

What it means to be DOWN and OUT: the semantics of particles in English

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Abstract. This paper looks at the semantic structure of the English verb-particle combination. It addresses the question of why some particles combine freely with many different verbs whilst others combine with a comparatively limited range of verbs, by exploring whether there are any rules governing the combination of English verbs with the particles DOWN and OUT. In particular, this paper examines the aspectual contribution that these particles make to the event structure of a verb phrase, and claims that this contribution is dependent on the semantic content of the verb with which they combine. The paper will begin with a brief summary of the research area followed by some definitions of key terms. Research questions about the function of particles in general will then be introduced. The main section of the paper will consist of an analysis of the data collected for the particles DOWN and OUT, and will then show how hypotheses about the function of specific particles have been tested and refined to account for the results. Lastly the possible theoretical implications of the findings will be discussed.

1. *Summary of the research area*

This paper addresses the semantic structure of the verb-particle combination (henceforth referred to as VPC), e.g., *Fred washed the car off*, *She ripped up the dress*, *I rinsed my hair out*. We focus on the semantic feature of situation aspect, as defined below, as recent work in this area has shown aspect to be an important factor in determining the meaning of verb phrases. Hence the motivation for this research is that a better understanding of the VPC's aspectual structure may help to explain how and why certain verbs combine with certain particles.

The literature on this topic contains numerous definitions of the phrasal verb or verb-particle combination. The scope of this research has therefore been limited in two ways. Firstly, verb-preposition combinations such as *I climbed down the ladder*, *I ran up the hill* have been excluded on the basis that their syntactic behaviour is notably different from that of other combinations.¹ Secondly, the investigation has been limited to

¹ In verb-preposition combinations the preposition can only occur before the prepositional noun phrase (*I ran up the hill*/**I ran the hill up*), whereas in a VPC the

combinations in which at least the verb retains its literal meaning, e.g., *I blew the candle out, I chopped down the tree*. This excludes idiomatic verb-particle combinations such as *Her performance brought the house down*. For the purposes of this study the term verb-particle combination will be used to refer to semi-literal combinations in which at least the verb retains its literal meaning.

The type of aspect that this study focuses on is situation aspect, which refers to the inherent temporal properties of a situation. We will use the traditional four-way distinction between STATES, ACTIVITIES, ACCOMPLISHMENTS and ACHIEVEMENTS outlined in Dowty (1979), augmented by a further class of SEMELFACTIVES. These have been defined by Carlota Smith as ‘instantaneous atelic events’ (1991:30). Unlike ACHIEVEMENTS, they do not bring about a new state, e.g. *flash, gulp*.

The research question is:

- *What contribution does the particle make to the aspectual structure of the VPC?*

In a previous study of the aspectual uses of the English verb-particle combination, Laurel Brinton claims that ‘particles typically express a telic notion’ and so ‘add the concept of a goal or an endpoint to durative situations which otherwise have no terminus’ e.g. *She pulled my hair/out* (1988:168). This claim suggests that the basic function of the English particle is to turn an atelic event into a telic event by adding an endpoint, raising the question of whether particles contribute the same aspectual information to every verb with which they combine. The central focus of the present study is therefore to examine whether the contribution made by the particles DOWN and OUT is affected by the semantic content of the verbs with which they occur. More specifically, we aim to explore whether the semantic information encoded in the verb plays any part in determining whether the particles it combines with express an aspectual or a spatial meaning. We also address the issue of how the aspectual properties of the particle are linked to the event structure of the verb phrase in which they occur.

It seemed appropriate to begin this investigation by testing Brinton’s claim. We therefore put forward the following two hypotheses:

1. *Particles add aspectual features to verbs.*

particle can occur on both sides of the direct object NP (*I scraped out the bowl/out*). Also, PPs can be preposed to the beginning of the sentence i.e. *up the hill he ran* whereas particles cannot (**out the bowl he scraped/*down the answer he copied*).

2. VPs that are not accomplishments **become** accomplishments when a particle is added.

2. Methodology

A corpus-based approach was used to investigate these questions, as corpus data reflects actual usage and so could be said to be more representative of the range of possible verb-particle combinations than intuitive data. A database was constructed using two different data sources: Beth Levin's (1993) book 'English Verb Classes and Alternations' and the COBUILD dictionary of English Phrasal Verbs.

The following procedure was used. Each class of verbs listed in Levin 1993 was checked against the VPCs listed in the COBUILD dictionary to see which verbs combined with the particle DOWN. Every verb that combined with the particle DOWN was then classified according to its aspectual type (see Appendix 1). Verbs were classified as follows. Each verb was placed in the minimal syntactic frame in which it can occur, i.e. with singular subjects and no objects where possible e.g. *John ran*, and with as few internal arguments as possible when they are grammatically required, e.g. *I copied my brother* rather than *I copied the picture into my book*. A minimal syntactic frame was used in order to minimise the effect that other sentential components could have on the aspect of the sentence. The resulting verb phrase was then tested using Dowty's diagnostics to determine which aspectual class the verb phrase belonged to. However, one of the problems with Dowty's classification is that many verbs can take different aspectual interpretations when they are found in different contexts, e.g.

- (1)
 - a. Johnny swept
 - b. Johnny swept the floor
 - c. Johnny swept the floor clean
 - d. Johnny swept the leaves into a pile

To address this issue a monotonic and compositional theory of verbal aspect was used, based on the work of Levin & Rappaport-Hovav (1998) and Olsen (1997), as the basis of my classification. This theory claims that verbal aspect is built up from the smallest unit, i.e. the verb root, to the largest unit in such a way that semantic elements can be added but not lost. The implications of this approach are that verbs are classified according to the most basic aspectual interpretation they can take. For example, if a

verb can take an activity interpretation, e.g., *She painted for hours*, it is classified as being an activity verb even though it may be capable of taking more complex event interpretations when other sentential components are added e.g. *She painted a picture in an hour* - an accomplishment VP.

Once the verbs had been classified according to aspectual type, a table was created for each verb class, and each verb phrase was entered into the table along with a second sentence that was identical except for the addition of the particle DOWN, to produce a minimal pair (see Appendix 2). The aspectual properties of each sentence were then compared to ascertain how the presence of the particle affected the aspectual structure of the sentence. Again Dowty's diagnostics were used to classify each sentence. This procedure was then repeated for verbs that combine with the particle OUT.

3. Results

Let us begin with the data for DOWN, looking firstly at the results for hypothesis 1, which is as follows:

1. *Particles add aspectual features to verbs.*

3.1 Results for hypothesis 1

The data for DOWN produced the following results:

Aspect of DOWN

119 verbs combine with DOWN

52 are activities	(44%)	25 are achievements	(21%)
11 are semelfactives	(9%)	3 are underspecified	(2%)
28 are accomplishments (24%)NB 9 do not occur without PP/particle			

The data contained 3 underspecified verbs and 9 accomplishment verbs that are grammatically unacceptable when they occur without a PP or a particle e.g. *I put my hat/I set the cup*. All 12 verbs were discounted on the basis that they are unclassifiable without the particle. 107 verbs remain.

- In 66/107 (62%) the addition of DOWN **adds** a feature to the aspectual properties of the verb.
- In 41 (38%) the addition of DOWN makes **no** addition to the aspectual properties of the verb.

Contrary to Brinton's (1988) claim that English particles add an aspectual feature to the verb, these results did not fully uphold the hypothesis. hypothesis 1 was therefore weakened as follows:

1b. Particles do not remove aspectual features from the verb.

3.2 Results for hypothesis 1b

When reconsidered in the light of this hypothesis, the data produced the following results:

- In **no** cases does the addition of DOWNS **remove** an aspectual feature from the verb.

These results therefore fully uphold hypothesis 1b, and this gives supporting evidence for a monotonic and compositional approach to verbal aspect, as it shows that the particle can **add** an aspectual element to the verb but **cannot** remove it.

In order to investigate the cases in which DOWNS does **not** add an aspectual feature to the verb, hypothesis 1 was refined further. Of the 41 verbs that showed no change in aspect when DOWNS was added, 18 are accomplishment verbs. These 18 verbs were discounted on the basis that the particle cannot add an aspectual feature to these VPs as they already have the most fully specified event structure possible, i.e. they are accomplishment events. So hypothesis 1 was reformulated as follows:

1c. Particles add aspectual features to non-accomplishment verbs.

3.3 Results for hypothesis 1c

18 accomplishment verbs and 3 underspecified verbs were discounted. The remaining 88 verbs produced the following results:

- DOWNS **adds** a feature to the aspect of the verb in 66/88 (75%)
- DOWNS makes **no** addition to the aspect of the verb in 22/88 (25%)

Hypothesis 1c holds for 75% of cases. However, there are still 22 verbs that do not change aspect when DOWNS is added. These verbs were therefore examined for any observable patterns that may suggest why they do not conform to the pattern of behaviour shown by the other verbs.

3.4 Verbs which do not change aspect when DOWN is added

Of 22 verbs that show no change in aspect when DOWN is added, 8 are activity verbs. Closer examination reveals that these verbs belong to the following semantic verb classes:

- 5 are weather verbs (*lash, pelt, pour, rain, teem*)
- 3 encode the maintaining of a situation/body position (*hold, keep, stare*)
- 6 encode an element of direction (*lash, pelt, pour, rain, stare, teem*)

The 5 verbs that describe different types of weather, or to be more precise, types of precipitation, stand out as a class which behave differently from other verbs. Semantically, they encode events that do not fit easily onto a temporal scale, as they do not have clear beginnings or endpoints. Identifying a point at which drizzle becomes rain and vice versa is conceptually problematic. Therefore it is difficult to decide when the description ‘it’s teeming down’ becomes true and then at what point it stops being true. As these verbs are temporally so indistinct, there is no potential endpoint to mark, and this renders an aspectual marker redundant. The particle must therefore have a non-aspectual function in these cases. An obvious alternative is that the particle carries a spatial/directional sense. This would fit well with the meaning of these precipitation verbs, as they encode the notion of movement of water through space, a concept that fits more naturally onto a spatial scale than a temporal one. We can therefore conclude that the particle is being used in a spatial sense in these cases, and that spatial particles are neutral with regard to aspect. This explains why the particle does not change the aspectual structure of these VPs. It is also interesting to note that the weather verbs appear to encode the direction DOWN in their meaning, e.g.:

- (2)
- a. *It rained, but not downwards
 - b. *Hail poured from the sky, but didn’t pour downwards
 - c. *It was pelting with rain, but the rain didn’t move downwards

It is unclear to what extent real world knowledge affects the interpretation of these verbs. Examples such as *The soldiers pelted stones up at the battlement* suggest that the DOWNward meaning of *pelt* may be the result of pragmatic interpretation. The function of the particle in (2) therefore appears to be to make more explicit the downwards motion of the water rather than to add an aspectual feature to the verb.

The remaining 14 verbs which did not change aspect were achievements verbs. Again, closer examination reveals that most of these verbs can be grouped into semantic classes:

- 7 are verbs of body position/movement (*bend, bow, hand, fall, flop, ?glance, reach*)
- 11 encode directed motion (*bend, bow, come, fall, flop, glance, go, hand, phone, plonk, reach²*)

The 7 verbs of body position or movement all typically describe the motion of a part of the body through space. This is also a concept that fits more naturally onto a spatial scale than a temporal one, suggesting that the particle DOWN takes a spatial rather than an aspectual sense when it combines with these verbs.

Let us return to the overall picture. Closer examination has shown that of 22 verbs that do not change aspect when DOWN is added, 17 share the semantic element of directed motion. In the light of these results the following hypothesis was formulated:

1d. Verbs already encoding directed motion do not change aspect when the particle DOWN is added.

3.5 Results for hypothesis 1d

The data shows that 22/88 non-accomplishment verbs encode directed motion.

- 17/22 show no change when DOWN is added (77%).
- 5/22 do change when DOWN is added (*crouch, kneel, lie, sit, squat*).

All 5 express the assuming of a body position. Interestingly, these verbs are singled out by linguists such as Talmy (1985:86) for being aspectually ambiguous when they occur with a PP, i.e. the sentence *I knelt on the floor* can be interpreted either as a ‘being-in-a-state’ event or as an ‘assuming a state’ event. So they can be classified either as ACTIVITIES (e.g. *I knelt on the floor for hours*) or ACHIEVEMENTS (*When the clock struck one I knelt on the floor*). However, when they combine with the particle DOWN the ‘being-in-a-state’ interpretation is eclipsed by the ‘assuming-a-state’ interpretation i.e. *When the clock struck one I knelt down on the floor*

² I included *phone* and *glance* in this class as they encode movement of sight/sound along a path e.g. *I phoned down to reception, I glanced across the room*.

sounds better than *?I knelt down on the floor for hours*. Therefore for these verbs the function of the particle can be better described as **specifying** for aspect rather than **adding** an aspectual feature.

To conclude, the data upholds the hypothesis that verbs encoding directed motion do not change aspect when DOWN is added. Hypothesis 1c can therefore be refined once more to give hypothesis 1e:

1e. When the particle DOWN combines with a non-accomplishment verb it adds an aspectual feature except when the verb already encodes a directed motion event.

This leads us on to the second hypothesis, which was as follows:

2. VPs that do not take accomplishment readings become accomplishments when a particle is added.

3.6 Results for hypothesis 2

- Of 88 verbs that were not accomplishments:
 - 53 became accomplishments when DOWN was added (60%).
 - 22 showed no change in aspect (25%)
 - 8 activity verbs
 - 14 achievement verbs
 - 13 (atelic) verbs became achievements (14%)

Again, contrary to Brinton's claim about the function of particles, these results do not fully uphold the hypothesis. Hypothesis 2 was therefore reformulated in the light of my findings for hypothesis 1:

*2b. When the particle DOWN combines with a non-accomplishment verb it becomes an accomplishment **except** when the verb already encodes a directed motion event.*

3.7 Results for hypothesis 2b

22 non-accomplishment verbs encode a directed motion event. When these verbs are discounted from the original 88, the results are as follows:

- Of 66 non-accomplishments verbs:
 - 53 became accomplishments when DOWN was added (80%)
 - 5 showed no change in aspect (8%)
 - 8 (atelic) verbs became achievements (12%)

The majority of the verbs that remain problematic for hypothesis 2b are those that become achievements rather than accomplishments. To take account of this the hypothesis was weakened to give hypothesis 2c:
*2c. A VP which is atelic becomes telic when DOWN is added **except** when the verb encodes a directed motion event.*³

3.8 Results for hypothesis 2c

63 of the verbs that combined with DOWN were atelic:

Activity verbs (52)		Semelfactive verbs (11)	
8 remain activities	(15%)	9 become accomplishments	(82%)
33 become accomplishments	(64%)	2 become achievements	(18%)
11 become achievements	(21%)		

- Of 63 verbs that were not telic:
 - 55 became telic when DOWN was added (87%).
 - 8 showed no change in aspect (13%) (6 encode directed motion)

Again, the 6 verbs encoding directed motion events can be discounted on the basis that they carry a purely spatial meaning rather than an aspectual one. The remaining data therefore shows that the particle adds an end-point to an atelic verb phrase in 55/57 cases (96.5%). These results uphold hypothesis 2c.

3.9 Summary of results for DOWN

The findings for DOWN are summarised in the following table:

Table 1 Results for DOWN

	Removes feature from verb	Adds feature to non-accomplmt verb	Adds feature to non-accomplmt verb when verb does not encode directed motion	Adds a telic feature to atelic verb when verb does not encode directed motion
DOWN	0%	75%	94%	96.5%

³ A telic verb phrase is a verb phrase that has a definite end-point.

4. Results for OUT

We will now look at the results collected for the particle OUT, beginning with a discussion of hypothesis 1 and then moving on to the 2nd hypothesis. The original hypothesis 1 was:

1. Particles add aspectual features to verbs.

The data for OUT produced the following results.

4.1 Results for hypothesis 1

Aspect of OUT

231 verbs combine with OUT

111 are activities (48%)	28 are semelfactives (12%)
42 are achievements (18%)	2 are states (1%)
3 are underspecified (1%)	45 are accomplishments (20%)
	NB14 do not occur without PP/particle

The data contained 3 aspectually underspecified verbs and 14 verbs that are grammatically unacceptable when they occur without a PP or a particle. All 17 verbs were discounted, leaving 212 verbs:

- OUT **adds** a feature to the aspect of the verb in 130/212 (61.5%)
- OUT **does not add** to the aspect of the verb in 82/212 (38.5%)

Again, contrary to Brinton's (1988) claim, these results do not fully uphold the hypothesis that particles add an aspectual feature to the verb. Therefore the weakened version of hypothesis 1 was used a second time:

1b. Particles do not remove aspectual features from the verb.

4.2 Results for hypothesis 1b

When reconsidered in the light of this hypothesis, the data produced the following results:

- OUT removes an aspectual feature from the verb in 0.5% of cases (1)
- OUT **does not** remove a feature from the verb in 99.5% of cases (211)

The results for OUT upheld hypothesis 1b, that particles do not remove features from verbs, giving yet more evidence in favour of a monotonic and compositional approach to verbal aspect.

However, as with the results for DOWN, there remain a significant number of cases in which the particle does not add an aspectual feature to the verb. Of the 81 verbs that showed no change when OUT was added, 31 are accomplishment verbs. Once again these verbs were discounted on the basis that the particle cannot be said to add an aspectual feature to these verb phrases as they already have the most fully specified event structure possible. Hypothesis 1c was reused to test the remaining data:

1c. Particles add aspectual features to non-accomplishment verbs.

4.3 Results for hypothesis 1c

45 accomplishment verbs were discounted, leaving 181 verbs:

- OUT **adds** a feature to the aspect of the verb in 128/181 (71%)
- OUT makes **no** addition to the aspect of the verb in 53/181 (29%)

There are, however, still 52 verbs which show no change in aspect when OUT is added. As with the results for DOWN, these 52 verbs were examined for any patterns that might suggest why they behave differently.

4.4 Verbs which do not change aspect when OUT is added

The results show that of the 52 verbs that do not change aspect, 31 are activity verbs. Many of these verbs belong to certain verb classes:

- 7 are substance emission verbs (*gush, leak, ooze, pour, seep, spew, spurt*)
- 7 are verbs of sound/light emission (*blare, blast, boom, peal, scream, shine, shout*)
- 4 are verbs of change of possession (*hire, lend, loan, rent*)
- 4 are verbs of perception (*look, peer, stare, watch*)
- 2 are verbs of assuming a position (*lean, sprawl*)

One group of verbs that stands out clearly from the others are the 14 verbs that encode some type of emission. To be more precise about their semantic content, these verbs inherently encode movement of a stimulus or a substance from inside a bounded space to an outer, non-bounded space

(i.e. *The bath leaked, Blood oozed from my arm*). The unacceptability of the following examples illustrates the point:

- (3) a. *Water poured into the bucket but not from anywhere
 b. *Oil spewed into the sea, but not from anywhere
 c. *Blood spurted onto the window pane, but not from anywhere

These examples show that the notion of movement of a substance from a bounded source is inherent to the verb. The substances and stimuli involved are typically fluid or without physical form, which would make measuring movement of the subject over time extremely difficult. Therefore, measuring the event on a temporal scale becomes virtually impossible and the need for an aspectual marker is negated. Again, the obvious alternative is that the particle carries a spatial meaning, which would fit well with the motion encoded in these verbs. Indeed, as with DOWN, the verbs in question already seem to have encoded in them the fact that the motion is in an outward direction. The particle OUT appears merely to confirm or make explicit what is already encoded in the verb i.e. movement out of a bounded space, and this is an aspectually neutral concept. This explains why in these cases the particle does not add an aspectual feature to the VP.

Of the other verbs that do not change aspect when OUT is added, 3 are semelfactives (*hit, kick, lash*). These 3 verbs are ‘contact by impact’ verbs, a semantic class which is a subset of the verbs which encode directed motion. 17 are achievement verbs. Again, most of these verbs belong to particular semantic classes:

- 3 are BREAK verbs (*break, burst, snap*)
- 10 verbs encode directed motion (*blurt, come, drop, fall, go, post, ?send, slip, spill, spit*)

This analysis has shown that 29 of the 52 verbs that do not change aspect when OUT is added share the semantic element of directed motion. As the results show a similar pattern to the results for DOWN, it seemed appropriate to reuse hypothesis 1d:

1d. Verbs already encoding directed motion do not change aspect when the particle OUT is added.

4.5 Results for hypothesis 1d

The data showed that of 181 non-accomplishment verbs which combine with OUT, 36 encode directed motion.

- 30 show no change when OUT is added (83%)
- 6 change aspect when OUT is added (17%)

As with the particle DOWN, the results tend to uphold hypothesis 1c, leading to the reformulation of the hypothesis as follows:

*1e. When the particle OUT combines with a non-accomplishment verb it adds an aspectual feature **except** when the verb encodes a directed motion event.*

This leads us on to the second hypothesis, which was:

2. VPs that do not take accomplishment readings become accomplishments when a particle is added.

4.6 Results for hypothesis 2

- Of 181 non-accomplishment verbs, 96 became accomplishments when OUT is added (53%)
 - 51 showed no change in aspect (28.5%).
 - 33 (atelic) verbs became achievements (18%)
 - 1 achievement verb became an activity (0.5%) (*sound*)

These results did not fully uphold the hypothesis, so I reformulated the hypothesis in the light of my findings for hypothesis 1:

*2b. When the particle OUT combines with a non-accomplishment verb it becomes an accomplishment **except** when the verb encodes a directed motion event.*

4.7 Results for hypothesis 2

36 of the non-accomplishment verbs encode a directed motion event. When these verbs are discounted, 145 verbs are left:

- Of 145 verbs that were not accomplishments:
 - 96 became accomplishments when DOWN was added (66.5%)
 - 22 showed no change in aspect (15%)
 - 26 (atelic) verbs became achievements (18%)
 - 1 achievement verb became an activity (0.5%) (*sound*)

These results show that, once again, many of the verbs that are problematic for the hypothesis are those which become achievements rather than accomplishments. The hypothesis was therefore refined once more to take account of this:

*2c. VPs that are atelic become telic when OUT is added **except** when the verb encodes a directed motion event.*

4.8 Results for hypothesis 2c

140 of the verbs that combined with OUT were atelic:

112 Activity verbs	27 Semelfactive verbs
57 become accomplishments (51%)	15 become accomplishments (55.5%)
24 become achievements (22%)	9 become achievements (33.5%)
31 remain activities (27%)	3 remain semelfactive (11%)

1 state verb became an accomplishment.

- Of 140 atelic verbs:
 - 106 became telic when DOWN was added (76%)
 - 34 showed no change in aspect (24%)
 - 19 encode directed motion

When the 19 verbs encoding directed motion events are discounted, the remaining data show that adding a particle adds telicity to an atelic VP in 106/121 cases (88%). These results uphold hypothesis 2.1.

4.9 Summary of results for OUT

The findings for OUT are summarised in the following table:

Table 2 Results for OUT

	Removes feature from verb	Adds feature to non-accomplmt verb	Adds feature to non-accomplmt verb when verb does not encode directed motion	Adds a telic feature to atelic verb when verb does not encode directed motion
OUT	0.5%	71%	83%	88%

5. Conclusion

In conclusion I will outline the main findings of this analysis of DOWN and OUT, and will then draw out the implications of these findings for our understanding of English particles.

5.1 Summary of findings

The hypotheses which best account for my data are as follows:

1b. Particles do not remove aspectual features from the verb.

This hypothesis accounts for: 100% of verbs that combine with DOWN
99.5% of verbs that combine with OUT

This gives important evidence in support of a monotonic and compositional theory of verbal aspect, as it shows that an aspectual element can be **added** to the verb by a particle but **cannot** be removed.

*1e. When a particle combines with a non-accomplishment verb it adds an aspectual feature **except** when the verb already encodes a directed motion event.*

This hypothesis accounts for: 94% of verbs that combine with DOWN
83% of verbs that combine with OUT

*2c. VPs that are atelic become telic when a particle is added **except** when the verb encodes a directed motion event.*

This hypothesis accounts for: 96.5% of verbs that combine with DOWN
88% of verbs that combine with OUT

6. Theoretical implications

What is most striking about these results is that the particles DOWN and OUT show such similar patterns of behaviour, particularly in terms of the contribution they make to the aspectual properties of the VPCs in which they occur. Hypotheses 1e and 2c provide an important constraint to the common assumption that the basic function of the particles DOWN and OUT is to add an end-point to the verb. The data shows that both DOWN

and OUT do not combine with all verbs in the same way, and that they sometimes have a different function when they combine with verbs from different semantic classes. Specifically, the results show that verbs encoding directed motion events display a consistently different pattern of behaviour to other verbs when they combine with the particles DOWN and OUT. We suggest two possible explanations for this difference in behaviour.

The first explanation is that particles that combine with directed motion events are spatial in nature and neutral with regard to aspect. Therefore there is no change in aspect when the particle is added as particles which are spatial in nature do not add aspectual features to the verb. This leads us to suggest further that the semantics of the verb determines which particles it can combine with, i.e. directed motion verbs choose spatial particles, whilst other verbs choose aspectual particles.

The second explanation is that all particles are aspectually neutral, but can receive aspectual properties from the event structure of the verb phrase. This explanation arises from the fact that the majority of the activity verbs that become accomplishments when a particle is added also become transitive if they are not transitive already as in the examples *She acted/She acted out the event*, or *I hunted/I hunted down the fox*. However, many of the verbs which do not change aspect when a particle is added also tend to remain intransitive, e.g. *It teemed/rained/poured down* or *The music blared/blasted out*.

The event structure model put forward in Levin and Rappaport-Hovav (1998) provides a framework which can describe how event structure can assign aspectual properties to the particle. The main concept behind this theory is that verbal aspect is built up from the smallest unit, i.e. the verb root, to the largest unit in such a way that semantic elements can be added but not lost. In this article Levin and Rappaport-Hovav propose the following ‘event templates’ which are types of structural meaning:

- | | |
|---|-------------------|
| [X ACT] | - activity |
| [[x ACT] CAUSE [BECOME [y <STATE>]]] | - accomplishments |

Levin and Rappaport-Hovav claim that an activity verb has one subevent: a causing activity; whereas an accomplishment VP has 2 subevents: a causing activity and a change of state. Accomplishment verbs ‘require the obligatory expression of both the subject and the direct object’ since ‘each realizes a structure participant, one associated with each subevent of the complex event structure of these verbs’. So ‘the causer argument realizes

the structure participant of the first subevent and the patient argument realizes the structure participant of the second subevent' (1998:117).

Levin & Rappaport-Hovav then propose a theory of Template Augmentation to explain how activity VPS become accomplishment VPs. They state that 'verbs have basic aspectual classifications which can be expanded in a monotonic fashion' through a process which allows event structure templates to be 'augmented up to other possible templates in the basic inventory of event structure templates' (1998:111). For example, activities can be expanded into accomplishments by the addition of a resulting state, which is 'signalled by an element in the syntax'. When an **ACTIVITY** becomes an **ACCOMPLISHMENT** it also 'requires a predicate in the syntax that can identify the second subevent introduced via Template Augmentation, as well as an argument in the syntax that is associated with this subevent'. So when a non-accomplishment VP becomes an accomplishment VP it needs another element in the syntax to express the change of state subevent that has been added, plus a direct object to realize the structure participant of this second subevent. If the VP is intransitive it must therefore license an aspectual particle to identify this second subevent and must also become transitive when the particle is added. This is illustrated in the following examples:

<i>I hunted</i>	→	<i>I hunted down the fox</i>
<i>I sewed</i>	→	<i>I sewed down the hem</i>
<i>I acted</i>	→	<i>I acted out the event</i>
<i>I weeded</i>	→	<i>I weeded out the nettles</i>

In this way the ES could license an aspectual particle to identify the change of state subevent, or impose an aspectual meaning on the particle so that it can represent this second subevent.

However, if the event remains an activity it does not require either an element to identify a second subevent or a second structure participant which is associated with this subevent. So the VP can remain intransitive, and the particle does not receive an aspectual function from the ES, and can therefore remain spatial.

<i>I looked</i>	→	<i>I looked out</i>
<i>Blood gushed from the wound</i>	→	<i>Blood gushed out</i>
<i>The water boiled</i>	→	<i>The water boiled down</i>
<i>The old man fell</i>	→	<i>The old man fell down</i>

This is an area that requires further thought and development, but which will provide the basis for some interesting discussion of Levin and Rappaport's work and further insights into the principles behind the semantic variation of the verb-particle combination.

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APPENDIX 1 - Verbs which combine with OUT

ACTIVITIES	SEMELFACTIV ES	ACHIEVEMENT	ACCOMPLISHMENTS	UNDER- SPECIFIED
act argue bawl blare blast block blow boom brush burn call camp carry chisel claw clean climb comb copy count creep cry dash dig draw drive drum fish fizzle fly follow grind grow gush hammer hang hide hire hold hunt hurry keep leak lean lend etc.	bang beat bounce breathe chuck clap hack hit jump kick knock lash leap lick peck pick point poke punch scratch slop sob stamp swab swing throw toss yank	break blurt burst come cut die drop fall feel find fill flush give go hand hatch hear lock mark move open pass post prick rip scrape see sell send separate slip snap sound spill spit start stick thrust tear tire vote win	ask bail blot board buy carve cast check clear crowd deck dine empty filter fling gouge hew hose iron ladle measure pad pay peg plant pluck print put rinse root scoop select set ship shove shovel sift sign smooth strain stretch strip thaw trace wring	bring get take
111 in total	28	42	45	3

APPENDIX 2 - Activity verbs that combine with OUT

<i>Verb-phrase</i>	Aspectual Type	<i>Transitivity</i>	Other notable features
<i>She acted</i>	Activity	N	
<i>She acted out the event</i>	Accomplishment	Y	
<i>They argued</i>	<i>Activity</i>	N	
They argued out the proposal	Accomplishment	Y	
<i>The radio blared (away)</i>	<i>Activity</i>	N	Becomes transitive with same obj NP
The music blared out	<i>Activity</i>	N	
<i>The wind blew</i>	<i>Activity</i>	N	
The candle blew out	Achievement	N	