

Rule-based versus usage-based knowledge of *doubler-upper* nouns: A false opposition?

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Submitted to: *Cognitive Approaches to Word Formation*, Sascha Michel and Alexander Onysko (eds.). (Trends in Linguistics: Studies and Monographs.) Berlin / New York: Mouton de Gruyter.

Abstract

Jocular and colloquial reduplication of the *-er* suffix in derivations from phrasal verbs (e.g. *washer-upper*) is shown here to be very productive, on the basis of the high number of hapax legomena (one-off creations) found on the web. This structure is regular in the formation of the plural, which is consistently word-final (Blevins 2006) and it is more natural than its more frequent morphological rival with a single *-er* attached to the verb (e.g. *runner-up*, *passer-by*) in synthetic compounds (cp. *trash picker-upper* vs. *?*trash picker-up*). These facts show that the structure is not grammatically 'wrong'. Yet, as argued by McIntyre (2004), it remains too infrequent for learners to learn its properties by simple imitation, so we have to exclude a simplistic account based on the extraction and storage of a licensing double *-er* construction. Various existing explanations for the occurrence of double *-er* nouns are considered, with particular attention to the treatment offered by Ackema and Neeleman (2001/2004), according to which the double *-er* structure and its competitors (verb-*er*-adverb and the rare verb-adverb-*er* structure) result from the unavailability of adverb-verb compounds in English. My own analysis depends on the interaction of various general morphological rules (notably, head affixation and word-final affixation). However, this rule-based account does not mean that the creation of novel double *-er* nouns cannot be facilitated by a language user's familiarity with a stored instance like *fixer-upper* or that the rules themselves cannot be learned on the basis of evidence in the linguistic input.

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Rule-based versus usage-based knowledge of *doubler-upper* nouns: A false opposition?¹

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1. Double *-er* coinages: rare but regular visitors of the English language

In English, there is a rather odd way to form agentive nouns based on phrasal verbs: besides well-established cases where the *-er* suffix attaches to the verb, like *passer-by* and *runner-up*, one occasionally finds cases in which the *-er* suffix is attached to both the verb and the adverb, like *dropper-inner* and *washer-upper*. One's immediate reaction to such forms might be that they are intentional errors. For example, a respondent to an internet post about such forms writes: "I always thought "picker upper" is (or at least originated as) a joke form that deliberately breaks rules."² Indeed, the suffix *-er* is not meant to be doubled, nor is it meant to be attached to an adverb. That they are *deliberate* creations is supported by a quotation from the animation series *The Simpsons*, in which the incompetent lawyer and charlatan Lionel Hutz promotes himself as follows:

- (1) *Lionel Hutz, your new agent, bodyguard, unauthorized biographer, and drug dealer... er, keeper-awayer.* (www)

The triple occurrence of *-er* (not even counting the pause ...*er*) in the last noun undoubtedly serves to enhance the humorous effect created by the all too conspicuous denial of a criminal activity.

In this paper I want to show that such reduplication forms do not just deliberately break rules but that they also *obey* a number of rules. In fact, in the example just given, adding an *-er* to the adverb makes the agentive nominalization more acceptable than a nominalization without such a second *-er* (cp. *?*drug dealer... er, keeper-away*). In other words, doubling the *-er* may be the most felicitous option when deriving nouns from phrasal verbs. Moreover, if this form were plain wrong to start with, it would not matter how its plural is formed: whichever plural form based on a wrong

singular form is bound to be as wrong as the singular. Yet, we see a clear difference in acceptability between, e.g., **washers-upper* and *washer-uppers* (Blevins 2006: 514). So, even though double *-er* forms are not considered as Standard English, these two observations prove that they are not just performance errors either. Put differently, if this morphological structure *is* an error of some sort, then I agree with McIntyre (2004) that “it would have to be admitted that is a fairly natural kind of ‘error’ for many speakers.”

But herein lies a curious paradox: on the one hand, double *-er* forms are rather rare and sound as if they are made-up for the occasion; on the other hand, they seem to be a quite sensible choice in some usage situations and we may not find it hard to tell how these forms have to be further inflected. But how can we find this form (relatively) ‘natural’ and how can we make grammaticality judgments about alternative plural forms and other issues, if we hardly ever encounter this structure? To quote again from McIntyre (2004):

I don’t know if it’s a good idea to dismiss the construction as some sort of idiosyncratic constructional template perpetuated by imitation. Its actual text frequency is extremely low; even very advanced L2 English learners are mostly unaware of its existence. I have known about the problem since at least 1995, and have since then come across only two examples in normal interactions with English speakers (i.e. excluding corpus work, etc.). One wonders if this is enough for us to learn ‘picker upper(-er)’ by direct evidence, or whether it is somehow a natural response to the problem of how to affix left-headed structures given the less-than-wonderful status of non-reduplicative solutions (‘washer-up’, ‘wash-upper’) for a sizable set of speakers. (McIntyre 2004)

So, McIntyre’s question is: How does a speaker’s grammatical knowledge about this marginal structure arise if not as the result of frequent exposure to double *-er* instances? Clearly, this is a question which transcends the morphological phenomenon at hand, since it poses a challenge for usage-based accounts of language and language learning, like the ones proposed in, for example, Langacker (1988), Barlow and Kemmer (2000), Tomasello (2001; 2003) and Bybee (2006). In such accounts, linguistic competence has less to do with any innate general rules than with linguistic experience acquired via increasing familiarity with concrete usage forms. Double *-er* forms may be too infrequent to give rise to a routinized pattern, and hence would seem to cast doubt on the validity of usage-based accounts. I will claim that, even though double *-er* instances may not be sanctioned directly

by a double *-er* constructional schema and should instead more likely be seen as resulting from the application of various higher-level rules, these rules may themselves have come about as generalizations over multiple usage events. Therefore, a rule-based account of a linguistic phenomenon should not necessarily be considered as radically opposed to and incompatible with a usage-based account.

This text is organized as follows. In Section 2, I will discuss the question whether double *-er* forms are really so infrequent and whether they are all made for the nonce. It will be shown that they are indeed quite rare and that most, if apparently not all, double *-er* nouns are created on the spur of the moment. In Section 3, I will look at various attempts by other linguists to account for these nonce-usages. Most of these attempts are very tentative and sketchy, but there is at least one exception (Ackema and Neeleman 2001/2004) which deserves closer investigation. In Section 4, I will then offer an account in terms of interacting rules which conspire to bring speakers to produce double *-er* forms. In section 5, I will consider a closely related structure in which a second *-er* is added to a preposition rather than an adverb (e.g. *videogame writer-abouter*). In Section 6, I will reflect briefly and tentatively on what my analysis implies for usage-based theories. Section 7 succinctly summarizes the main views.

2. The extent of use of double *-er* forms

In this section I discuss how common (or not) double *-er* forms are in English. I first give a survey of the literature, at least with respect to this question and then formulate a hypothesis about their first appearance. Next, I report on original corpus research into the frequency and productivity of the double *-er* structure in present-day (British) English, showing that the structure is indeed quite infrequent, although one form (*fixer-upper*) has gained some currency and some other forms may be coined many times over, thus boosting their frequency. In a final subsection, I summarize my main findings and explore the role of imitation in the use of double *-er* forms.

2.1. Usage comments in the literature

All authors who have signaled the existence of the double *-er* type have given an assessment of its frequency or productivity, often accompanied by

a stylistic appreciation. The prevailing comment in the literature is that double *-er* forms are attested colloquialisms, as will appear from the following brief overview.³

Ackema and Neeleman (2001), who are among the few authors who have made a serious effort at accounting for the use of double *-er* forms, merely state that such forms “are attested in adult English” (p. 24). This formulation suggests that they realize that the reader may not have come across double *-er* forms and therefore needs some convincing of their occasional occurrence. Bauer (1983: 289) writes that double *-er* forms “tend to feel very clumsy, and as a result tend to be used mainly in colloquial speech”. Together with Huddleston, he later describes them as “non-standard nonce-words” (Bauer and Huddleston 2002: 1655). Bolinger (1971: 116) calls them “popular coinages”, which “began to multiply in the 1920’s and 1930’s”, a point that I will take up below. Blevins (2006:513) calls them “colloquial”, implying that they’re not part of the standard language. Busuttil (2001: 38), discussing a form like *doer-upper of houses*, comments that “we’re not dealing with an isolated example” (my translation). Farrell (2005: 103) writes that “it is customary to double *-er*” but adds that “[this structure] may not yet be fully conventional” (ibid.), although it “appears to be at least somewhat productive” (ibid., fn. 11). Miller (1993: 132) speaks of a “new productive pattern” and remarks that affixation which both precedes and follows the non-verbal part is not only one of the “logical possibilities” but also that all the possibilities “are found”. This latter addition implies his realization that the reader might be unfamiliar with the pattern and could have supposed that the double *-er* structure was *just* a logical possibility that had no attestation in actual use. McIntyre (2004) qualifies this attestation as “good attestation”, but we have also seen that he considers it very unlikely that individual speakers have encountered a sufficient number of such forms to be able to extract a re-usable pattern from them. We will come back to this later.

2.2. Earliest written occurrence: perhaps not before 1900

Perhaps the most interesting discussion of the usage of the structure (but not of its deeper motivation) is provided as early as in the year 1936, in the journal *American Speech*. The author, Wentworth, describes it as “[t]he current, popular, grotesque way of forming new low-colloquial and slang compound nouns” (Wentworth 1936: 369). Amid rather subjective judgments—Wentworth also wonders why “the evil genius of slang

permits *-er* [...] to be so misused” (p. 370)—we find valuable information about what must be the original distribution of this structure: it is “national [i.e. nation-wide] in occurrence, journalistic in origin, collegiate in vogue, and economical in expression of ideas” (p. 369).

While we will discuss the latter point (semantic economy) in Section 3.2, it is worthwhile to dwell on the question whether Wentworth really commented on a phenomenon that was still very recent when he wrote his article. The earliest occurrence of a double *-er* word that I could find in the OED dates from just a few decades earlier: a new draft entry (March 2006) of the OED mentions an instance dating back to 1913, taken from the *Chicago Sunday Tribune*: “For every fling-arounder..there is a busy little picker-upper”. This also seems to confirm what Wentworth writes, namely that its origins are journalistic. Wentworth lists 18 attested specimens of double *-er* nouns. Of these, I could find four more attestations in the OED, namely *fixer-upper*, *waker-upper*, *builder-upper*, and *tearer-downer*, and all of these are indeed from around the time of Wensworth’s article: 1932, 1935, 1936, and 1942, respectively. Note also that one of Laurel and Hardy’s short films, titled *The Fixer Uppers*, dates from 1935, the year before the publication of Wensworth’s article. It is possible that this title picks up on a then-trendy usage. Remember, finally, that Bolinger (1971) also considered the structure to have bloomed in the 1920s and 1930s. We have no idea what he based this claim on, but it seems to tie in with what we read in Wensworth’s article.

So, double *-er* forms appear in writing only in the twentieth century, and it is only in the nineteen twenties and especially nineteen thirties that its popularity gains momentum. Of course, given the more formal and conservatively edited nature of writing compared to spontaneous speech—a difference which might have been starker in the nineteenth century than in the twentieth and twenty-first century—the absence of evidence that double *-er* nouns occurred before 1900 should not be taken as evidence of their absence in the language.

2.3. Frequency and productivity in present-day English

There is no reason to believe that double *-er* forms they have spectacularly boomed since the 1930s. Otherwise, the authors cited in Section 2.1 would not have felt the need to underline the fact that they do at all occur. So, exactly how frequent are such nouns? To get an idea, I searched for instances in the BNC, a 100 million word corpus of current British English,

containing both written and spoken language. Since they should be seen as competitors of at least two other derivational patterns (verb-*er*-adverb and verb-adverb-*er*) I have looked for instances of these patterns as well. The results are given in Table 1.

Table 1. Number of types and tokens for three competing kinds of -*er* nominalizations derived from phrasal verbs in the BNC

	verb- <i>er</i> -adverb	Verb- <i>er</i> -adverb- <i>er</i>	verb- <i>er</i> -adverb- <i>er</i>
Types	56	3	2
Tokens	1,120	4	2

Adverbs searched for: *about, across, ahead, along, apart, around, aside, away, back, by, down, home, in, off, on, out, over, round, through, together, up*

Clearly, the double -*er* structure, whose quantitative data are given in the middle column, has much lower frequency than the *verb-er-adverb* pattern, both in terms of tokens (number of word hits) and in terms of types (number of distinct words, i.e. lexemes). This proves wrong a passing statement to the contrary in Ackema and Neeleman (2001: 24), where it is said, rather surprisingly, that the double -*er* structure is the most frequent of the three structures. The pattern with a single -*er* attached word-finally seems to be even more infrequent. There are only two instances of it in the BNC, and one of them is actually derived from a complete verb phrase with an object: *crunch-you-upper*. This word form is perhaps better analyzed as the output of an altogether different morphological process. Verb phrases turned into nouns can only have word-final suffixation: just like you cannot have *banner-the-bomb* or *banner-the-bomber* alongside *ban-the-bomber* (derived from *ban the bomb*), you cannot have **cruncher-you-up* or **cruncher-you-upper* as alternatives to *crunch-you-upper*. Given that such alternatives exist for the other (and true) corpus occurrence of the verb-adverb-*er* pattern (*try-outers*), we might say that there is in fact just one type, with one token, for this pattern in the BNC. Some further googling confirmed that this rare pattern is indeed very infrequent, even compared to double -*er* nouns. A search on Google.co.uk returned 78 phrasal verb derivations ending in *-uppers*.⁴ Only seven of them were of the verb-adverb-*er* pattern, namely *cover-uppers*, *dial uppers* (3 hits), *hurry-uppers* (2 hits) and *tidy-uppers*. We will see in Section 3.1 that the bisyllabic structure of the verb may play a role in the selection of this

derivational pattern. However, at least one phrasal verb consistently selects the verb-adverb-*er* pattern: someone who ‘comes out’ is typically referred to as a *come-outer* – a word attested in the OED – rather than as a *comer-out* or a *comer-outer*. Also, the word *hang-arounder*, which can also be found in the OED, seems to occur at least as frequently as its alternatives, *hanger-around* and *hanger-arounder*. Such individual preferences cannot deny the larger picture, which is that if frequency is used as a measure of productivity, then the verb-*er*-adverb pattern stands out as by far the most productive of the three patterns.

Another measure of productivity, proposed by Baayen and his co-workers (see, e.g., Baayen and Lieber 1991), is based on the proportion of lexemes that occur only once in a corpus, the so-called *hapax legomena*, or *hapaxes* for short. The idea behind counting hapaxes as a means of measuring productivity is that single-token types in a large corpus may very well correspond to neologisms in real use. Obviously, a necessary requirement for a pattern to be called productive is that it allows novel instances to be based on it, so using hapaxes as a measure of productivity seems to be a more valid way than just looking at the raw output of a pattern: for all we know, a pattern with many instantiations might have been very productive in the past while being unproductive in the present. In other words, we might prefer to look at a pattern’s “potential productivity” rather than its “realized productivity” (Baayen to appear).

The relationship between hapaxes and coinages is in fact an indirect one. The more productive a morphological pattern, the larger the set of possible types based on it, but even a decent-sized corpus may not contain all of the many possible types, especially not all of the still infrequent neologisms. Yet, it is to be expected that at least some of a pattern’s new offspring will nonetheless occur in the corpus, usually just once, and occasionally even twice or more often. Therefore, if there are many hapaxes instantiating a morphological pattern in a corpus, we can infer that language users ‘outside’ the corpus can create many new instances of that pattern, even though some or all of these hapaxes in the corpus may not actually be newly-coined and may already have been around in the language community for a long time. Hapaxes are therefore an indication of the potential to form neologisms, but should not be identified with neologisms themselves.

One of Baayens’ hapax-based measures of productivity is calculated by taking the quotient of the number n_l of hapaxes of a given pattern in the corpus and the total number N of tokens of all the words displaying that pattern in the corpus:

$$(2) \quad P = n_1/N$$

Applying this formula to the verb-*er*-adverb pattern, we can obtain a value for P by dividing the number of hapaxes for this pattern in the BNC, which is 44, by the number of its tokens in the BNC, which we already knew is 1,120. This yields a productivity P of 0.039. For the other patterns, though, the value of P cannot be calculated because the samples are too low. Indeed, the verb-adverb-*er* pattern has (at most) a mere two types with one token each. In other words, each of the two occurrences in the corpus is a hapax. This would mean that this pattern has total productivity ($P = 1$), a conclusion which runs counter to our intuitions. This is why it has been proposed that Baayen's productivity measure should not be used with sample numbers lower than 50 (cf. Bauer 2001: 151). Using again the internet, however, it was possible to sample a sufficiently large number of double -*er* occurrences. Numerical data for the double -*er* structure, compared with those of its most frequently used competitor, are given in Table 2.

Table 2. Number of hapaxes and tokens for the verb-*er* pattern and for the double -*er* structure, based on the BNC and on Google counts, respectively

	Verb- <i>er</i> -adverb	Verb- <i>er</i> -adverb- <i>er</i>
Hapaxes	44	92
Types	56	148
Tokens	1,120	460

Adverbs searched for on Google: *about, away, on, out, up, through*⁵

Applying the formula in (2) to the double -*er* structure, we obtain a P value of exactly 0.20, which is considerably higher than the P value for the verb-*er*-adverb pattern. Unfortunately, these two P values cannot be compared directly, since the corpora from which the figures have been drawn (the BNC versus pages from the UK on Google) are different in size and nature. Moreover, the search queries used to obtain the sample of forms ending in *outers* and *-uppers* (cf. note 4 for details) from Google differed from the more simple queries used in the BNC and from the other Google search queries involving *about, away, on* and *through*. Nevertheless, we can

safely conclude that the productivity value for the double *-er* structure, taken on its own, is fairly high: one in five of the double *-er* tokens collected in the UK pages of the internet are hapaxes. Given that this ‘corpus’ is a very large one indeed, capturing for all intents and purposes the language as used by a speech community in the real world, it is also safe to assume that many or most of these hapaxes are genuinely newly-coined words, that is, words that were not existing members of the vocabulary prior to their usage. Sure enough, just because they are used once on the internet, this does not turn them into well-established members of the English lexicon; they are therefore better termed ‘nonce-words’ rather than ‘neologisms’; see Bauer (2001: 38) for the distinction, which is based on the degree to which a coinage is familiar to a large enough set of the speech community. Conversely, many of the forms that have multiple web occurrences may not belong to a speech community’s shared norm. We will come back to this point later in this section.

An objection to the measure of productivity given in (2) has been made by Van Marle (1992: 156), who sees no reason why the denominator in the fraction should be the token frequency of the morphological pattern. Van Marle rightly wonders why the frequency of words already formed on the basis of a pattern should play a role in gauging the degree to which that pattern can be used to coin new instances of it. Let us take the verb-*er*-adverb pattern to illustrate the problem. This pattern contains a small number of very frequent types: in the BNC, there were 547 occurrences of the type *runner-up*, 212 occurrences of the type *passer-by*, and 68 occurrences of the type *hanger-on*. Together, these 3 types represent up to nearly three quarters of all the tokens of that pattern, with the remaining 52 types only accounting for just over the remaining quarter of tokens. In other words, if it were not for these three highly frequent lexemes (especially *runner-up*), the verb-*er*-adverb would score very high on the hapax-based productivity measure given in (2). If we adopted a hapax/type ratio instead of a hapax/token ratio, then we would see that the score for the verb-*er*-adverb pattern (44/55, or 0.80) and the score for the verb-*er*-adverb-*er* pattern (92/148, or 0.62) would be much more similar. The verb-*er*-adverb would even come out as slightly more productive on such a hapax-based score, that is, of course, if we allowed ourselves the contestable freedom to make a comparison across different corpora (the BNC versus UK pages on Google) and if we ignored the fact that different numbers of search items (all of them versus only a few) were looked up in different ways (as ‘bare’ forms or as forms within a specific template).

Let us now have a closer look at double *-er* types with high token-frequency. One would expect that types with many occurrences must be well-established in the language community or must at least be familiar to a large sub-portion of it. This seems certainly true for a noun like *fixer-upper*. The estimated number of search results for *fixer-upper* on Google exceeds one million. This very high number (perhaps to be taken with a grain of salt, however) can partly be explained by its semantically lexicalized status, in other words, by the fact that it has a specialized meaning. *Fixer-upper* originally referred to someone who fixes things up (as in the title of the Laurel and Hardy short film already mentioned). However, in a second meaning which already exists since at least 1948 (judging from the earliest example of this meaning in the OED), *fixer-upper* refers to a cheap building which needs to be fixed up by the prospective buyer.⁶ Not all forms with high token-frequency are lexicalized, however. As an example, consider *putter-onner*. Google estimates that this derivation comes up almost a thousand times in its indexed pages. However, this form usually occurs in so-called synthetic compounds, like *make-up putter-onner*, *weight putter-onner*, *costume-putter-onner*, *bumper sticker putter-onner*, etc., all of which sound as if they are made up for the occasion. There is no reason to assume that language users creating such compounds make use of a noun (*putter-onner*) which is already a firm part of the English vocabulary. *Put on* as a phrasal verb has such high token-frequency itself, due to its semantic non-specificity and hence flexibility. Google estimates that there are about 78,400,000 results for “put on”, and it is therefore only to be expected that many speakers, independently of one another, may suddenly find themselves in a circumstance in which they need to nominalize this phrasal verb. If this view is correct, this means that high token-frequency of an item does not necessarily correlate with degree of conventionalization in the language.

2.4. Interim summary and transition

Linguists who have remarked on the existence of double *-er* derivations have generally called them substandard nonce-nouns. One double *-er* noun, *fixer-upper*, must undoubtedly be familiar to many speakers, especially those working in real estate and people having dealings with them. This term can therefore not be called a coinage whenever it is used in the sense of ‘dwelling sold cheaply but in need of repair’. It is a stored entity in the

mental lexicon of a significant group of speakers. The majority of double *-er* nouns, however, are probably created just for the occasion. The first known occurrence of a double *-er* noun dates from the second decade of the twentieth century, soon after which such nouns seem to have gained some popularity, especially in the 1930s. Since then, their use may not have dramatically expanded so as to become part of the standard language. If they had, linguists would not still call them colloquial nonce formations or find it necessary to point out the mere fact that they are really attested. Attested they are, but with only four occurrences in the entire BNC, it does not seem unwarranted to claim that they remain too infrequent to be licensed by a readily available double *-er* construction.

On the other hand, it has been suggested to me that double *-er* forms need not be used very frequently to get entrenched in the mind of the language user. The fact that these double *-er* forms can be used to comical effect means that when one such noun is uttered, it will not go by unnoticed. Hearers who have been exposed to such a reduplication form just once may repeat it in their minds, where it ‘gets stuck’ as a result. For example, Maaïke Beliën, in personal communication, tells me she can still remember the first time she encountered this derivational type. It was around 1994 or 1995, in an American commercial for a brand of kitchen towel in which the slogan *Bounty, the quicker picker-upper* was sung to a lively tune. If a single occasion can lead to mental storage, it is reasonable to assume that many double *-er* nouns are coined by analogy of such an entrenched form. In other words, language users may not have a ready-made double *-er* construction, but they may well have access to one or two exemplars of a ‘virtual’ double *-er* construction, that is, a schema which does not have mental unit status as such but which can potentially be extracted from the exemplars so as to be applied to new instances.

What, then, is the role of imitation in the use of double *-er* forms? The right answer seems to be that most double *-er* forms are coined (that is, invented), but this coinage may be facilitated by the availability of some similar forms that function as models. So, the coiners may make use of some example cases, although these are probably not plentiful enough to lead to the establishment of a real construction in the mind. There is some support for the view that imitation plays a role in the coinage of these special derivational forms. One piece of evidence is that, as we have seen, such forms seem to have become more popular in the nineteen-thirties. The only explanation for such an increase, I believe, is that speakers started hearing or reading such forms in the language community, and that some users picked up on this trend and helped multiply this derivational type by

coining some similar forms of their own. Another piece of evidence is that an even rarer form with triple *-er* (e.g. *washer-upperer*) has somewhat higher frequency in Australian English than in other varieties of English (cf. Cappelle 2003). This fact can most naturally be explained if we accord some recognition to the role played by imitation of morphological precedents.

This said, my central claim is that we do not need to posit a routinized double *-er* construction, not even a ‘virtual’ double *-er* construction, in the sense given above, to account for the occurrence of double *-er* forms. This is because such forms make sense by themselves, complying as they do with a number of general principles (or ‘rules’) for whose existence speakers must definitely have ample evidence. It is the interplay of these general principles which must have enabled the creation of the very first double *-er* creation, which could not possibly have been coined by imitation. Before I give an overview of these principles in Section 4, it is high time we look at various explanations given in the literature for the occasional occurrence of double *-er* nouns.

3. Explaining the occurrence of double *-er* nouns

In the previous section, we have seen that double *-er* nouns are rather too infrequent to be simply sanctioned by an idiosyncratic construction which is ready for retrieval from the language user’s ‘constructicon’—a point already made by McIntyre (2004)—but that they might still be formed by analogy with some rare examples that are mentally entrenched because of their relatively high token-frequency and/or high conspicuousness. However, suppose, just for the sake of the argument, that there were no forms available whatsoever which functioned as examples to the speaker. This may not even be a far-fetched thought experiment, because we cannot exclude the possibility that some language users come up with a double *-er* form without ever having heard or seen one before. I claim that, even in the likely unavailability of a double *-er* construction and in the theoretical unavailability of any model cases, there is no need to throw one’s hands in the air and simply state, as Farrell (2005: 103) does, that *-er* is doubled “for whatever reason”. In what follows, I will review various kinds of explanations that have been offered: phonological ones, semantic ones, and morpho-syntactic ones.

3.1. Phonological expressiveness

Miller (1993: 133), quoting Sproat (1985), states that the second *-er* in *marcher-througher* is an “expressive P[honological] F[orm] copy”. At first sight, this is a rather unsatisfactory analysis, which seems to simply translate into generative jargon the pre-theoretical idea that *-er* is added for reasons of word-internal rhyme. Such a linguistically naïve view can be found in another respondent’s comment to the internet post mentioned in Section 1 above:

Those words or the construction of those words probably originated from a desire to rhyme; intentional or not. Think of it in terms of poetry. “Picker upper” simply sounds better than “picker up” or “pick upper”.

A desire to rhyme does not play a role in many other morphological processes. However, English does have a number of rhyming words like *arty-farty*, *easy peasy*, *helter-skelter*, *hurdy-gurdy*, *itsy-bitsy*, *mumbo jumbo*, etc., so an explanation of double *-er* nouns in terms of rhyme can perhaps not be rejected altogether as *claptrap*.⁷ On the other hand, in such reduplicatives, not just the final unstressed syllable of each part rhymes but also the preceding stressed syllable (and, if present, an intervening nonstressed syllable, as in the case of *higgledy-piggledy*, *hickory dickory*, *Herkimer Jerkimer*, *jiggledy-wiggledy*, *joukery-cookery*, *nipperty-tipperty*, etc.). Rhyme must therefore be deemed to be of limited importance to the creation of double *-er* nouns.

Considerations which more certainly seem to play a role are metrical ones. For instance, as mentioned above, the type with a single final *-er* is very rare but sounds quite natural with bisyllabic verb bases, e.g. *cover-upper*, *dial-upper*, *figure-outer*, *hurry upper*, *tidy-upper*. Similarly, when the adverb starts with an unstressed syllable, the double stressed-unstressed sequence is satisfied by the final *-er* type. Consider again the sentence with what may be the earliest double-*-er* occurrence in the OED: “For every fling-arounder..there is a busy little picker-upper”, and observe how the first nominalization does not double the *-er* suffix, possibly because such a doubling would disrupt the alternation of stressed and unstressed syllables (cp. *FLING-a-ROUND-er* and *FLING-er-a-ROUND-er*). Haplology (i.e. the avoidance of similar-sounding syllables) may also explain the selection of the verb-adverb-*-er* pattern here.

We can also invoke stress as a partial explanation for why someone who gets picked up can be called a *picker-uppee* but not a **pickee-upper*.⁹ For some similar examples, consider (3a–b):

- (2) a. *I always said it's harder to be the breaker-upper than the **breaker-uppee** because the dumped person always gets all the sympathy.* (www)
- b. *On klutziness, I know we all heard "It's all a lot of fun until somebody gets an eye put out!" or something to that effect. Did anybody ever know of someone getting an eye put out?? — As a matter of fact... 11 or 12 years old playing with BB guns. I was neither the shooter nor the **eye-putter-outee**, but I was certainly there and it was horrifying.* (www)

Miller (1993: 132-133) takes such forms in *-ee* as evidence that the first *-er* is “essentially vacuous”, which seems correct. He then goes on to explain the fact that the *-ee* suffix necessarily attaches to the adverb by appealing to case-theoretical principles. Basically, his argument is that the deep-structural thematic object of the adverb must combine with that adverb before they are both syntactically incorporated with the verb, which possibly has already received an affix in the lexical component before this incorporation. Not only is it hard, if not impossible, to translate his account in theory-neutral terms, but it also seems to me that a simpler explanation can be given here. The productive patientive *-ee* suffix always carries the nuclear stress in the derivation, unlike agentive *-er*. Words ending in *-ee* therefore have a characteristic word-final stress. The form *PICK·er·up·EE* respects this typical word-final stress pattern that words in *-ee* have, while the anomalous form **pick·EE·up·er* deviates from it. Restoring the familiar stress pattern of *-ee* nouns by stressing the word-final *-er* (*pick·EE·up·ER*) would only make matters worse, of course, because it would wrongly underline that the derivation is agentive. In Section 4, I will give an extra reason why the form *picker-uppee* makes more sense than **pickee-upper* to denote someone who gets picked up.

3.2. Semantic expressiveness

We have already quoted Wentworth's (1936: 369) view that the double *-er* structure is “economical in expression of ideas”. Wentworth clarifies this claim by stating that

... two-thirds of the handful of specimens in question cannot be so concisely worded in standard English. The flippancy of *waker-upper*[,] *holder-outer*,

dropper-inner, putter-offer, and lobby-drifter-througher is almost counterbalanced by the circuitousness of *that which wakes one up, one who holds out, one who drops in, one who puts something off, and one who drifts through a lobby*, and by the formality of *awakener, intractable, chance visitor, procrastinator, and casual inspector of hotel patronage*. (Wentworth 1936: 369)

So, according to Wentworth, the double *-er* structure allows a complex concept to be succinctly encoded with the help of every-day English words and morphemes.

With two *-er* suffixes, though, the double *-er* derivational structure is not as concise as could be. Bauer (1983: 289) finds that all the derivational structures considered so far, and a couple of others structures not mentioned here, are rather awkward. This, together with the fact that there are so many competing types, is considered by Bauer to lead to the frequent avoidance of adding an *-er* suffix at all. The process which allows users to avoid the suffix attachment problem altogether and, hence, which produces even more concise derivations is conversion. Examples are *drop-out, runaway, show-off* and *stand-in*.

Yet, when it comes to creating a noun which refers to the agent of the event expressed by a phrasal verb, conversions may not be the most obvious choice. A brief browse through derivations of this type revealed that agentive interpretations represent the minority. Among the BNC's twenty most frequently-used conversions ending in *up*, there was just one lexeme which can be interpreted as referring to a person, namely *back(-)up*. The other derivations (e.g. *build-up, cover-up, line-up*, etc.) typically refer to an objectified event. *Back-up*, too, can refer to an event, and this may indeed be the more basic meaning. This is clear from the fact that when *back-up* refers to a person, it glosses more naturally as 'someone who can provide back-up' than that *back-up* in the sense of 'support' can be glossed as 'what is provided by a back-up'. Since conversions do not code agentivity directly, they are semantically less expressive (or less informative) than *-er* derivations. However, the double *-er* structure is not more expressive than its rival derivational structures with *-er*. Accordingly, the need for conciseness in expression certainly cannot be the reason why some speakers prefer *washer-upper* over *washer-up* or *wash-upper*.

3.3. Lack of morphological compounds of the adverb-verb type

Ackema and Neeleman (2001: 23–26; repeated in 2004: 159–162) attempt to provide an explanation for the fact that there is such a variety of derivational processes which turn phrasal verbs into agentive nouns. They contrast this variety with the lack of options for agentive synthetic compounds like *truck driver*, for which there are no grammatical alternatives like **driver-truck*, **drive-trucker* or **driver-trucker*. Their explanation is that agentive derivations from phrasal verbs, unlike agentive synthetic compounds, are not formed directly from a verbal compound. That is, in English, there are no such adverb-verb compounds as **to away-throw*, **to in-stand* or **to down-let* alongside syntactic combinations like *to throw away*, *to stand in* or *to let down* (p. 23–24). Because of the lack of such morphological forms, speakers are forced to take the verb-adverb combination, which they see as a syntactic rather than morphological combination, as the host of the *-er* affix. Each possible phonological output of this addition is then fraught with a different violation. A form like *cutter-up* contains a violation of “linear correspondence”, by which a structurally external element (like an affix) should stay phonologically external to its host. A form like *cut-upper* violates the “input correspondence” principle, which says that an affix whose structural input is a category or a phrase headed by that category should phonologically attach to that category. And as to *cutter-upper*, finally, this form violates the “quantitative correspondence” principle, according to which affixes cannot be phonologically realized more than once. If a morphological compound like **to up-cut* were available, then **upcutter* would be formed, by analogy with *truck driver*, and it would block all the forms directly derived from *cut up*.

The main merits of Ackema and Neeleman’s account is that it attempts to explain the multiplicity of forms and that it spells out reasons for what Bauer (1983: 289) calls their “awkwardness”. However, there are also a number of problems with their account, which I will discuss in the following three subsections.

3.3.1 *There are no N-V compounds but there are Adv-V compounds*

Ackema and Neeleman’s (2001/2004) morphological analysis of a synthetic compound like *truck driver* is as shown in (4):

(4) [N [v *truck drive*]er]

Such an analysis is problematic because *truck driver* cannot be glossed as ‘someone who **truck-drives*’; rather, it more naturally glosses as ‘someone who drives trucks’. A more satisfactory constituent structure of *truck driver* is therefore the one given in (5):

(5) [N [N *truck*] [N [v *drive*]er]

So, the fact that we do not have forms like **driver-truck*, **drive-trucker* or **driver-trucker* cannot be based on the presumed availability of verbal compounds of the noun-verb type, which is a non-existent morphological type in English.⁹ By contrast, verbal compounds of the adverb-verb type, which Ackema and Neeleman claim do *not* exist, can actually be found in English. True enough, the prefixed verbs (e.g. *overact*, *underfeed*, etc.), which they do give some examples of, are not compounds: they all have stress on the verb and the prefix has a meaning related to degree, which is rather different from its meaning as an adverb. However, English also has cases *backtrack*, *download*, *downscale*, *downsize*, *inbreed*, *offset*, *outsource* and *upgrade*, all of which have or can have stress on the adverb and which therefore (also) qualify as compounds and not (just) as prefixed verbs.

3.3.2 *Not all verb-adverb combinations are syntactic, nor are all derivations from them morphological*

Ackema and Neeleman’s (2001/2004) account suggests that a verb-adverb combination, when not yet nominalized, is a syntactic entity, and that the diverse nominalizations types are all morphological entities. There are reasons to object to this view.

As regards non-derived verb-adverb combinations, I more or less follow Farrell (2005) in assuming that most of these can be realized either as word-level verb-adverb compounds, making up a complex verb, or as phrase-level structures, with the verb heading a VP and the adverb potentially heading an adverb phrase within that VP. For example, *blurt out* is a compound in (6a) and part of a verb phrase in (6b):

- (6) a. “Respect him! Why, they’re mad enough to thrash him, and he ought to be thrashed!” **blurting out** the old man. (www)
 b. He just **blurted** the words right **out**. (www)

In (6a), *blurted out* cannot be a phrase, since the quotative inversion construction only allows single verbs to occur before the postposed subject (cp. “He ought to be thrashed!” *blurted* (*{in anger / loudly}) *the old man*). In (6b), *blurt* and *out* make up a VP which also (among other things) contains the NP *the words*. Claiming otherwise (i.e. *blurt out* is a phrase in (6a) or a complex word in (6b)) would require the application of syntactic derivations in order to put spatially disjunct phrasal constituents together in (6a) or to separate the parts of a word in (6b). I believe that such movement operations are unnecessary (not to mention undesirable), since they can be avoided by assuming dual realization of phrasal verbs as words or phrases.

As to nominalizations from phrasal verbs, I also believe that some are word-like in nature while others are phrasal. The verb-*er*-adverb structure is a phrasal kind of derivation. To see this, note first that there is clear evidence that nominalized verbs in *-er* can still take complements to the right of them, as in (7a-f)?

- (7) a. *fighter for freedom* (www)
 b. *gropers in the dark* (www)
 c. *giver of wealth to all people* (www)
 d. *raiser of money for good causes* (www)
 e. *reader of stories to grandchildren* (www)
 f. *maker of peace with the Palestinians* (www)

Unless these sequences are to be analyzed as word-level entities—an analysis which is absurd and untenable—there may be something to be said for a parallel analysis for, e.g., *giver-in*, namely as a verb-derived noun accompanied by a complement, together forming a nominal phrasal structure. Another argument for such a phrasal analysis is that an inflectional affix (e.g. the plural morpheme) typically attaches to the *-er* affix (e.g. *lookers-on*) rather than to the following adverb (e.g. ?**looker-ons*). If the adverb in the verb-*er*-adverb pattern were felt to be fully incorporated into the morphological derivation, we would expect to find the word-final plural more often. Such a plural form can often be found for *passer-by*, but the standard plural form (*passers-by*) still reigns supreme. The only difference with phrasal nominal derivations like those in (7c-f) is

that the adverb obligatorily precedes rather than follows the nominal complement which corresponds to the verb's direct object:

- (8) a. *keeper {away} of drug dealers {*away}*
 b. *cleaner {out} of sewers {*out}* (BNC)
 c. *chatter {up} of girls {*up}* (BNC)
 d. *picker {up} of trash {*up}* (www)

By contrast, double *-er* derivations are fully morphological. While they also occur in phrasal nominal structures like those in (9), yielding constructs like *keeper-awayer of drug dealers*, their use in such nominals is considerably less frequent than the use of the verb-*-er*-adverb structure. Among the 25 different double *-er* lexemes with *upper* gathered via a search on Google (see note 4), only 3 had a following complement (*cleaner-uppers of the natural world*, *washer-uppers of dirty cups and plates*, and *owner-uppers of modern life*). By contrast, among the 55 verb-*-er*-adverb lexemes in the BNC, we found 17 lexemes which occurred with a phrasal complement to their right (e.g. *knocker-about of buildings and castles*, *puller-down of statues of the Shah and his father*, *bringer-in of new customs*, *cobbler-up of sitcoms*, etc.). Doubling the *-er* is not necessary in such nominals, since there is no need to prevent the adverb from being analyzed as a complement. Such a need does exist, apparently, when the affixed verb is the head of a synthetic compound. Consider the following examples:

- (9) a. *drug dealer keeper awayer*
 b. *sewer cleaner outer*
 c. *girl chatter upper*
 d. *trash picker upper*

Without the second *-er* morpheme, these constructs would not be acceptable, as we have noted in the introduction. Compare:

- (10) a. *?*drug dealer keeper away*
 b. *?*sewer cleaner out*
 c. *?*girl chatter up*
 d. *?*trash picker up*

The reason is that the presence of a noun preceding the head of the derivation forces us to consider the derivation as fully morphological,

while a non-affixed adverb, as we have just argued, is considered to belong to a phrasal kind of derivation (i.e. a nominal and not a noun). Observe that *bona fide* phrasal complements are also often (though not always)¹¹ hard to retain to the right of synthetic compounds:

- (11) a. ?*story-teller to children* (www) (attested but of dubious acceptability)¹²
 b. ?*present giver to my brother* (www) (idem)
 b. **light-tripper fantastic*
 c. **bricklayer drinker under the table*

Much more natural than (11a) is *storyteller for children*, which has 259 hits on the UK pages of Google (9 October 2007), as opposed to just one hit for *storyteller to children*. By contrast, the VP *tell stories for children* has only 4 hits as opposed to 646 hits for the VP *tell stories to children*. This distribution is not at all surprising if we assume that the *to*-PP is a verbal complement (i.e. an argument) and the *for*-PP a postmodifier to a noun. On the other hand, (11a) and (11b) sound somewhat more acceptable than (10a–d). This may be because the verb and the adverb have a strong collocational bond which prevents the adverb from remaining affix-less when the verb is turned into the head of a synthetic compound. A strong collocational bond would then explain why (11c) is also ungrammatical. However, there is no collocational link between *drink*, *bricklayer* and *table* in (11d). Here, the explanation might be that *bricklayer* in syntactic structure is not the object of *drink* but rather the notional subject of the understood predicate *move/go under the table*. As a result, **bricklayer drinker* in itself is a faulty compound (unless when intended as a dvandva), whether or not it is followed by a nominal complement. Some speakers apparently find intriguing ways of incorporating this complement into the synthetic compound as well. Since it cannot legitimately bear an affix (**light tripper fantastic-er*), it can only be synthetically integrated as a nonhead, following the other non-head. And indeed, both *light fantastic tripper* and *bricklayer under the table drinker* can be found on the web, with one occurrence each. It is clear that these constructs are not to be considered as Standard English. On the other hand, their occurrence reveals a strongly felt unease with agentive synthetic N+N compounds which are followed by a complement of the nominalized verb.

What is important to remember is that we have shown that *washer-up* and *washer-upper* are different kinds of nominalizations: the former can be analyzed as phrasal in nature (a nominal), whilst the second *-er* in the latter

forces us to analyze the adverb as an integral part of a single complex word (a noun), which may further take part in synthetic compounding.

3.3.3 *Not one but three correspondence violations for the double -er structure*

A third problem with Ackema and Neeleman's (2001/2004) account is that it considers each of the three competing nominalization types with *-er* to be stigmatized with just one violation—more specifically, each type violates a different principle. However, if we were to Ackema and Neeleman's account to its own logical consequences, we would have to conclude that the double *-er* structure actually violates three principles: not only does it infringe the “quantity principle”, which dictates that only one affix be added, but just like the verb-*-er*-adverb pattern, it follows only a part of its morphological host, in violation of what they call the “linear correspondence” principle and just like the verb-adverb-*-er* pattern, it violates the “input correspondence principle” since the adverb to which the (in this case second) *-er* is attached is not the head of morphological input. This triple violation should in principle make it worse than the verb-adverb-*-er* pattern, which is taxed with only one violation. Yet, remember from Section 2.3 that the double-*-er* type is more frequent than the verb-adverb-*-er* type.

To summarize section 3.3, an account of the double *-er* structure is not satisfactory if it hinges on the unavailability of adverb-verb compounds (as opposed to the wrongly presumed availability of noun-verb compounds), on an assumption that all verb-adverb combinations are syntactic phrases and all their derivations single morphological words, or on a simple set of mapping principles between morphosyntactic structure and phonological output.

3.4. Overcoming problems with left-headed compounds

Finally, let us explore McIntyre's (2004) hypothesis that the double *-er* type might be “somehow a natural response to the problem of how to affix left-headed structures given the less-than-wonderful status of non-reduplicative solutions (‘washer-up’, ‘wash-upper’)”. In fact, this seems to me to be the key to an understanding of the double *-er* structure. The main

problem with the verb-*er*-adverb structure is that the adverb keeps ‘dangling’ at the right-hand side of the verb-derived noun. This in itself is not problematic, unless the nominalization undergoes synthetic compounding, in which case there can be no word-external material to the right of the compound’s head, as we have seen in Section 3.3.2 (examples (10a–d)). The main problem with the verb-adverb-*er* structure is, as Ackema and Neeleman (2001/2004) point out, that the suffix is not attached to the head, as it ought to be—or, at least, as it usually is. The double -*er* type then overcomes both problems by more clearly integrating the adverb into the nominalization while retaining the verb as (co-)bearer of the derivational suffix.

According to Busutil (2001), the double -*er* structure is not so much a synchronic compromise between the verb-*er*-adverb structure and the verb-adverb-*er* structure, as a diachronic transition between the former and the latter. Such a development, for which there is no evidence (yet), would be somewhat reminiscent of changes in inflectional morphology whereby the inflectional affix does no longer always attach to the head in a left-headed complex word, as in *sisters-in-law* or *Attorneys-General* but, increasingly, to the periphery, as in *sister-in-laws* (cf. also the term *in-laws*) and *Attorney-Generals*, the latter of which practically having become the norm.

I am not so sure the double -*er* structure can be dismissed as merely a transitional form. Such a view would be supported by the emergence and firm establishment of double -*s* plurals like *sisters-in-laws* before the appearance of a peripheral plural like *sister-in-laws*. I do not think such a development can be substantiated by data from diachronic corpora, although this should be checked. More plausibly, I believe, *sisters-in-laws* and *washer-upper* are to be seen as synchronic attempts to do two things right: add an affix at the morphological head and add a head at the end of a word.

One might point out that there is still the “input correspondence” violation caused by the -*er* attached to the adverb (cf. Section 3.3.3). That is, since the adverb is not the category or the head of the phrase which serves as the morphological host of the -*er* suffix, it should not be the phonological host either. However, an alternative way to look at the double -*er* structure is not as a combination of a suffixed verb and a suffixed adverb, but as a blend of a nominalized verb and a nominalized phrasal verb (cf. Blevins 2006: 514). That is, we might argue that the second -*er* does not attach to the adverb *per se* but to the entire phrasal verb:

- (13) a. A derivational affix attaches to the head of a morphologically complex entity.
 b. A derivational affix attaches to the right boundary of its base.
 c. The head in a synthetic compound is not (normally) followed by any further elements which correspond to syntactic complements of the base of the head.
 d. A morphologically complex entity which consists of two rhyming parts produces a jingling effect in (actual or imagined) pronunciation.
 e. A morphologically complex entity which consists of two parts with identical stress patterns produces a jingling effect in (actual or imagined) pronunciation.
 f. A plural and/or genitive affix attaches after the noun's derivational suffixes, if there are any present, or else word-finally.
 g. The peripheral derivational affix of a word determines its categoriality and its global semantics.

The morphological principles stated in (13a) and (13b) have already been mentioned in this section and will not be further discussed here. The principle given in (13c) has also been discussed already: in Section 3.3.2 we invoked it to explain why there is something awkward about nominal derivations like the one in (14):

- (14) *I hereby bequeath to you, Mary, the title of best present giver to my brother.* (www)

Such structures do occur, but the presence of a syntactic complement following a synthetic compound yields a somewhat uncomfortable mixture of syntax and morphology. Mixing morphology and syntax can be avoided by attaching an extra *-er* to the adverb of a nominalized phrasal verb in which the verb is the base of the head in a synthetic compound (compare again *?*girl chatter up* and *girl chatter upper*). It is for a similar reason that an extra *-ed* suffix is often added to participial adjectives which are derived from phrasal verbs and which function as the adjectival base of nouns ending in *-ness*. Thus, in addition to *fucked-upness*, one can encounter *fucked-up(p)edness* (cf. McIntyre 2004; Peters 2006). The reason is presumably that *-ness* requires its base to be a word-level adjective and that *fucked up* may be felt to be too much like an adjectival phrase to meet this requirement. Adding an *-ed* suffix to the end of the base

gives the derived adjective the desired form for further *-ness* suffixation. Some support for this claim is the fact that a form like *fucked-upped* without *-ness* hardly ever occurs—its rare occurrences can be explained as backformations from the noun ending in *-ness*.¹¹ The more general rule thus seems to be the input of a morphological rule (whether it be synthetic compounding or suffixation) should look like a word-level (X_0) category, if at all possible. Since phrasal verbs often function as words syntactically (cf. for example (6a) above), the adverb may be analyzed as (able to be) incorporated into the verb and, hence, as eligible for carrying a suffix, thereby *de facto* giving the verb-adverb combination word-level status.

The principles in (13d) and (13e) are phonological. The avoidance of ‘jingling’ effects has been discussed extensively with respect to consecutive *ing*-forms (see, e.g., Ross (1972), Milsark (1972), Berman (1973) and Pullum (1974) for some early references). Doubling *-er* also seems to have a jingling effect, and this effect is probably intended—in any case, the jingling is in all likelihood the main factor why double *-er* constructs sound comical. Remember from Section 2.4 that there are also instances with triple *-er*, e.g. *bringer-backerer*, *sorter-outerer*, *washer-upperer*, etc. Note that a third *-er* is almost always added to the second, hardly ever to the first. This could be due to the fact that the first affix is less important than the second, as we have seen in connection with forms like *picker-uppee*. I can see two different reasons for the occurrence of these ‘retriplifications’ (as McIntyre 2004 calls them). One is that the producer of a double *-er* form realizes that the result is (or will be) funny and, in an attempt to underscore this self-awareness, makes it even funnier by adding a third, wholly superfluous *-er*. For the same reason, perhaps, some users produce even quadruple *-er* forms like *handerer-outerer*, *passerer-onnerer*, *pickerer-upperer*, etc., which are attested on the web. Another reason is that language users may try to *mitigate* the jingling effect by adding a third *-er*, which usually results in the combination of a trochee and a dactyl instead of two consecutive trochees.

Principle (13f) accounts for a fact mentioned in note 4, namely that the plural (and/or the genitive) of a double *-er* form is marked on the second *-er*, not on the first. In other words, we can say *two washer-uppers* but not **two washers-upper*. This again ties in with the observation that the first *-er* is vacuous: it is overshadowed by the second *-er*, which attracts any further inflectional morphemes. By contrast, the competing verb-*-er*-adverb pattern normally receives a plural and/or genitive *-s* on the *-er* (e.g. *runners-up*) rather than on the right word boundary (e.g. *?*runner-ups*).

Finally, principle (13g) is the principle which makes us conclude that a word of the form *X-able* is an adjective meaning ‘fit for X-ing or worth being X-ed’ or that a word of the form *X-ity* is a noun referring to the ‘state or quality of being X’, etc. It is also this principle which causes a form like *breaker-uppee* to be interpreted as patientive, despite the presence of an *-er* morpheme. What matters most to the interpretation of a word in terms of its categoriality and schematic meaning is the final derivational morpheme.

5. Prepositions rather than adverbs taking *-er*

An interesting case concerns similar-looking constructs in which the second *-er* attaches to a preposition rather than an adverb. Here are some attested examples:

- (15) a. *bandwagon-hopper-onner* (www)
 b. *lobby-drifter-througher* (Wentworth 1936: 369)
 c. *videogame writer-abouter* (www)
 d. *window looker-outer* (www)

Most adverbs that occur in phrasal verbs double as prepositions: *about*, *across*, *along*, *around*, *aside*, *by*, *down*, *in*, *off*, *on*, *out*, *over*, *round*, *through*, and *up* are words that can occur with or without a complement NP. It is mainly for this reason that adverbial particles in phrasal verbs have often been called “intransitive prepositions” (see Cappelle 2004 for references and extensive discussion). The examples in (15) seem to invalidate Miller’s (1993: 132) that the double *-er* structure only occurs with “intransitive prepositions”. Of course, Miller is right to the extent that we cannot have, for instance, **drifter-througher-lobbies*. However, I maintain that the host of the second *-er* in each of the examples in (15) is to be considered as a transitive preposition, not as an intransitive one (which I would call an adverb). Its NP complement is realized as the non-head of a synthetic compound. The non-head in a synthetic compound normally functions as a complement of the verb from which the head is derived. In these cases, though, the initial noun is not a complement of the verb but a complement of the preposition.

The question arises whether such instances are created by analogy with forms like *sewer cleaner outer* and other such forms involving derived verb-adverb combinations (cf. the examples in (9)). If so, it would mean that a hypothesized construction with the form ‘noun-verb-*er*-adverb-*er*’ is

extended to encompass prepositions as well as adverbs. In the light of what we have come to learn about the double *-er* structure, an account based on the existence of such a low-frequency construction is not only implausible but also unnecessary. We can explain the examples in (15) by taking recourse to the principles stated in Section 4, plus the independent principle that prepositions in English can be stranded (e.g. *This is the lobby which he used to drift through*). In (16), however, the stranded prepositions are interpreted as syntactic elements in otherwise fully morphological structures. Just like an unaffixed adverb following the head of a synthetic compound (e.g. **sewer cleaner out*), such a stranded preposition violates the principle given in (13c):

- (16) a. **bandwagon-hopper-on*
 b. **lobby-drifter-through*
 c. **videogame writer-about*
 d. **window looker-out*

It is by adding an extra *-er* to the preposition that the derivation becomes fully morphological. If the affixed verb is not the head of a synthetic compound but the head of a nominal structure, there is no reason to add a suffix so as to integrate the word-external stranded preposition into the compound. The following examples are all nominals (rather than nouns) whose head is a noun derived from a verb.

- (17) a. *hopper on the bandwagon* (www)
 b. *drifter through the bars and honky-tonks of South Louisiana* (www)
 c. *writer about games & gaming* (www)
 d. *looker out the window* (www)

In short, much the same general principles apply for the derivation of verb-PP sequences as for the derivation of verb-adverb sequences (known as phrasal verbs). There is no need to explain instances like *lobby-drifter-through* as being the result of an extension of a special low-level constructional template.

6. Can a usage-based view be salvaged?

We started out this study by asking ourselves the question: Given the rarity of double *-er* forms, how come speakers use them, and how come they know *how to* use them? Before answering that question, we first wanted to make sure that double *-er* forms are actually so infrequent as they have usually been made out to be. A systematic search in the BNC (on **about-er*, **across-er*, **ahead-er*, etc., where ‘*’ is a wildcard) returned only four occurrences. This indeed seems to be too low a frequency for speakers to derive all of the fine grammatical details of this structure from its very instantiations. For example, it seems very unlikely that speakers know merely on the basis of their rare encounters with double *-er* forms that the plural is formed on the second *-er* or that the double *-er* structure is more preferred than its main competitor when it combines with another noun as head of a synthetic compound (compare, e.g., *trash picker-upper* and **trash picker-up*). We therefore have been forced to invoke the existence of several more general principles which together explain the occurrence of double *-er* forms and their grammatical properties.

This conclusion might be thought to seriously undermine usage-based accounts of language. In such accounts, learners acquire knowledge of constructional patterns through frequent exposure to instances of these patterns. Clearly, if there is hardly any direct evidence for a double *-er* structure available in learners’ linguistic input, they must acquire their knowledge of this structure via more general rules rather than from familiarity with the pattern itself. Yet, I believe that just because a linguistic structure requires a rule-based account, this does not necessarily mean that usage-based models of language learning have been proved untenable.

First of all, there can still be some item-based learning. While double *-er* coinages can best be explained as resulting from a variety of general rules rather than as being licensed by an idiosyncratic double *-er* construction, there are also a few double *-er* forms which may be entrenched in the language. This is probably the case for *fixer-upper* (‘house which needs to be repaired and which is sold at a bargain price’) and maybe also for *washer-upper*. These forms can still be derived from morphological rules but their relatively frequent occurrence could easily lead to their redundant storage in the lexicon. This is why Langacker (1987) rejects a sharp distinction between rules and lexically stored exceptions to rules (his so-called ‘rule/list fallacy’), claiming that certain phenomena might perfectly conform to rules and still be listed among the

memorized units. Expanding this point, it has recently been shown that rules of very high generality, such as those governing the formation of questions with long-distance dependencies, may not only co-exist with lower-level templates (e.g. *WH do you think...?* or *WH did you say...?*) but may also be less salient than these lexically more specific schemata (cf. Dąbrowska 2006). It is not very likely that this is also the case for the linguistic rules which underlie the formation of double *-er* forms. Yet, we have suggested that a speaker's familiarity with reasonably well-entrenched forms like *fixer-upper* and *washer-upper* might lower the threshold to create a similar, novel double *-er* form. Such exemplar-triggered facilitation would involve the creation of an *ad hoc* constructional template—what I have called a 'virtual' construction here and what might correspond to what Kay (2002) has called a 'pattern of coining'. Of course, it is possible that not every language user is equally good at extracting such a template from concrete instances. To use an example I have given elsewhere (Cappelle to appear), internet searches reveal a creative use of the idiom *verb one's {ass/butt} off*, with such substitutions for the object head as *behind, booty, botty, bum, buns, buttocks, fanny, hiney, jacksie, rear, tail, tush*, etc.—in fact, any possible alternative for *ass* that could be found in a good thesaurus (cf. also Culicover 2007). Yet, most people, if they were to use this expression in the first place, would only use the version with either *ass* or *butt*, failing to create a virtual pattern in which the object's head noun is replaced by 'any word referring to one's behind'. In the same way, some language users may be slower than others to seize the opportunity to create analogical instances to *fixer-upper* and/or *washer-upper* by means of a low-level generalization. Whether such a generalization is extracted at all by *some* speakers is an open question, but the possibility exists in principle.

There is another reason why the (predominantly) rule-based account proposed in this study can be compatible with usage-based theory. The thrust of my account has been to show that speakers could create a novel (or, for that matter, existing) double *-er* noun even without ever having heard such a noun before. I would like to stress here that this does not mean that these general rules themselves cannot have been learned in a way that is advocated by usage-based theories. In other words, there is no reason to assume that these rules should be part of our innate linguistic endowment: they can very well be learned on the basis of direct positive evidence, that is, from frequent exposure to concrete instances which satisfy the rule and hence, in effect, collectively embody the rule.

Admittedly, there can be no direct positive evidence for the rule given in (13c), which states that a synthetic compound is not naturally combined with syntactic complements of the nominalized verb. Even so, this rule could perhaps be learned on the basis of indirect negative evidence, that is, on the basis of a conspicuously low number of structures which might reasonably be expected to occur much more often.

7. Conclusion

In sum, rare but regular double *-er* nouns call for an analysis which sees them as the output of various interacting grammar rules. These rules explain not only their occasional occurrence but also their surprisingly stable grammatical properties, which can hardly be learned on the basis of these infrequent occurrences alone. However, this apparent victory for rule-based language knowledge need not be interpreted as a victory for the linguistic innateness view or as a defeat for usage-based models of language knowledge.

Notes

1. In shaping my ideas about the morphological phenomenon discussed in this paper, I have benefited from a lengthy e-mail exchange with Andrew McIntyre, who I am confident will eventually come up with a more penetrating analysis than I can offer here. I also thank the audience attending a presentation of this paper at the Second Conference of the UK Cognitive Linguistics Association for various helpful suggestions. As a Postdoctoral Fellow of the *Research Foundation – Flanders (FWO-Vlaanderen)*, I gratefully acknowledge financial support from this institution.
2. < <http://ablautime.blogspot.com/2004/09/passers-by-be-damned.html> >, accessed 23 August 2007.
3. For some additional references, see McIntyre (2004). Some of his references are to non-published studies and therefore are not easy to come by.
4. I searched in Google.co.uk for matches of the following string:
 “theltheselthoselsomelmany/fewlseveral * uppers”
 This yielded 371 matches in the viewable pages. The reason for using the plural in my search query was to see whether the verbal part was also inflected for plural—which it turned out not to be, although McIntyre has noted the web-attested example *debris pickers uppers* and I have also come across *movers-uppers* in a more general web search. Using the plural also excluded

large numbers of unwanted occurrences of *upper* as an adjective. In addition, the reason for using a determiner followed by a wildcard was that I would otherwise retrieve too many occurrences in which the free morpheme *upper* is used—the *upper* of a shoe is the part above the sole (and apart from this use, *uppers* is also used to refer stimulating drugs, as opposed to *downers*, which are sedatives or tranquilizers). With the search command shown I minimized the number of noise occurrences mainly to cases in which *uppers* was preceded by an adjective or qualifying noun, e.g. *leather uppers*, *satin uppers*, *sturdy uppers*, *suede uppers*, *woven uppers*, etc.

A similar search query was also used for sampling words in *-outers*. Again, the plural was meant to exclude noise example with *outer* as an adjective, and using the same grammatical context as for *-uppers* helped keeping noise examples with the independent noun *outer* (which has a variety of meanings) to a manageably low number.

5. For practical reasons, I did not search for all the possible verb-combining adverbs on Google, because the lack of a truncated search option means that I would have been forced to weed through countless noise examples. For instance, since we cannot look directly for “**er-offer*” (with ‘*’ functioning as a wildcard) I would have had to screen lots of web hits for rare examples in which *offer* is used as the adverb *off* plus *-er* rather than as a noun or verb. Similarly, the web query *acrosser* yields a vast number of results dealing with a computer company called *Acrosser* and the query *homer* almost exclusively yields hits with the proper name *Homer* or with the baseball term *homer*. In any case, the handful of more manageable adverbs included in the internet searches can be seen as a representative selection.
6. Bauer and Huddleston’s (2002: 1655) example *blower-upper* has a similar patientive reading: “‘a shell which should be blown up’”. Likewise, a *singer-alonger* is not ‘someone who sings along’ but a ‘song with which you can sing along’. The existence of such non-agentive readings, while rare, are not unpredictable, since they also occur with non-reduplicative *-er* nouns. Examples are *keeper* (‘something which should be kept’), *must haver* (‘something that you should have’), *folder* (‘a sheet that is folded and used to hold documents’), *sipper* (‘drink that is meant to be sipped’), *scratcher* (‘lottery ticket that has to be scratched to reveal the potentially winning combination’), etc.
7. For a list of 177 such words in English, see the category “head (consonant) shift” on this website: < <http://www.trussel.com/flipflop.htm> >. An even longer list of reduplicatives can be found on this site: < http://people.scs.fsu.edu/~burkardt/fun/wordplay/itty_bitty.html >.
8. Double *-ee* seems to be reserved for combinations which sound deliberately childlike or which are used to (self-)mock the English as spoken by Chinese. Some attested cases are:

- (i) a. *We've been using one of the Exergen temporal artery thermometers. Works very well, and no stickee uppee buttee. Wal-Mart has them for under \$30.* (www; in a self-help site for fathers who stay at home to take care of their children)
- b. *he has dark brown, almost black, stick-ee up-ee baby hair* (www)
- c. *According to the Observer, 2/2/03, Ronaldo's wife Milene, holds the World football keepee uppee record, although not an olympic sport, certainly an achievement.* (www)
- (ii) a. *Me jump-ee back-ee* (www)
- b. *Ying's Chinee Takee-Outee in Jacksonville, FL* (www)
- c. *"Me lun backee takee him safee," the younger of the Eastern adventurers went on, pointing to his father. "Then me makee walkee all alonk you, takee you back same placee you comee from. ..."* (www; note also the reverse order of verb and adverb)

The *-ee* suffixes in these usages do not carry a patientive meaning. In the examples in (i), they are in fact typographic variants of the more frequently adopted *-y* ending (*sticky-uppy, keepy-uppy*; etc.)

- 9. Seeming exceptions like *to air-condition, to brainwash, to breast-feed, to globe-trot, to headhunt, to party-crash, to stage-manage, to window-shop*, etc. are probably all back-formations (in these cases from *air-conditioning, breast-feeding, globe-trotter, headhunter, party-crashing, stage manager, window-shopping*); cf. Marchand (1969: 58–65), Selkirk (1982: 16–17), Bauer (1983: 208), Bauer and Huddleston (2002: 1654).
- 10. Attested cases like *peacemaker with the Palestinians* and *lifegiver to our planet* (as said of the sun) seem fine.
- 11. Evidence that the first *-ed* is vacuous, just like the first *-er* in the double *-er* structure, can be found in the fact that this *-ed* can be omitted, as in the following examples from Peters (2006): *beat-upedness, blow-upedness, catch-upedness, crack-upedness, mix-upedness, screw-upedness, sex-upedness*, etc. In Peters's list, we also encounter forms like *blowing-upedness, hooking-upedness, mashing-upedness, suckin'-upedness, not-waking-upedness*, which are in some respect similar to attested cases like *washing upper, following upper* and the forms in (i):
 - (i) *the going-uppers, the coming-downers, the hovering-about-in-the-middle-a-bit-ers* (www)

The last form and the form *not-waking-upedness* (rather than *un-waking-upedness*) suggests that we are dealing with a phrasal base that undergoes conversion or derivation:

- (ii) a. $[N [V [VP [hovering\ about\ in\ the\ middle\ a\ bit]]er]]$
- b. $[N [Adj [VP not\ waking\ up]ed]ness]$

A similar structure as (iia) can be given for *crunch-you-upper* and *ban-the-bomber*, mentioned in Section 2.3.

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