

Session 4B Abstracts

(Dis-)Continuous Agreement: A Case for Spelling Out Spans

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Problem 1: In Classical/Modern Standard Arabic, agreement morphemes such as ‘*n*’, or ‘*t*’ in can occur as either prefixes or suffixes, depending on the Tense/Aspect/Modality (TAM) configuration (Table 1). This constitutes a problem for inferential/Word-and-Paradigm theories of morphology (e.g., Anderson 1992, Stump 2001), since surface morphemes are no objects and thus not possible targets of processes in these theories. It also constitutes a problem for variants of Distributed Morphology (e.g., Halle & Marantz 1993, Noyer 1992) for which prefix-/suffix-hood is a property of the head undergoing spellout, or the vocabulary items (v_i) targeting it. I conclude that the data favors theories that derive morpheme order by syntactic means (e.g., via Antisymmetry, Kayne 1994).

SUBJECT	SUBJUNCTIVE	PERFECT
1PL	<i>n-aktub-a</i>	<i>katab-n-aa</i>
2FS	<i>t-aktub-ii</i>	<i>katab-t-i</i>
2MS	<i>t-aktub-a</i>	<i>katab-t-a</i>

Table 1: Arabic Agreement

Problem 2: Even within a single paradigm, such as the Subjunctive, an individual *feature* may be spelled out in a prefixal or a suffixal position. Consider Table 2, which shows that the gender contrast appears to be marked at the prefix in the third person, but at the suffix in the second person, Noyer’s (1992) *Discontinuous Bleeding*. **Proposal:** For Noyer, this problem is solved by reference to an independent markedness hierarchy (1), an independently existing template with exactly one prefixal position, and restricted competition between vocabulary items pre-specified as prefixes or suffixes. Leftover features are spelled out at the suffixal position.

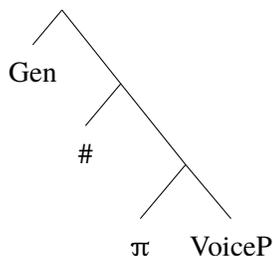
- (1) *Noyer’s (1992) Hierarchy*
 Person > Number > Gender

SUBJECT	3RD PERSON	2ND PERSON
MS	<i>y-aktub-a</i>	<i>t-aktub-a</i>
FS	<i>t-aktub-a</i>	<i>t-aktub-ii</i>

Table 2: Gender Spellout

The data in Table 1 shows that such a solution that requires reference to inherent prefixhood of a v_i is untenable. I argue that the intuitions and the empirical insights of Noyer (1992) can be rescued by re-analyzing Noyer’s hierarchy as an inverted description of the f-seq of agreement (2), along with bottom-up spellout (Bobaljik 2000), and abandoning the notion of insertion into terminals in favor of spelling out *Spans* of contiguous heads (Starke 2009).

(2)



Under such an analysis, coupled with Antisymmetry, a prefix arises when the VoiceP pied-pipes material, and a suffix when material is stranded. Both Problem 1 and Problem 2 can be understood this way:

For Problem 1, the subjunctive pattern arises because pied-piping of the span containing π occurs, giving rise to a prefix. In contrast, in the Perfect paradigms, no pied-piping takes place. This leaves the relevant spans spelled out by the same vocabulary items, but stranded, giving rise to a suffix.

In parallel fashion, Gender is spelled out in the same span as π in the third person: ‘*y*’ spells out a span along the lines of [MASC[SG[3. In contrast, in the second person, ‘*t*’ in the second person spells out only the person structure π , leaving the remainder of the structure for a later cycle of spellout. Consequently, Gender is pied-piped in the third person, but not in the second person — and thus expressed prefixally in the third person, but suffixally in the second person.

I implement these ideas using the tools of Nanosyntax. In particular, I assume that a v_i lexicalizes a span of contiguous heads in an f-seq, and that matching is governed by *i*) a maximality principle that results in

the largest span that a ν_i is available for getting spelled out, *ii*) the Superset Principle, which states that a ν_i matches all spans that it contains, and *iii*) an elsewhere principle. I further adopt a maximally decompositional approach to the structure of ϕ in the spirit of Harley & Ritter (2002), Vanden Wyngaerd (2018), and The Present Author (2016, to appear), such that the containment relations in (3) hold:

- (3) a. [2[1[3 b. [PL[SG c. [FEM[MASC

I show that such a re-interpretation of Noyer’s results provides a principled account of the spellout of features as prefixes or suffixes, and prefix/suffix alternations of affixes as pied-piped spans. I also show that this approach to linear order extends to problems with respect to paradigmatic distribution, as in Problem 3:

Problem 3: In addition to the abovementioned problems of linear distribution, Arabic also provides a further puzzle that can be understood in the Superset/Span-based approach to spellout proposed above: The contrast between ‘*t*’ and ‘*y*’ cannot be characterized in terms of the subset principle, and the natural classes it provides.

PERSON, NUMBER	SUBJUNCTIVE	
	FEMININE	MASCULINE
3SG	<i>t-aktub-a</i>	<i>y-aktub-a</i>
3PL	<i>y-aktub-na</i>	<i>y-aktub-uu</i>
2PL	<i>t-aktub-na</i>	<i>t-aktub-uu</i>

Table 3: Classical Arabic ‘*t*’ and ‘*y*’ with *k-t-b* ‘to write’

Consider the 3SG row in Table 3, which shows that the *y/t* contrast expresses a gender contrast. Under a subset approach, this suggests that at least one of them lexicalizes the relevant gender feature, i.e., at most one of them is underspecified. Next, consider the 3PL row in the same table: Since ‘*y*’ occurs in both genders, the subset principle leads us to the natural conclusion that ‘*y*’ is the underspecified one. The 2PL row, however, leads us to the opposite conclusion, since ‘*t*’, too, occurs in both genders. The subset forces us to conclude that both are underspecified, leaving us with no account for the 3SG contrast. In the existing

DM literature, Noyer (1992) avoids the issue by postulating two affixes ‘*t*’, and Halle (2000) proposes an impoverishment account that violates Noyer’s empirical generalizations about possible neutralizations.

In contrast, I show that the approach in terms of spans and a superset extends to the paradigmatic distribution of these affixes as well. In particular, I argue that the unification with the Perfect paradigm gives us reason to believe that ‘*t*’ is a first person m/f affix, as evidenced from the first singular m/f form *katab-t-u*. The following three ν_i s solve the problem in a manner compatible with the solution to Problems 1 and 2:

- (4) a. /t/ \Leftrightarrow ‘[FEM[MASC[SG[1[3]’ b. /y/ \Leftrightarrow ‘[MASC[SG[3]]’ c. \emptyset \Leftrightarrow ‘[SG[2]’

In the third person singular, ‘*t*’ is a superset of both the masculine and the feminine, but in the masculine ‘*y*’ is able to spell out the same structure, and thus wins due to the elsewhere principle (whereas ‘*t*’ spells out a larger span in the feminine, and thus wins there). In the second person, ‘*t*’ is the largest match, but since it does not lexicalize [2, it cannot span all the way up to the gender structure, leaving it for a later (suffixal) spellout. In parallel fashion, the PL node in the third person plural blocks both ‘*y*’ and ‘*t*’ from spelling out a span containing the gender structure, since they do not contain this node, and thus do not form a superset of the relevant span. The only span that is matched is thus [SG[3 – the elsewhere principle decides in favor of ‘*y*’ again, again leaving gender for a later, suffixal spellout.

In conclusion, the span-based, atemplatic approach I propose reinterprets Noyer’s (1992) insights as genuinely syntactic. In doing so, it not only finds a theoretical “home” for the scale as an f-seq description, but it also provides novel solutions to issues of both linear order and paradigmatic distribution that are without account in previous analyses.

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The representation of opaque meanings in Dutch prefixed verbs

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Results from primed lexical decision experiments with German and Dutch prefixed verbs suggest that when hearing/reading a semantically opaque word like *ver-lopen* ‘expire’, a morphological representation for *lopen* ‘walk’ is activated. In particular, *morphological* priming effects are obtained for *verlopen*→*lopen*, regardless of the lack of semantic overlap (Creemers et al. 2020; De Grauwe et al. 2019; Smolka et al. 2009; Smolka et al. 2014). Here, we examine the *conceptual* processing of morphological representations. Our research aims are twofold. First, we examine whether the meaning associated with the stem (e.g., ‘walk’) is activated in a semantically opaque form like *ver-lopen* ‘expire’ ①. The results show priming for *verlopen* → *rennen* ‘run’, suggesting that a conceptual representation for the stem is activated. Second, we examine the time-course of activation of the opaque full-form versus stem-related meanings in opaque verbs ②.

Background Compared to morphological processing, only little research exists on the conceptual processing of opaque complex forms. Some suggest that semantic associates of the morphological stem (or a transparent complex counterpart sharing the same stem) cannot prime the corresponding opaque complex forms (De Grauwe et al. 2019; Zwitserlood et al. 1996; Zwitserlood et al. 2005). However, Schreuder et al. (2003) investigate Dutch low-frequency morphologically complex and semantically opaque words (e.g., *brand-ing* ‘surf’, which consists of high-frequency *brand* ‘burn’ and *-ing*), and show significant associative priming for the stem (*brand-ing* → *vuur* ‘fire’) at a Stimulus Onset Asynchrony (SOA) of 500ms, but not with a SOA of 150ms.

Methods The studies above used visual targets, and most of them used a between-items design in which targets differ across conditions. We present two *auditory* primed lexical decision experiments with Dutch prefixed verbs, and use a within-item design. EXP1 ($n = 28$) addresses ①, and includes 128 primes in four conditions (Table 1): morphologically and semantically related (MS), morphologically related but semantically opaque (M), stems of the MS and M verbs, and unrelated control (C) verbs. Targets are semantic associates to the stems (De Deyne et al. 2013), consisting of a mix of verbs and nouns/adjectives. EXP2 addresses ②, and presents M verbs as targets (*ver-lopen* ‘expire’). Critical prime conditions (Table 2) are formed by semantic associates of the stem (*rennen* ‘run’) and semantic associates of the full-form (*ongeldig* ‘invalid’). Further conditions are formed by the stems of the targets and unrelated nouns. To examine the time-course of activation of the full-form and stem-related meanings, we include a short (150ms) and long (900ms) Interstimulus Interval (ISI), which is the auditory equivalent of an SOA as used in Schreuder et al. (2003). Fillers and non-words were included, and critical items were distributed over four lists.

Table 1: Conditions and example critical items in Experiment 1.

STEM PRIME	MS PRIME	M PRIME	CONTROL PRIME	TARGET
<i>lopen</i> ‘walk’	<i>doorlopen</i> ‘walk along’	<i>verlopen</i> ‘expire’	<i>bewaken</i> ‘guard’	<i>rennen</i> ‘run’
<i>wijzen</i> ‘point’	<i>aanwijzen</i> ‘point out’	<i>bewijzen</i> ‘prove’	<i>beklimmen</i> ‘climb’	<i>vinger</i> ‘finger’
<i>werpen</i> ‘throw’	<i>afwerpen</i> ‘throw off’	<i>ontwerpen</i> ‘design’	<i>verslapen</i> ‘oversleep’	<i>gooien</i> ‘throw’

Table 2: Conditions and example critical items in Experiment 2.

STEM PRIME	STEM-RELATED	FULL-FORM-RELATED	CONTROL PRIME	TARGET (M verb)
<i>lopen</i> ‘walk’	<i>rennen</i> ‘run’	<i>ongeldig</i> ‘invalid’	<i>paard</i> ‘horse’	<i>verlopen</i> ‘expire’
<i>drinken</i> ‘drink’	<i>dorst</i> ‘thirst’	<i>zwemmen</i> ‘swim’	<i>dans</i> ‘dance’	<i>verdrinken</i> ‘drown’
<i>vallen</i> ‘fall’	<i>struikelen</i> ‘stumble’	<i>geboorte</i> ‘birth’	<i>nacht</i> ‘night’	<i>bevallen</i> ‘give birth’

Results LME models were used to analyze log-transformed response times (RTs) to targets after minimal a-priori data trimming and model criticism (Baayen and Milin 2010). Besides prime condition, the model includes fixed effects for target duration, prime and target frequency, ISI, prime RT, trial number, target association frequency, and target POS, and random intercepts for subjects and targets. For EXP1 (Figure 1), the model indicates significant priming, defined as a difference with the Control condition, in the M ($\beta=-0.038$, $p=0.004$), MS ($\beta=-0.052$, $p<0.001$), and Stem ($\beta=-0.078$, $p<0.001$) conditions. No significant difference is found between MS and M ($p=0.258$). The Stem condition differs significantly from the M condition ($\beta=0.041$, $p=0.006$), but not from the MS condition ($p=0.109$). Data collection for EXP2 will be finished in January 2020.

Conclusions The results for EXP1 suggest that the conceptual representation of the stem in a semantically opaque verb (*verlopen* ‘expire’) can be primed by the opaque complex verb. However, this effect is much smaller compared to priming by the stem (*lopen* ‘walk’). The results for EXP2 will shed more light on this result, as our second experiment investigates the time-course of activation of the full-form and stem-related meanings in opaque forms. The results will help clarify what it means to ‘activate’ a morpheme, and whether that entails activation of a conceptual representation. Our paper further discusses implications for theories of auditory word recognition.

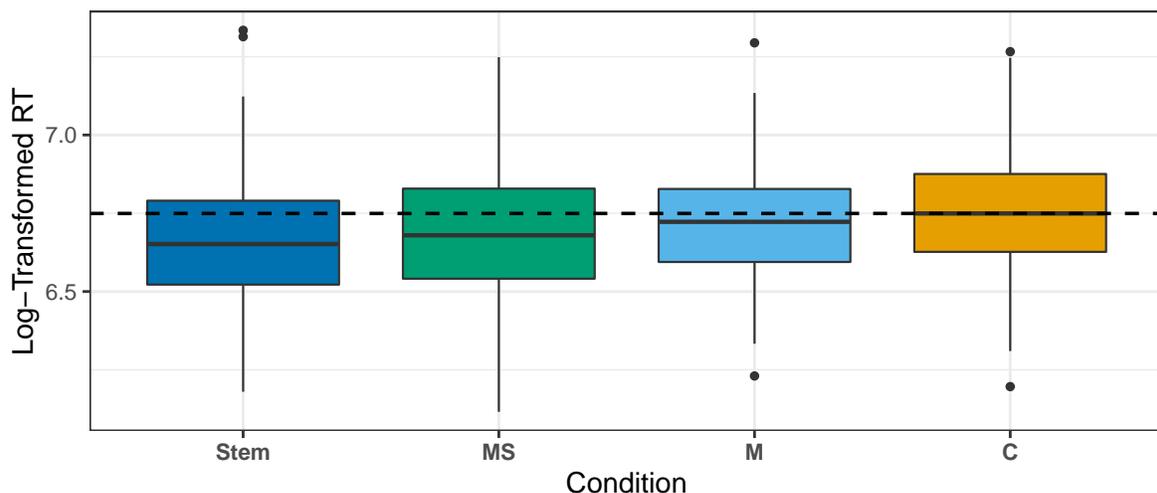


Figure 1: Results Experiment 1. The dotted line represents the median in the Control condition.

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Number-Based Suppletion and Locality in Yawanawa (Panoan)

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Overview: Number-based suppletion (NBS) has been used as evidence in the discussion of locality domains in Distributed Morphology (DM). Given that NBS follows an absolutive pattern crosslinguistically (c.f. Veselinova 2003), Harley (2001), and Bobaljik & Harley (2017) argue that the locality restriction conditioning it is that of sisterhood between a root and its complement: external arguments are outside the phase and expected not to play a role (Marantz 2001, 2008). NBS in Yawanawa (Panoan) suggests instead that conditioning features for suppletion may lie across phrase but not phase boundaries, as long as node adjacency obtains (c.f. Merchant 2015).

Data: Yawanawa roots meaning ‘come’ and ‘go’ undergo an unusual type of NBS, conditioned by the total number of arguments involved in the verbal event. One form is chosen if the verb has a single singular argument, as in (1-a). The other form is chosen if the event has multiple participants, i.e. if the single argument is plural, as in (1-b), *or* if the verb has more than one argument, as in (1-c). The ‘transitive’ versions of ‘come’ and ‘go’ mean ‘bring’ and ‘take’, respectively. The same pattern is attested in Shipibo (Panoan) (Valenzuela 2003:150,273-279).

- (1) a. Kape **u-i** / **ka-i**. (*ve-i / *hu-i)
 caiman come.SG-IPFV go.SG-IPFV come.PL-IPFV go.PL-IPFV
 ‘The caiman is coming/going.’
- b. Yume-hu **ve-kan-i** / **hu-kan-i**. (*u-kan-i / *ka-kan-i)
 teenager-PL come.PL-PL-IPFV go.PL-PL-IPFV come.SG-PL-IPFV go.SG-PL-IPFV
 ‘The teenagers are coming/going.’
- c. Tika=nē a-wē pani **ve/hu-a**. (*u-a / *ka-a)
 Tika=ERG 3S-GEN hammock come/go.PL-PFV come.SG-PFV go.SG-PFV
 ‘Tika brought/took his hammock.’

One could object that only the intransitive roots are suppletting for number: the transitive verbs just happen to be homophonous with the plural forms. However, (2) shows that the same suppletion pattern obtains with a second pair of predicates, namely the functional forms of ‘come’ and ‘go’, which translate as ‘come/go while X-ing’. *-keran* is used if the verb’s single argument is singular, as in (2-a), otherwise *-veran* is used, as in (2-b) and (2-c). This suggests the pattern is no coincidence. (Only ‘V-come’ is given here due to space restrictions).

- (2) a. Vea sai-**keran-i**. (*sai-veran-i) single SG argument
 Vea sing-COME.SG-IPFV sing-COME.PL-IPFV
 Vea is singing as he is coming this way.
- b. Yura westima sai-**veran-kan-i**. (*sai-keran-kan-i) single PL argument
 person many sing-COME.PL-PL-IPFV sing-COME.SG-PL-IPFV
 ‘Many people are singing as they are coming this way.’
- c. Ē mi-a xinā-**veran-i**. (*xinā-keran-i) two SG arguments
 1SG.ERG 2SG-ACC think-COME.PL-PROG think-COME.SG-PROG
 ‘I was coming this way thinking about you.’

The plural forms can’t be an expression of object agreement on *v*, because singular objects cooccur with it, as in (1-c), (2-c). Nor do they express subject agreement on *T*. In clauses with intransitive versions of the suppletting predicates, there are two expressions of plurality in the verb: the form of ‘come/go’ itself, and the plural agreement morpheme *-kan* as in (1-b), (2-b). In contrast, the transitive predicates with singular subjects as (1-c), (2-c) only express plurality on ‘come/go’, not on *T*. Also, switch-reference clauses, where the head *T* doesn’t expone ϕ -features (Baker & Camargo Souza 2019) still have number suppletion on ‘come/go’, as in (3).

- (3) [[Yume-hu cidade **hu-shū**] *pro* tsäivema-hu], Txini inīma. (*ka-shū)
 teenager-PL city go.PL-SS.PFV.ERG *pro* call.OS-PL Txini be.happy.PFV
 ‘When the boys went to the city and called her, Txini was happy.’

Proposal: Features on a Multiple-Agreeing voice head condition suppletion in YW, as in (4). I assume that non-singular morphology is the exponence of a set of atomic IND(ividual) features, rather than a [PL] feature (c.f. Trommer 2006, Gluckman 2016). This set can be expounded on voice itself, in the ‘come/go while X-ing’ constructions, or on the root *if and only if* it’s immediately adjacent to voice. An intervening head, such as the applicative in (5) blocks the

Deconstructing resultatives: the Unique Path Constraint revisited

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Introduction. It is widely argued that more than one result state cannot be predicated in a single clause (Goldberg 1991; Levin & Rappaport Hovav 1995; Tenny 1994; Tortora 1998; Rappaport Hovav 2008). This is apparently supported by the fact that **(a)** two distinct result states in a single clause are not possible (1) and **(b)** change of state verbs and result phrases denoting distinct results are ruled out (2) (change of state/location permit result phrases but only if they specify the result by the verb: *break the vase into pieces/arrive in x*). Yet, (3) apparently violates such grammatical restriction as they involve change of state verbs combined with path PPs.

- (1) a. *Sam kicked Bill **black and blue out of the room**. (Goldberg 1991: 368)
b. *He wiped the table **dry clean**. (Goldberg 1991: 370)
c. *Sam tickled Chris **off her chair silly**. (Goldberg 1991: 368)
- (2) a. *I **thinned** the soup tasteless. (Rappaport Hovav 2014: 276)
b. *I **broke** the mirror into the garbage pail. (Levin & Rappaport Hovav 1995: 61)
c. *The vase **fell broken**. (Rappaport Hovav 2014: 276)
- (3) a. The cook **cracked** the eggs into the glass. (Levin & Rappaport Hovav 1995: 60)
b. Daphne **shelled** the peas onto the table. (Levin & Rappaport Hovav 1995: 60)
c. He **broke** the walnuts into the bowl. (Goldberg 1991: 376)

Examples in (2) are argued to be ungrammatical as the verbs encode a change of state/location and therefore they cannot be combined with result phrases denoting distinct result states. Levin & Rappaport Hovav (1995) argue that examples in (3) are possible since the two result states are predicated of different entities (in (3a) the eggshells break, the contents move). Drawing on this, Beavers & Koontz-Garboden (2017) and Ausensi (2019) argue two distinct result states are possible if they are predicated of distinct entities. Yet, Jackendoff & Goldberg (2004) point out that there are examples of change of state verbs and path PPs in which the two distinct result states are predicated of the same entity (*The chocolate melted out of the box*), thus posing a challenge for the claim that the restriction is on the number of result states predicated *per entity*.

Proposal. I propose that the grammatical restriction on the number of result states that can be predicated in a single clause is a (syntactic) restriction regarding event structure. Thus, I argue that it is not a restriction regarding whether combinations of change of state verbs and result phrases denoting distinct result states are grammatically possible, as traditionally held. **Data:** Evidence comes from the fact that there are naturally-occurring examples of change of state verbs and path PPs (5)-(6), as well as change of state verbs combined with APs where the result state that the APs denote is distinct from the one by the verb (7)-(8), contra traditionally argued.

- (5) a. He told her a plane had just **smashed into the North Tower**. (GloWbE)
b. A lot of the water sprayed onto the ship had **frozen onto the steel**. (GloWbE)
c. The snow **melted off the lower part of the Range**. (COCA)
- (6) a. Jackfish **cleaned** the mud out of the car. (COCA)
b. They [...] **broke** the branches off the winterdry limbs. (COCA)
c. We **blasted** the tops off mountains. (COCA)
- (7) a. Sailor finishes his beer [...] steps on it, **crushing it flat**. (COCA)
b. Huebner picked a nit from behind his ear and **squished it dead**. (COCA)
c. A couple of monks **broke** the corpse loose from the deck. (COCA)
- (8) a. The ceiling **split open**. (COCA)
b. Car doors **banged shut**. (COCA)
c. The dog **tore free**. (Basilico 2012: 95)

Analysis. **Assumptions:** (i) I adopt a neoconstructionist approach to argument/event structure (Embick 2004; Borer 2005; Ramchand 2008; Alexiadou et al. 2006, 2015), whereby verb meanings decompose into event templates, defining the temporal and causal structure of the event, and roots, providing real-world information about the event. (ii) I follow McIntyre (2004), Harley (2005), Mateu & Acedo-Matellán (2012), Alexiadou et al. (2015), *i.a.*, and assume that verb roots can either be interpreted as manner or result depending on whether they

are inserted as arguments or modifiers of $v_{\text{CAUSE}}/v_{\text{BECOME}}$. **Implementation:** I argue that the grammatical restriction follows from the fact that (a) in transitive complex events (McIntyre 2004; Embick 2004; Mateu 2008) of change of state (e.g. *John broke the eggs into the vase*), verb roots are adjoined to the little v head as modifiers of v_{CAUSE} (as they describe the manner with which the causer brings about the result, i.e. *John got the eggs into the vase by breaking*) and the little v head can only select for a PP, with P_{LOC} as its head (Harley 2003), denoting a change of location (e.g. *He cleaned the mud out of the car*) or for a vP , in which a second root merges with v_{BECOME} , yielding a change of state interpretation (e.g. *crush y flat/dead*). (b) In intransitive complex events of change of state (e.g. *The plane smashed into the tower*), verb roots are adjoined to the little v head as modifiers of v_{BECOME} (as they describe the manner with which a theme achieves the result, e.g. *The plane got into the tower by smashing*). The little v head can only select for a PP (e.g. *The snow melted off the lower part*), as in transitive complex events, or for an aP , which contains a second root that merges with a , yielding a change of state (e.g. *The earth split open*). Thus, in these cases, the verb roots attach as modifiers of $v_{\text{CAUSE}}/v_{\text{BECOME}}$ as they describe the manner with which the result (expressed by the PPs/APs) is achieved (=manner incorporation; McIntyre 2004; Harley 2005, *i.a.*). (c) The ungrammaticality of the simplex events in (1) follows since there are two overt realizations of the same predicate. The apparent counterexamples in (3) are naturally accounted for in the present analysis, as the verb root is attached as a modifier of v_{CAUSE} , whereas it is the PP that denotes the actual result (i.e. *get the eggs into the vase by breaking*). The ungrammaticality of examples in (2) is only apparent and conceptual in nature as it is not possible to establish a causal relation that links the action by the verb and the result by the APs/PPs. In this respect, examples like **I broke the mirror into the garbage pail* (ungrammatical for Levin & Rappaport Hovav 1995) are in fact possible if a clear causal relation is established, e.g. that breaking the mirror is the intended means in order to get it into the pail (because it is too big). Crucially, naturally-occurring examples in (5)-(8) show that it is grammatically possible to combine change of state verbs and path PPs/APs denoting result states distinct from the ones by the verb. Structures for (in)transitive complex events of change of state (5)-(8) are given in (9) and (10).

- (9) a. x break z path PP = [vP DP₁ [v' v $\sqrt{\text{ROOT}}$ v_{CAUSE} [PP DP₂ [P' P_{LOC} [PP]]]]].
 b. x crush z AP = [vP DP₁ [v' v $\sqrt{\text{ROOT}_1}$ v_{CAUSE} [vP DP₂ [v' v_{BECOME} $\sqrt{\text{ROOT}_2}$]]]].
 (10) a. x smash path PP = [vP DP_i [v' v $\sqrt{\text{ROOT}}$ v_{BECOME} [PP t_i [P' P_{LOC} [PP]]]]].
 b. x split AP = [vP DP [v' v $\sqrt{\text{ROOT}_1}$ v_{BECOME} [aP a $\sqrt{\text{ROOT}_2}$]]]].

Predictions: (a) (In)transitive complex events of change of state can only combine with path PPs or APs, but never both (11). (b) Simplex events (where the verb encodes the manner; *hammer the metal flat*) can only combine with Path PPs or APs but never both (12) (also (1)).

- (11) a. *John **broke** the eggs into the bowl open. (vs. He broke the eggs into the bowl/open)
 b. *The eggs **broke open** into the bowl. (vs. They broke open/into the bowl)
 c. *The chocolate **melted out of the box** into the cup. (vs. It melted out of the box/into the cup)
 (12) a. *Tam laughed himself **silly faint**. (vs. He laughed himself silly/faint)
 b. *He sneezed the napkin **off the table** into a case. (vs. He sneezed it off the table/into a case)
 c. *She hammered the metal **flat** into the ground. (vs. She hammered it flat/into the ground)

Conclusion. Contra traditionally argued, change of state verbs can be combined with path PPs/APs denoting distinct result states. I propose that the verb roots in these cases attach as modifiers of $v_{\text{CAUSE}}/v_{\text{BECOME}}$ (=manner incorporation), as they describe the manner with which a causer brings about the result (*x get the mud out of the car by cleaning*) or the manner with which a theme achieves the result (*x become open by splitting*), whereas path PPs/APs denote the actual results. Thus, I propose that the grammatical restriction is regarding event structure as there can only be one overt (syntactic) realization of a predicate denoting a result state.

Selected references. Goldberg, A. 1991. It can't go down the chimney up: Paths and the English resultative. *Proceedings of BLS*. | Harley, H. 2005. How do verbs get their names? Denominal verbs, Manner incorporation and the ontology of verb roots in English. *The Syntax of Aspect*. | Mateu, J. and Acedo-Matellán, V. 2012. The manner/result complementarity revisited: a syntactic approach. *The End of Argument Structure?*