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The *swarm* alternation revisited

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1.1 Introduction¹

English has a special construction which allows names of locations to act as subjects of certain verbs and adjectives (see Salkoff 1983, Levin 1993, Dowty 2000, 2001, Rowlands 2002). While normally, these verbs have agentive or thematic subjects, as in (1a, 2a), in this special construction the agent or theme is expressed by a prepositional argument, while the subject is a locative expression (cf. 1b, 2b). David Dowty has called the construction in (1a), (2a) the A-Subject-construction, and the one in (1b), (2b) the L-Subject-construction (Dowty 2000, 2001).²

- (1) a. Termites are swarming in my kitchen. [A-Subject construction]
 b. My kitchen is swarming with termites. [L-Subject construction]

¹This paper was presented at the conference ‘Theory and Evidence in Semantics,’ held on June 1, 2006, at the University of Groningen in honor of David Dowty. I am grateful to the audience, and especially to David Dowty, for their comments. It is my pleasure to acknowledge my indebtedness to David for his kind support and stimulating ideas which helped me along at crucial moments in my career in linguistics. I would also like to thank two anonymous reviewers for their comments and suggestions for improvement, and Gerlof Bouma and Erik-Jan Smits for some L^AT_EX first-aid. To Swarthmore College and its department of linguistics, I am much obliged for wonderful working conditions during the academic year 2005–2006.

²Somewhat confusingly, Dowty’s L-Subject-construction is not the same as Salkoff’s (1983) L-form. Salkoff’s L-form corresponds to Dowty’s A-Subject-construction, whereas Dowty’s L-Subject-construction corresponds to Salkoff’s T-form (for “transposed form”).

- (2) a. Rumors are buzzing in Washington.
 b. Washington is buzzing with rumors.

The relation between (1a) and (1b), or (2a) and (2b), has been called the *swarm*-alternation, and sometimes been related to the *locative* alternation, cf. (3):³

- (3) a. Fred sprayed DDT onto the doorposts.
 b. Fred sprayed the doorposts with DDT.

Counterparts to this English alternation have been noted in French (Boons et al., 1976), Czech (Fried, 2005), and Serbo-Croatian (Vasina, 1995, cited in Dowty, 2000). Some French examples (adopted from Boons et al., 1976) are given in (4) below:

- (4) a. Les serpents venimeux pullulent dans ce parc
 The snakes poisonous swarm in that park
 ‘Poisonous snakes are swarming/congregating in that park’
 b. Ce parc pullule de/en serpents venimeux
 That park swarms of snakes poisonous
 ‘That park is swarming with poisonous snakes’
 c. Des bravos enthousiastes éclatèrent dans la salle
 The bravo’s enthusiastic resounded in the hall
 ‘Enthusiastic cheers resounded in the hall’
 d. La salle éclata de bravos enthousiastes
 The hall resounded of cheers enthusiastic
 ‘The hall resounded with enthusiastic cheers’

The alternation is not found in many other languages (Hindi (Narasimhan, 1998), Bangla (Khan, 1994)). Dutch (cf. Mulder, 1992) and German have a somewhat more complex pattern of alternations, involving three constructions, compare the sentences in (5)(Dutch), and (6)(German):

- (5) a. Mieren krioelen in de keuken [AGENTIVE SUBJECT]
 Ants crawl in the kitchen
 ‘Ants are crawling (in large numbers) in the kitchen’
 b. De keuken krioelt van de mieren [LOCATIVE
 SUBJECT]

³For a good discussion of differences between the swarm alternation and the load/spray alternation, see Rowlands 2002. Throughout this paper, the term ‘alternation’ will be used as a conventional metaphor, without any assumption or implicit commitment as to its theoretical status: whether we should view the constructions involved as linked derivationally in some way, or whether they should be viewed as two separate and independent constructions. See Dowty (2001) for discussion of this point.

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- ‘The kitchen is crawling with ants’
- c. Het krioelt van de mieren in de keuken [IMPERSONAL]
It crawls with the ants in the kitchen
‘The kitchen is crawling with ants’
- (6) a. Ameisen wimmeln in der Küche [German]
Ants swarm in the kitchen
‘Ants are swarming in the kitchen’
- b. Die Küche wimmelt von Ameisen
the kitchen swarms with ants
‘The kitchen is swarming with ants’
- c. Es wimmelt von Ameisen in der Küche
it swarms with ants in the kitchen
‘The kitchen is swarming with ants’

A similar 3-way alternation has been noted for Czech (Fried, 2005, p. 481):

- (7) a. V kuchyni voněla skořice
In kitchen smelled cinnamon[NOM]
‘Cinnamon smelled in the kitchen’
- b. Kuchyň voněla skořicí
Kitchen[NOM] smelled cinnamon[INSTR]
‘The kitchen smelled of cinnamon’
- c. V kuchyni vonělo skořicí
In kitchen smelled cinnamon[INSTR]
‘In the kitchen, it smelled of cinnamon’

The L-Subject-construction and the impersonal construction largely use the same predicates. There are some differences between the two constructions, however, in terms of predicate selection, to which I will return in section 1.4.

My main concern in this paper will be to provide the reader with an overview of the *swarm*-alternation in Dutch, using corpus data from a sample of 1250 sentences, collected from the Internet and whatever books, journals or magazines I happened to read during the past 10 years or so. This overview will shed some new light on the status of the alternation, in particular David Dowty’s dynamic texture hypothesis, but it is also interesting for its own sake, since there is virtually no literature on *swarm*-type constructions in Dutch. Before we look at Dutch, however, it will be useful to briefly turn to the situation in English.

1.2 Classification of predicates

Dowty (2001, p. 172), building on earlier work by Salkoff (1983), distinguishes 5 semantic classes of predicates that may be used in the L-Subject-construction, denoting:

1. Small local movements, typically occurring repetitively: crawl, drip, bubble, dance, dribble, erupt, flow, foam, froth, gush, heave, hop, jump, ripple, roil, rumble, run, shake, shiver, throb, vibrate, pulsate
2. Animal sounds and other simple sounds, often repetitive: hum, buzz, be abuzz, twitter, cackle, chirp, whistle, hiss, fizz, creak, boom, rustle, resonate, resound, echo
3. Kinds of light emission: beam, blaze, be ablaze, brighten, flame, glow, flicker, flare up, flash, glimmer, glisten, glitter, light up, shimmer
4. Smells and Tastes: reek, smell, be fragrant, be redolent, taste
5. Degree of occupancy/abundance: abound, brim, teem, be rich, be rife, be rampant

The ‘simple’ predicates all involve a type of action or process that is easy and quick to perceive. According to Dowty, it is easier to establish whether a fountain or a swamp is bubbling than whether a cow is grazing, and this difference is argued to explain the difference between (8a) and (8b):

- (8) a. The swamp is bubbling with noxious gases.
b. *The meadow is grazing with cows.

Dowty is careful to place this restriction at the level of individual predicates, and not at the level of the sentences in which they occur. Quite frequently, the object of *bubbling with* is some abstract noun, and it may in fact be a lot easier as well as faster in a real-world setting to observe that a cow is grazing than it is to find out whether someone is bubbling with anticipation or whether Utah is bubbling with cultural activities. Presumably once a verb or adjective is permitted in the L-Subject-construction, it may be used quite generally to describe arbitrary situations, regardless of how easy to perceive the situation is. Indeed, the proper place for the alternation, as envisaged by Dowty, is in the lexicon. The *swarm*-alternation has properties typical of lexical derivation, such as limited and variable productivity, as well as arbitrary lexical gaps. The variable productivity of the phenomenon is most obvious from cross-linguistic comparison: while Salkoff (1983) lists several hundred verbs and adjectives as appearing in the L-Subject-construction, Dutch only has several dozen, as far as I have been able to

establish. This is not because Dutch lacks verbs in the relevant classes, but because the construction is simply less productive.

As an aside to this classification, let me add that etymology should not reign supreme here. A predicate like *crawling* might be viewed as a verb of motion or as a verb of abundance. When we say that a place is crawling with police, we are not just noting the fact that the policemen are moving, but also that their number is very large. Motion is still relevant, because we cannot use *crawl* for inanimate objects, as in (9a, b), unless they can move (as in 9c):

- (9) a. *The jar is crawling with beans.
 b. *The cemetery is crawling with corpses (OK in “Evil Dead” setting)
 c. The city center was crawling with cars.

On the other hand, the policemen, while in motion, need not move according to the precise meaning of *crawl*, on all fours. Other uses of *crawl* noted in the Oxford English Dictionary, such as ‘moving slowly’ or ‘moving in a stealthy way’, are also not entirely apt for the abundance reading.

More striking still than *crawl* is the case of *lousy*, which does not fit comfortably in any of the 5 categories if we just consider its basic meaning. However, usage in the L-Subject-construction suggests that it is a predicate of abundance:

- (10) a. Saudi Arabia is lousy with princes.
 b. Philadelphia is lousy with murals.

Of the 5 classes identified by Dowty, the predicates of abundance are in my view the most central: if a predicate is used metaphorically, or without a clear relation to its etymology, it will be a predicate of abundance, not one of smell or light emission, or motion, or sound. They also appear to have the highest text frequency of all classes.

The 5 classes of predicates all serve to characterize a location in a holistic manner. One of the main differences between *Bees are swarming in the garden* and *The garden is swarming with bees*, is that the former sentence is about bees, and the latter about the garden. Another difference concerns the role of the location. In *Bees are swarming in the garden*, only a small part of the garden need be characterized by the presence of bees. On the other hand, to say that the garden is swarming with bees seems to imply that the entire garden is affected by the swarming bees. It seems reasonable to suppose that the abundance interpretation, which I claim to be associated with some predicates of motion, such as *crawl*, stems from this total affectedness requirement.

If your entire garden is characterized by the crawling of ants or the swarming of bees, then that would entail that the amount of ants or bees is high.

Another property of the L-Subject-construction noticed by Dowty is that the objects of *with* tend to be indefinites, usually bare plurals or mass nouns. This suggests that individuation of the agents is suppressed or undesirable in this construction. The examples in (11), taken from Dowty (2000, p. 123), illustrate this point:

- (11) a. The room swarmed with mosquitoes.
 b. The room swarmed with a hundred mosquitoes.
 c. ??The room swarmed with seventy-three mosquitoes.
 d. My philodendron is crawling with dozens of snails.
 e. ??My philodendron is crawling with fifty-seven snails.

However, Dowty also noted some apparent exceptions to this generalization, such as

- (12) The whole school buzzed with the rumor about the principal and the librarian.

While the object of *with* is a definite singular in this example, the sentence is nonetheless fine. Dowty argues that this is because we interpret the sentence to imply that there were many repetitions of the rumor. While the rumor itself may be unique as a type, there are as many tokens of it as there are retellings of the story. While examples like (12) are actually quite rare, there are also cases like (13), which are somewhat more common:

- (13) a. The hills are alive with the sound of music.
 b. The school resounded with the laughter of happy pupils.
 c. The air reeked with the odor of burning flesh.

These were argued in Woisetschlaeger (1983) to be definites with the distributional characteristics of indefinites, as is clear from the fact that they appear without any problem in existential sentences. Note also that we can paraphrase all the examples rather precisely using just bare nominals:

- (14) a. The hills are alive with musical sounds.
 b. The school resounded with happy-pupil laughter.
 c. The air reeked with burning-flesh odor.

From a small sample of 184 English examples, informally collected from books and newspapers I read during the preparation of this paper, I tabulated the types of noun phrases acting as objects of *with*, and

these are presented in Table 1:

Table 1: *Objects of with*

a(n) + singular	5	3%
numeral + plural	2	1%
def. NP	7	4%
the N of N	10	5%
something like N	1	0.5%
bare N	159	86%

Note that pseudo-definites like *the sound of sleigh bells* or *the pitterpatter of little feet* are actually more common, in this construction, than regular definites like *the rumors about Brad and Angelina*.

The predominance of bare nouns in the L-subject construction is evidence for Dowty’s *Dynamic Texture Hypothesis*. This hypothesis says, in brief, that locations are described by predicates which describe small and frequently repeated events in such a way that the predicates may apply equally well to each subpart of the location. These subregions are small and manifold, and create a “texture of movement” perception (to use Dowty’s term). This is reminiscent, of course, of the effect of bare nominals on aspectual classes of verbal projections, a matter investigated at length in Dowty (1979). Whereas *build a house* is a telic predicate, *build houses* or *build furniture* is atelic. Each part of the process of building houses can be denoted by the same predicate *build houses*, whereas a proper subpart of building a house may not be termed *building a house*. E.g. if Jones was building houses between January and July, then he must have been building houses between March and May as well, even if he only built part of a house in that period. But if we know that Jones built a house between March and July, we may not conclude that he built a house between May and July, or between March and June. Bare plurals and mass nouns have the property of turning telic transitive verbs into atelic ones, because their denotations are closed under subparts. This is also why they fit in nicely with the dynamic texture hypothesis. In Dowty’s words (2001, p. 177), “[t]his follows from the fact that an event occurs in every small subpart of the region, therefore each event has its own agent in that region. If the regions are so small as to create a texture-perception, then the minimal regions can’t be clearly individuated or counted. There must be an agent in each of these regions, hence the total number of agents cannot be counted either.”

1.3 Predicates in the Dutch *swarm*-construction

In Dutch, the 5 classes of predicates identified by Dowty can be found as well. On the basis of a sample of 1250 occurrences, from the year 1600 onwards, gathered mainly from the Internet⁴ and personal reading, we can discern a gradual increase in productivity of the L-Subject-construction, even though our data are necessarily skewed toward the more recent periods. Especially rare predicates will therefore be underrepresented for the older periods. Noteworthy is the large number of verbs ending in *-eren/-elen*. Such verbs are traditionally referred to as frequentatives and intensives (cf. Jager, 1875–1878).⁵ The full list is given in the Appendix. The table given there gives an indication of the growth of the set of predicates in the period 1600–now, as well as of the types of predicates involved.

It is clear, that the set of predicates involved in Dutch is roughly similar to that of English. Verbs and verbal idioms of sound and light emission, verbs of smell and motion are all attested, as well as verbs of abundance. Some do not appear to fit in so well, such as a group of predicates indicating life and death, illustrated by the examples in (15):

- (15) a. Het leeft hier van de konijnen
 It lives here of the rabbits
 ‘This place is alive with rabbits’
- b. Het sterft hier van de konijnen
 It dies here of the rabbits
 ‘This place is teeming with rabbits’
- c. Het stikt hier van de konijnen
 it chokes here of the rabbits
 ‘This place is swarming with rabbits’
- d. De weide was vergeven van de konijnen
 The field was poisoned of the rabbits
 ‘The field was alive with rabbits’

⁴Internet examples are mostly from the Digital Library of Dutch Literature (www.dbnl.org), where a huge collection of Dutch texts from all periods is brought together. For rare predicates, other sites were accessed as well, using the Google search engine.

⁵Verbs in *-elen/-eren* often have counterparts in English in *-re/-le*, e.g. *tikkelen* – tickle, *flikkeren* – flicker, *smokkelen* – smuggle. The nature of these English verbs was already noted by Samuel Johnson in his *Grammar of the English Tongue* (part of his famous 1755 Dictionary, cf. Kolb and Demaria (2005, p. 337)): “If there be an l, as in jingle, tingle, mingle, sprinkle, twinkle, there is implied a frequency, or iteration of small acts.”

Although their etymology might not suggest it, the predicates in this set are verbs of abundance. The translations suggest that this group also exists in English, albeit on a smaller scale, with *alive* (cf. example 14a above). Similar cases with *choke* are also found, although the relation to real or metaphorical choking is more direct in English than in Dutch:

- (16) a. The freeways were choking with traffic
 b. Fido choked with passion when he smelled the bitch

Many expressions that would seem to be predicates of light emission, such as *zwart zien* ‘look black’, can also be used as predicates of abundance:

- (17) a. De kamer zag zwart van de rook
 The room saw black of the smoke
 ‘The room was black with smoke’ (blackness caused by smoke)
 b. De stad zag zwart van de mensen
 The town saw black with the people
 ‘The town was abounding with people’ (large number of people)

The differences may be subtle in individual examples, given that a place abounding with people may look dark because of the color of their attire, or because they block the light. It is clear, however, that sentences like (17b) normally refer primarily to the large number of the people.

1.4 Locative and other subjects

Dowty’s L-Subject-construction is so-called because of the locative subject it displays. However, not in all cases the subject appears to be locative in nature. Consider e.g.:

- (18) a. John’s voice was dripping with sarcasm
 b. John’s beard was dripping with blood

While it may be natural to say that John’s beard is the location of a certain amount of blood, it does not make as much sense to say that John’s voice can ever be the location of sarcasm. Of these two sentences, only (18b) has a counterpart with a locative PP:

- (19) a. *Sarcasm was dripping from John’s voice
 b. Blood was dripping from John’s beard

Instead, I would prefer to say that John’s voice was characterized, to a high degree, by sarcasm. Note that it is not sufficient to say that (18a) has an idiomatic or metaphorical interpretation. If we claim that John’s

voice is some metaphorical location in (18a), it is not entirely clear why (19a) does not support the same metaphor. Spatial metaphors, like the ones in (20), tend to be quite versatile:

- (20) a. You will always have a place in his heart
 b. He has a big heart: there will always be room for another honey
 c. My heart is filled with joy
 d. My heart was empty when she died

Human subjects can be found in the L-Subject-construction, and not always in a strictly locative interpretation. Of course, a human body can be a location, but it is not entirely clear to me that this is the case with the examples in (21):

- (21) a. When they were flush with cash, the city was flush with heroin
 b. Dick was white with humiliation and fury
 c. Thick with excitement, I ran around the office
 d. Amy was oozing with pride
 e. Orthodox families are flush with children

Flush is a predicate of abundance. Being flush with cash means having a lot of it. Can we say that the owner of the cash is in some sense its location? Some metaphors seem to suggest this, for example, we say that someone who is flush with cash is loaded. Yet this seems tenable only up to a point. Compare:

- (22) a. In John's house, the kitchen was crawling with ants.
 b. In John's house, Amy was oozing with pride.

While (22a) allows us to conclude that part of John's house was crawling with ants, (22b) does not seem to permit the inference that part of John's house is oozing with pride. Yet if all that Amy is doing in (22b) is providing a location for the pride, and if Amy is in John's house, then that inference should be valid, simply because of the transitivity of the localization relation: if X is localized in Y, and Y is localized in Z, then X is localized in Z as well.

The difference between true locatives and other subjects appears to be relevant in Dutch for the choice between personal and impersonal constructions. While there is a slight predominance of impersonal constructions in general (in my material, 52% of all sentences are impersonal, and 48% personal), the impersonal construction is avoided when the subject cannot be locative. Compare what happens with the verbs *stikken* 'choke' and *barsten* 'burst':

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- (23) a. De vijver stikt van de kikkers
 The pond chokes of the frogs
 ‘The pond is crawling with frogs’
- b. Het stikt van de kikkers in de vijver
 It chokes of the frogs in the pond
 ‘The pond is crawling with frogs’
- c. Jan stikt van de jaloezie.
 Jan chokes of the jealousy
 ‘Jan is choking with jealousy’
- d. *Het stikt van de jaloezie in/bij Jan
 it chokes with the jealousy in/with Jan
 ‘Jan is choking with jealousy’
- (24) a. Amerika barst van de illegalen
 America bursts of the illegals
 ‘America is rife with illegal aliens’
- b. Het barst in Amerika van de illegalen
 It bursts in America of the illegals
 ‘America is rife with illegal aliens’
- c. Marie barst van verlangen
 Marie bursts of desire
 ‘Marie is bursting with desire’
- d. *Het barst van verlangen in/bij Marie
 It bursts of desire in/with Marie
 ‘Marie is bursting with desire’

In Table 2, the distribution over personal and impersonal constructions is given, based on my corpus. Only the most common verbs are included in the table:

Table 2: Impersonal versus Personal

Verb	Translation	Imp	Pers	% Imp
barsten	burst	42	51	44%
bol staan	be round	1	69	1%
bulken	abound	1	17	6%
gonzen	buzz	36	19	65%
grimmelen	swarm	12	14	46%
krioelen	crawl	116	72	62%
leven	live	5	1	83%
sterven	die	14	3	82%
stikken	choke	67	16	81%
vergeven	poisoned	5	38	12%
wemelen	teem	251	98	72%
weergalmen	resound	0	11	0%

One of the more common idioms, *bol staan*, meaning ‘be round, pumped up, bloated’, is not all that often predicated of typical locations, but mostly of such things as newspapers, magazines and similar names for texts and containers of texts, although other subjects also occur. Compare:

- (25) a. De kranten staan bol van de geruchten over
 The papers stand round of the rumors about
 Berlusconi
 Berlusconi
 ‘The papers are replete with rumors about Berlusconi’
- b. Het Nederlands elftal staat bol van het talent
 The Dutch team stands round of the talent
 ‘The Dutch team is overflowing with talent’

For the 70 occurrence of this predicate, I found the following distribution over semantic classes of subjects:

Table 3: *Subjects of BOL STAAN*

Subject type	N	%
Texts	39	56%
Locations	11	16%
Groups	5	7%
People	3	5%
Events	5	7%
Periods	5	7%
Other	2	3%

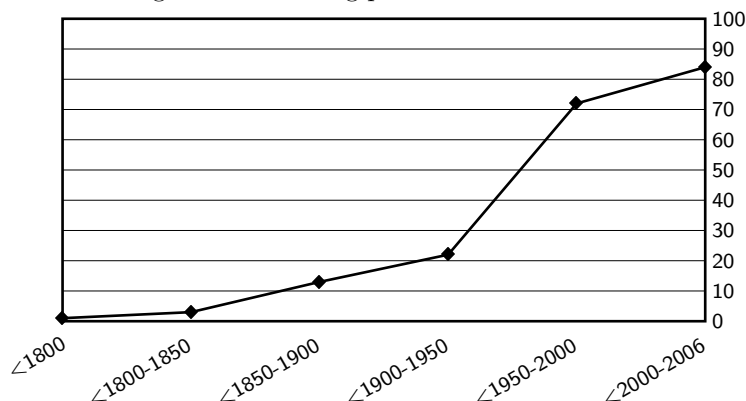
Given that locative subjects are not completely ruled out with this predicate, we expect to find that the impersonal construction is possible, and this appears to be true. Sentences like (26), while not attested in my small sample, are grammatical and can be found on the Internet:

- (26) Het staat er bol van de geruchten
 It stands there round of the rumors
 ‘It is rife with rumors’

1.5 Fake definites

One of the most surprising properties of the Dutch data is the predominance of definite noun phrases in the PP-argument (noted in Mulder 1992). As Table 1 has shown, definite noun phrases in that position are quite uncommon in English, where bare plurals and mass nouns are by far the most common choice. In my Dutch examples above, I translated many definite noun phrases with English indefinites, simply by leaving out the article. Why did I do that? Because the definites in question are fakes: syntactically, they may look like definites, but they are interpreted as indefinites. This is intuitively clear for anyone who has attempted to translate modern Dutch into English, or vice versa. The usual discourse requirements of unique reference do not apply to these cases. The use of the definite article in this construction is not only unusual, given that German and English do not have it, it is also fairly new. The older stages of the language do not show this usage at all. Figure 1 shows the rise of fake definites from 0% of all noun phrases in the *van*-complement in the 18th century to 84% at the moment. Whether a definite is fake or not, is of course a judgment call. I decided to count as definite all occurrences of noun phrases that I would translate into English as indefinites.

Figure 1: Increasing prevalence of fake definites



The use of fake definites is not easy to explain. There appears to be no reason whatsoever to use them, and every reason to avoid them. However, it should be pointed out that the use of expletive definites is not unheard of in Dutch. In a number of areas, Dutch uses the definite article without its usual definite interpretation, for instance in various measure constructions (cf. Corver and Zwarts, 2006, e.g.):

- (27) Hij heeft rond de tachtig koeien
 He has around the eighty cows
 ‘He has about eighty cows’
- (28) Hij is tegen de tachtig
 He is against the eighty
 ‘He is about/almost eighty years old’

The definite article in these cases depends on the presence of the items *rond/ tegen*. Without these prepositions, the articles are prohibited on an indefinite reading:

- (29) Hij heeft (*de) tachtig koeien
 He has the eighty cows
 ‘He has 80 cows’
- (30) Hij is (*de) tachtig
 He is the eighty
 ‘He is 80’

The choice of definite articles in the *swarm*-construction is still somewhat optional, and appears to be partly determined by syntactic complexity. For the most recent period, the data are distributed as indicated in Table 4. The percentage of spurious articles is highest among simple noun phrases consisting of just a noun, somewhat lower among

A+ N combinations, and lowest among conjoined and post-modified nouns.⁶ (The rare cases where no article was possible, e.g. because of the presence of a demonstrative determiner, were not included in the table.)

Table 4: *Complexity Classes*

Class	+ article	- article	%-article
N	299	19	6%
A+N	69	18	21%
N+PP, N+Rel-Clause	40	11	22%
N conj N	23	11	32%

The difference between simple nouns and complex noun phrases is highly significant. Collapsing the 3 types of complex noun phrases listed in Table 4, and comparing them with the simple nouns yields a χ^2 of 33.7, $p < 0.001$.

The appearance of definite articles is interesting not only for their bearing on the issue of noun phrase complexity. They also provide a clue for another aspect of the analysis. Linguists like Salkoff and Dowty, working on the *swarm*-alternation, have generally assumed that examples like (31a,b) both exemplify the L-Subject-construction:

- (31) a. The shore was jumping with people during Memorial weekend.
 b. Mary was jumping with anticipation when the package arrived.

Yet (31b) does not have a clearly locative subject, and Dowty's (2001) dynamic texture-hypothesis does not appear to apply to such cases. So the question is: Do these sentences really belong together, or do they represent different constructions? To answer this question, the Dutch data come in handy. Consider for example the sentences in (32):

- (32) a. De kust barstte van de mensen afgelopen weekend
 The shore burst of the people past weekend
 'Last weekend, the shore was jumping with people'
 b. Marie barstte van de zenuwen
 Marie burst of the nerves

⁶The relevance of modifiers was also noted in another connection in Salkoff (1983, pp. 292-3), where it was pointed out that indefinite singulars are sometimes possible in the T-type (Dowty's L-Subject-construction) when a modifier is present, whereas otherwise, this is not the case: His head reeled with hypotheses / ? an hypothesis / a curious idea / an hypothesis about God. It is conceivable that this observation is connected to the one in the main text about the absence of fake definite marking, although I do not yet see how.

'Marie was jumping with nerves'

We see the tell-tale sign of expletive definites in both examples, suggesting that yes, they belong together, as instances of the same construction. We can also use the test in another way, to exclude certain semantically similar sentence types. Kutscher and Schultze-Berndt (to appear) have suggested that the German examples in (33) are related to the English *swarm*-construction:

- (33) a. Der Baum hängt voll Früchte
The tree hangs full fruits
'The tree is full of fruit'
- b. Die Strassen lagen voll Schnee
The streets lay full snow
'The streets were full of snow'
- c. Beide Hunde saßen voll mit Metastasen
Both dogs sat full with metastases
'Both dogs were full of metastases'

These examples involve verbs of body posture with locative subjects. Indeed, the similarity is striking, with an interpretation that could easily support a translation into English using the L-Subject-construction, as in (34):

- (34) a. The tree is heavy with fruit
b. The streets were thick with snow
c. Both dogs were riddled with metastases

Dutch has an exact counterpart to the German construction:

- (35) a. De boom hangt vol vruchten
The tree hangs full fruits
'The tree is full of fruit'
- b. De straten lagen vol sneeuw
The streets lied full snow
'The streets were full of snow'
- c. Beide honden zaten vol metastasen
Both dogs sat full metastases
'Both dogs were full of metastases'

The Dutch linguist Wobbe de Vries already noted the similarities between this and the *swarm*-construction back in 1910 (cf. Vries, 1910). He also noted an obvious difference: instead of the preposition *van*, the adjective *vol* is employed. In 1910, quasi-definites could not be used to provide further evidence for distinguishing the posture-verb construction from regular *swarm*-cases, because the use of quasi-definites was

just beginning to emerge. Today, however, it is striking just how bad these examples become when we add definite articles to the examples in (35):

- (36) a. *De boom hangt vol de vruchten
 b. *De straten lagen vol de sneeuw
 c. *Beide honden zaten vol de metastasen

This suggests that the Dutch/German construction with the verbs of body posture, while semantically similar, must be viewed as nonetheless distinct from the *swarm*-construction.

1.6 Conclusion

Finally, let me say what I consider to be the core meaning of the *swarm*-construction. I do not think that David Dowty's dynamic texture-hypothesis captures it completely, partly because of the possibility of subjects that are not strictly locative, and partly because it does not fully come to grips with the fact that the construction expresses a high degree.⁷ More precisely, I take the construction to be a causative degree construction. The object of *with* causes the subject to exhibit a high degree of some property by completely affecting it. Consider in this light the question-answer pairs in (37-39):

- (37) Q: Were there many tourists?
 A: The streets were crawling with them
- (38) Q: Was John angry?
 A: He was foaming with fury.
- (39) Q: Was the crowd loud?
 A: The walls were vibrating with their cheers.

Note that all answers are affirmative, and could be paraphrased as: "Yes, very."

The high-degree interpretation of the *swarm*-construction makes it compatible with adverbs like *just*, or *literally*, and less so with down-toners like *a bit* or *somewhat*:

- (40) a. Smith was just bristling with anger.
 b. The place was just crawling with ants.

⁷During the presentation of this material at the conference 'Theory and Evidence in Semantics', David Dowty objected to this point by noting that nonlocative interpretations were typically idiomatic, e.g. John was boiling with anger or Mary was limp with laughter. This point is well-taken, but I would like to stress that Dowty's theory has nothing to say about these idiomatic cases, whereas they fit in perfectly with the analysis given here: they all express a high degree.

- c. The book is literally littered with typos.
 - d. The yard was absolutely lousy with vermin.
- (41) a. ??Smith was somewhat bristling with anger
 b. ??The place was a bit crawling with ants
 c. ??The book is a tad littered with typos
 d. ??The yard was a mite lousy with vermin

The oddness of the examples in (39) vis-à-vis the acceptability of those in (38) can be compared to the difference between predicates like *angry* and inherently high-degree predicates such as *livid* or *furious*:

- (42) a. Jones was absolutely angry.⁸
 b. Jones was absolutely livid/furious
 c. Jones was a bit angry
 d. ??Jones was a bit livid/furious

The high-degree nature of the L-Subject-Construction might be related to the dynamic-texture hypothesis, but does not seem to follow from it. To see this point, consider once more the following example:

- (43) The book was littered with typos

The dynamic-texture hypothesis would state that the typos from an even pattern across the book, e.g. because there are ten on every page. The high-degree hypothesis, on the hand, would simply that that the book had a very high number of typos, regardless of their distribution across the book. Intuitively, the latter characterization would appear to me to be more nearly correct.

Finally, given my hypothesis, it should come as no surprise that the *swarm*-construction has an intonation typical of emphatic sentence types, such as exclamatives. The verb has to be accentuated, except under very limited circumstances, in particular when contrastive focus is used to correct an earlier claim:

- (44) a. The bar was just CRAWLING with cops
 b. *The bar was crawling with COPS [* in out of the blue context]
 c. The bar was crawling with COPS, not DRUNKS, you dummy!

Particularly striking is the possibility of emphatic lengthening. Emphatic lengthening is a phonetic process which is possible with some but not all degree expressions, such as English *so* or Dutch *zeer* ‘very’:

⁸The combination absolutely angry seems to be possible, to judge from numerous Google hits, but dispreferred to absolutely furious or absolutely livid. This adverb appears to select for predicates that either express scalar endpoints such as empty, impossible, or high degree expressions such as furious, ludicrous etc.

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- (45) a. You are SOOOOO right
 b. The kitching was just CRAAAAAAWLING with ants
 c. Het hotel was ZEEEER duur [Dutch]
 The hotel was very expensive
 ‘The hotel was extremely expensive’
 d. Het weeeeemelde daar van de agenten
 It crawled there of the policemen
 ‘The place was crawling with cops’

This option is entirely absent in the A-Subject-construction (or, for that matter, in any nonemphatic construction):

- (46) a. *Ants are CRAAAAAWLING in the kitchen
 b. *Mieren weeeeemelen in de keuken [Dutch]
 Ants crawled in the kitchen
 ‘Ants were crawling in the kitchen’

1.7 Appendix

Table 5: List of all Dutch predicates

Dutch predicate	Translation	Count
aan elkaar hangen	hang together	7
abonderen	abound	1
barsten	burst	93
blaken	be hot	4
blauw staan	stand blue/be blue	3
blauw zien	look blue	5
bleek worden	turn pale	1
blinken	shine	3
bol staan	be round	70
bruisen	whirl	12
bulderen	roar	2
bulken	roar	18
daveren	roar	12
denderen	roar, thunder	2
doorweekt	soaked, drenched	1
dreunen	resound	10
drijven	float, drip	3
druipen	drip	9
duizelen	be dizzy, dazzle	2
dwarrelen	twirl	2
flonkeren	twinkle	5
fonkelen	twinkle	3
galmen	resound	3
geuren	smell, reek	1
glimmen	shine	7
glinsteren	shine, sparkle	5
godvergeven	god-poisoned	1
gonzen	buzz	55
grielen	crawl	1
griemelen	crawl	1
grijs zien	look grey	1
grimmelen	crawl	26
groen zien	look green	1
kabalen	be noisy	1
kolken	whirl	1
krielen	crawl	53
krimmelen	crawl	1
krioelen	crawl	135

Table 5 continued

leven	be alive / live	6
loeien	bellow	1
miegelen	teem	13
op	used up	3
overkoken	boil over	1
overlopen	run over	3
overstromen	flow over	1
overvloeien	flow over	2
ritselen	rustle	11
rood zien	look red	6
schitteren	shine / sparkle	3
sidderen	shudder	1
smoren	smother / choke	2
spetteren	sputter	1
sterven	die	17
stijf staan	be stiff	13
stikken	choke	83
storm lopen	storm	1
stralen	radiate	1
suizen	sizzle	1
tinkeltwinkelen	twinkle	1
tintelen	tinge	7
trillen	trill	1
uit elkaar spatten	explode	1
uitpuilen	bulge	8
vergeven	poisoned	43
wedergalmen	resound	6
weergalmen	resound	5
wemelen	teem / crawl	349
wit zien	look white	5
zieden	boil	3
zinderen	be hot	10
zoemen	buzz	16
zwart	black	7
zwart staan	be black	16
zwart zien	look black / abound	37
zwermen	swarm	4
Grand total		1250

Table 6: Dutch predicates, by period

Period	Predicate	Count
1550-1600	abonderen	1
	Total	1
1600-1650	dreunen	1
	grimmelen	6
	krielen	3
	krimmelen	1
	krioelen	1
	Total	12
1650-1700	barsten	1
	daveren	2
	grielen	1
	griemelen	1
	grimmelen	6
	krielen	5
	krioelen	3
	overvloeien	1
	zwermen	1
	Total	21
1700-1750	barsten	2
	blinken	1
	daveren	1
	dreunen	1
	grimmelen	7
	krielen	14
	wedergalmen	4
	Total	30
1750-1800	daveren	1
	dreunen	2
	grimmelen	3
	krielen	13
	krioelen	1
	stikken	1
	wedergalmen	1
	weergalmen	1
	wemelen	1
	Total	24

Table 6, continued

Period	Predicate	Count
1800-1850	daveren	1
	glinsteren	1
	grimmelen	2
	krielen	6
	krioelen	3
	overvloeien	1
	rood zien	1
	wedergalmen	1
	weergalmen	1
	wemelen	28
	Total	45
1850-1900	aan elkaar hangen	1
	blinken	2
	bulken	1
	daveren	2
	dreunen	1
	flonkeren	1
	fonkelen	1
	glinsteren	2
	grimmelen	2
	krielen	7
	krioelen	11
	miegelen	1
	rood zien	1
	weergalmen	1
	wemelen	47
	zwart	2
	Total	83
1900-1950	aan elkaar hangen	2
	barsten	5
	blaken	1
	bleek worden	1
	bol staan	1
	daveren	3
	doorweekt	1
	dreunen	3
	flonkeren	1

Table 6, continued

Period	Predicate	Count
	glimmen	1
	glinsteren	1
	gonzen	2
	krielen	5
	krioelen	32
	leven	2
	miegelen	2
	op	1
	rood zien	1
	stikken	3
	suizen	1
	tintelen	2
	weergalmen	1
	wemelen	59
	wit zien	2
	zieden	2
	zinderen	1
	zoemen	6
	zwart	3
	zwart staan	11
	zwart zien	4
	zwermen	1
	Total	161
1950-2000	aan elkaar hangen	2
	barsten	28
	blaken	1
	blauw staan	1
	blauw zien	3
	bol staan	17
	bruisen	3
	bulderen	1
	bulken	1
	daveren	1
	denderen	1
	dreunen	1
	drijven	2
	druipen	1
	dwarrelen	1

Table 6, continued

Period	Predicate	Count
	flonkeren	1
	fonkelen	1
	galmen	1
	geuren	1
	glimmen	2
	gonzen	18
	grijs zien	1
	kolken	1
	krioelen	57
	leven	2
	miegelen	2
	op	2
	overlopen	1
	overstromen	1
	ritselen	3
	rood zien	1
	schitteren	1
	sterven	8
	stijf staan	2
	stikken	23
	stralen	1
	tintelen	2
	trillen	1
	uitpuilen	2
	vergeven	10
	weergalmen	1
	wemelen	104
	zieden	1
	zinderen	1
	zoemen	5
	zwart	1
	zwart staan	3
	zwart zien	8
	Total	333
2000-2007	aan elkaar hangen	2
	barsten	56
	bersten	1
	blaken	2

Table 6, continued

Period	Predicate	Count
	blauw staan	2
	blauw zien	2
	bol staan	52
	bruisen	9
	bulderen	1
	bulken	16
	daveren	1
	denderen	1
	dreunen	1
	drijven	1
	druipen	8
	duizelen	2
	dwarrelen	1
	flonkeren	2
	fonkelen	1
	galmen	2
	glimmen	4
	glinsteren	1
	godvergeven	1
	gonzen	35
	groen zien	1
	kabalen	1
	krioelen	27
	leven	2
	loeien	1
	miegelen	8
	overkoken	1
	overlopen	2
	ritselen	8
	rood zien	2
	schitteren	2
	sidderen	1
	smoren	2
	spetteren	1
	sterven	9

Table 6, continued

Period	Predicate	Count
	stijf staan	11
	stikken	56
	storm lopen	1
	tinkeltwinkelen	1
	tintelen	3
	uit elkaar spatten	1
	uitpuilen	6
	vergeven	33
	wemelen	110
	wit zien	3
	zinderen	8
	zoemen	5
	zwart	1
	zwart staan	2
	zwart zien	25
	zwermen	2
	Total	540
	Grand Total	1250

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