particle and its copy do not form a unit; (ii) reduplication requires linear adjacency of Prt and V.

However, neither idea is empirically tenable. First, a closer look shows that it is only the verb head that is locked in situ; the particle and its copy can still be moved as a whole. Second, and following the first point, RPVs are separable. Below are the relevant data.

- (40) a. *A kendőt meg-meg is libbentette.*
 the kerchief.ACC MEG-MEG also flutter.PST
 ‘He even fluttered the kerchief from time to time.’
- b. *Péter időnként át-át akart menni a szomszédhoz.*
 Peter occasionally across-across wanted go.INF the neighbor.to
 ‘Peter wanted to go over to the neighbor from time to time.’
- c. *Péter hébe-hóba vissza-vissza fog járni.*
 Peter now.and.then back-back will go.INF
 ‘Peter will come back now and then.’ (Kiefer 1996: 188–189)

Admittedly, such separated usage is rare (Piñon 1991), and native speakers’ judgments vary (Lipták and Saab 2019). Nevertheless, the phenomenon does exist. In fact, it is well attested in corpora.

- (41) Hungarian National Corpus (Sass 2008; Oravecz, Váradi and Sass 2014)
- a. *De még a lágytojás is sok volt neki,*
 but even the soft.boiled.egg also much was to.him
meg-meg kellett állnia vele.
 MEG-MEG had.to stand.INF.3SG with.it
 ‘But even the soft-boiled egg was too much, and he had to keep pausing.’
- b. *Meg-meg szeretik álmodni, hogy az emberek voltaképpen jók ...*
 MEG-MEG love.3PL dream.INF that the people actually good.PL
 ‘They occasionally love to dream that people are actually good ...’
- c. *Kétfelkések még a forradalmár Petőfi-ben is fel-fel fognak támadni.*
 doubts even the revolutionary Petőfi.in also up-up
 will.3PL arise.INF
 ‘Doubts will arise now and then even in the revolutionary Petőfi.’
- (42) Hungarian Web Corpus 2023 (huTenTen23)
- a. *A kályha kipróbálását követő pár napban*
 the stove testing.ACC following several day.in
be-be kell gyújtani.
 in-in must ignite.INF
 ‘In the days following the stove’s initial testing, it must be lit occasionally.’
- b. *Korábban ... el-el lehetett csípni egy intimebb beszélgetésfoszlányt ...*
 previously away-away was.possible pinch.INF a intimate.COMP
 conversation.snatch.ACC
 ‘Previously ... it was possible to occasionally catch snippets of more intimate conversations.’

- c. *De talán bármilyen forradalmi időben is el-el fog*
 but perhaps whatever revolutionary time.in also away-away will
talán fénni itt ... olykor-olykor egy-egy kis írásom?
 perhaps fit.INF here every.now.and.then one.or.two little writing.my
 ‘But perhaps one or two little pieces of my writing will perhaps fit in here
 every now and then in whatever revolutionary times?’

Clearly, the reduplicated particle and its base verb can be separated by a range of elements, including modals (*kell* ‘must’, *lehet* ‘possible’), lexical verbs (*szeret* ‘love’), auxiliaries (*fog* ‘will’), and adverbs (*talán* ‘perhaps’). In (42c), the reduplicated particle and the verb are even separated by two elements. Data like the above lead me to conclude that the particle and its copy do form a unit and that the RPV is not a strict island.

In Song (2018), I proposed an alternative analysis of RPVs in purely syntactic terms, without resorting to morphophonological rules. The proposal here is a revised version of that analysis. I follow the general approach to Hungarian particle verbs in (33) up to PredP. Next, v is merged and V moves to v . Since v is a phase head, objects in its domain that need to raise further must first move to its edge. On the Lexical Array (LA)-based definition of phases (Chomsky 2000), each phase is defined by a subset LA_i of the overall LA, called a subarray, which may contain not just lexical items but also prederived objects (Chomsky 2001: n.22). I further assume that objects being moved to the edge need to go through a step of “renumeration” (Johnson 2003) to become proper citizens of the next phase.⁶ Moreover, since the LA-based definition supports parallel derivation (Chomsky 2001), renumeration may target not just the next main phase but also satellite phases (for specifiers/adjuncts). For RPVs, I propose that the particle is renumerated into the subarray for a satellite phase defined by *Cat* (categorizers are phase heads, Marantz 2001).⁷

$$(43) LA_{Cat} = \{Cat, Prt\}$$

In Song (2018), I treated particle reduplication as coordination and expanded LA_{Cat} .

$$(44) LA'_{Cat} = \{Cat, Co, Prt_2\}$$

This new subarray contains an abstract conjunction *Co* and two tokens of the renumerated particle. It gives rise to the satellite object in (45).

$$(45) [_{Cat} Cat <Co, Prt, Prt>]$$

I assume a multidimensional structure for coordinate phrases following Chomsky (2019) and Song (2024). The effect is that neither conjunct *c*-commands the other, and so neither is identified as a copy of the other. Thus, verbal particle reduplication is like a lexical

⁶ In Chomsky’s (2023: 8) new theory, syntactic objects that are moved to the phase edge are “put in a box” and kept “separate from the ongoing derivation.” This is arguably distinct from the renumeration situation I am discussing, because “boxed” objects can be accessed at multiple later phase levels, which means that they are not part of any single subarray. Perhaps renumeration and boxing are both useful but serve different purposes.

⁷ If there is no particle reduplication, the particle is renumerated into the CP subarray.

process recast in syntactic terms, which involves the coordination of two tokens of the same particle. In this respect, my analysis is similar in spirit to that in Ackerman (2003).

There is independent support for the coordinate structure of particle reduplication. First, the irregular nature of the iterative meaning associated with particle reduplication makes it somewhat resemble the meaning of coordinative repetition, such as *walk and walk* and *look and look*. In fact, when the reduplicated particle has relatively transparent meaning, we can even translate it in this way, as in *ki-ki-néz* ‘out-out-look; look out and out (=keep looking out from time to time)’. The irregularity of the iterative reading in both particle reduplication and coordinative repetition distinguishes them both from the dedicated iterative suffix *-gAt-* in the language, whose iterative meaning is regular (Kiefer 1996). This distinction can be demonstrated by the contrast below.

- (46) a. *Minden nap el-olvas-gat-ta az újságot.*
 every day away-read-ITE-PST the newspaper.ACC
 ‘He read the newspaper every day.’
 b. **Minden nap el-el-olvas-ta az újságot.*
 every day away-away-read-PST the newspaper.ACC
 ‘He read the newspaper every day every now and then.’
 (adapted from Kiefer 1996: 182)

In (46a), *el-olvas-gat* means that ‘he’ read the newspaper quite often at regular intervals, so it is compatible with the regular-reoccurrence adverbial *minden nap*. By contrast, in (46b), *el-el-olvas* means that ‘he’ read the newspaper every now and then, not at regular intervals, so it is incompatible with *minden nap*.

Second, in particle reduplication, the two identical particles carry equal phonological weight (Song 2018, Lipták and Saab 2019) (47a), so they are more like opposite particles in a coordinate structure (47b) and unlike double particles where the two particles are in different hierarchical positions (47c).

- (47) a. *el-el-olvas* ‘[away-away]-read’, *ki-ki-néz* ‘[out-out]-look’
 b. *fel-le-szaladgál* ‘[up-down]-run.about’, *ki-be-rakosgat* ‘[out-in]-put’
 c. *el-fel-vételiz* ‘away-[up-take.exam]’, *el-fel-gyógyít* ‘away-[up-cure]’

Sometimes we can even translate reduplicated/opposite particle verbs alike, such as ‘look out and out’ and ‘put out and in’. There are two remaining puzzles: (i) Why can’t Co be overt? (ii) Why is particle coordination limited to two tokens? I have no answers but note that these questions apply to both reduplicated and opposite particles. Hence, they require some more general explanation.

I continue the derivation by merging the satellite object from (45) to the clausal spine, more exactly to the *vP* edge.

- (48) [_v [_{Cat} Cat <Co, Prt, Prt>] [_{vP} V-Pred-_v PredP]]

Recall that the categorial feature on *Cat* can in principle be valued at any eventuality layer in *vP*, including *vP*. Thus, *Cat-vP* is labeled by [_iCAT:V] and ends up featurally identical to *V*. The verb head is now blocked from further movement, but *Cat_ω* can still move. While (48) looks quite different from the basic *Cat-X* construction in Section 2, the co-categorization mechanism proceeds in the same way, with a phrasal object being labeled

by a shared categorial feature and thereby turned into a “compound.” Accordingly, Cat_{ω} becomes an adjunct, though in this case it is not adjoined to the entire νP but only adjoined to its $[iCAT:V]$ feature, which amounts to being adjoined to V. This adjunction-to-feature situation may be written as in (49a), which is reminiscent of Chomsky’s (2015) notation for shared-feature-based labeling in (49b).

- (49) a. $\langle Cat_{\omega}, [iCAT:V] \rangle$
 b. $\langle \varphi, \varphi \rangle^8$ for {Subj, TP}; the subject is in a sense adjoined to the φ part of TP

Also note that even though neither Prt c-commands the other in (48), they both weakly c-command the identical particles in νP . Besides, Cat and Co are both null, so Cat_{ω} is just Prt-Prt at PF. I assume that the weak c-command and the phonetic identity together make copy identification possible and lead to the silence of the lower particle copies.

This copy relation also helps us answer another question: How can the reduplicated particle, at νP height, form a θ -connection with the internal argument (IA) in VP or be semantically incorporated into V? We can establish both connections via the copy relation. A similar method, called “base-generated incorporation,” is adopted in den Dikken (2003) for Germanic inseparable prefixes. It involves base-generation of a particle as V-adjunct and coindexing it with an identical but silent copy of the particle in V-complement. See (50) for a side-by-side illustration of den Dikken’s theory and mine.

- (50) a. $[VP [V Prt_i V] [PrP \{NP Prt_i\}]]$ (den Dikken 2003, Germanic)
 $[VP [V ver_i sturen] [PrP \{de brieven ver_i\}]]$ ‘VER-send the letters’
 b. $[V [Cat Cat \langle Co, Prt_i, Prt_i \rangle] [VP V [PredP Prt_i [Pred' Pred [VP V [SC DP Prt_i]]]]]]$
 $[V [Cat Cat \langle Co, el_i, el_i \rangle] [VP olvasta [PredP el_i \dots [SC a könyvet el_i]]]]$
 ‘away-away-read the book’ (my theory, Hungarian)

In (50a), den Dikken derives Dutch *ver-sturen* by adjoining *ver* to V and coindexing it with a silent copy in V-complement. Similarly, in (50b), I derive Hungarian *el-el-olvast* by adjoining Cat_{ω} to νP (i.e., its categorial feature) and coindexing both conjuncts with the lower copies of *el* in PredP. The four particle copies in (50b) are interpreted differently. The lowest copy is (abstractly) predicated of the IA, the intermediate one forms a complex predicate with V, and the highest two give rise to the irregular iterative meaning. This repetition-induced iterative meaning is an abstract one, which we may as well describe as ideophonic.⁹ The semantic contribution of *el-el*, in its high position, is not ‘away-away’ (which makes little sense) but just something like ‘from time to time’, applied to the entire νP . This meaning is tied to the coordinate construction and is constant no matter what the specific particle is, even if it is the fully bleached *meg*. Thus, it is really just the *material*

⁸ This pair notation is not used in Chomsky (2013), where {XP, YP}, when involving a shared prominent feature, is just labeled by that feature. Chomsky (2015) does not justify the pair notation either, and in Chomsky et al. (2023: 39) the label in this situation is again described as “a single unique feature set” (e.g., φ). In this paper, I have generally assumed that the shared feature (set) itself serves as the label in this case, but the adjunction-to-feature perspective here may give the pair label notation some motivation too.

⁹ Reduplication is commonly used to form vivid ideophones, as in Japanese *kira-kira* ‘sparkling (of light)’, *doki-doki* ‘throbbing (of heartbeats)’, etc.

but not the content of the particle that is recycled by Cat, which is exactly how Cat works (recall that the *black* in *blackboard* does not mean ‘black’). The more concrete meaning of the particle is contributed by the lower silent copies, to the IA and V.

Finally, note that the cause of immobility in the above analysis is Cat rather than coordination. As mentioned above, Hungarian also has particle verbs with two opposite particles, which are separable and mobile like simple particle verbs.

- (51) *Ki rakosgatja ki-be a kismackót a játékházba?*
 who places out-in the little.bear.ACC the playhouse.in
 ‘Who is placing the little bear in and out of the playhouse?’ (Piñon 1991: 7)

Assuming that opposite particles like *ki-be* also have a coordinate structure, I attribute the different behaviors of reduplicated and opposite particles to a difference in the position where the coordinate structure is introduced. Opposite particles are introduced in the VP on a par with simple particles, hence their normal behavior.

5. Conclusion

In this paper, I proposed a special mode of adjunction that is native to the word domain and explored its consequences via two case studies. This adjunction mode is not planned (hence no Pair Merge) but a byproduct of a co-categorization construction Cat_{ω} -X, where Cat is a defective categorizer defined by an interpretable but unvalued categorial feature. In this construction, Cat categorizes a root-like chunk ω as a modifier of X by being categorially dependent on X via agreement. Labeled by the shared categorial feature, Cat_{ω} -X ends up featurally identical to X, and Cat_{ω} becomes an adjunct. Meanwhile, X or its head is blocked from further head movement due to minimality. However, nothing bans other elements in the structure, including Cat_{ω} , from moving out. This situation is observed in both case studies, respectively on German immobile verbs and Hungarian reduplicated particle verbs. In both cases, a word-formation process that can be analyzed as adjunction via categorization takes place. Consequently, the verb head is blocked from movement, while the nonhead (Cat_{ω}) is still mobile (subject to extra conditions). The results of this paper, if on the right track, suggest that a distinction should still be made between word- and phrase-level syntax even in a single-engine framework like DM.

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