

## Formal Metrics Meets the Boojum: Metrical Variation in Lewis Carroll's Verse\*

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### 0. Introduction

Formal theories of poetics to date have largely focused on describing the characteristics of binary meters (especially iambic), as well the types of variation that these meters allow, time and time again, in the form of their feet and lines.<sup>1</sup> This paper departs from that trend to address two metrical mysteries in a triple meter: the anapestic verse of Lewis Carroll, most strikingly exemplified in that epic of nonsense verse, *The Hunting of the Snark*.

The first issue under consideration concerns the structure of the Carrollian anapest. An anapest is a grouping of three metrical positions (which I will creatively refer to as positions 1, 2, and 3 when necessary) with position 3 being more prominent in some way; traditional descriptions have been along the following lines: "two metrically unaccented syllables followed by a metrically accented one" (Steele 1999:230). The few discussions of anapestic meters in the generative metrics literature have noted that more traditional definitions do not accurately describe all anapests: at issue were anapests admitting primary stresses in position 1. This phenomenon has led Kiparsky (1977:228, 1989:320) and Prince (1989:54-55) *inter alia* to conclude that positions 1 and 3 of an anapest are equivalent in terms of their metrical properties. In the words of Kiparsky (1989:320):

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<sup>1</sup> The term "foot," when used alone in this paper, is reserved for the object of poetic-metrical organization just below the line level; it is a cluster of poetic-metrical positions, such as an anapest, which repeats some number of times in the course of a poetic line. When examples are cited, foot boundaries are marked with forward slashes. I will use the term "stress-foot" to refer to the object of prosodic organization below the prosodic word level, used in theories of word-stress assignment.

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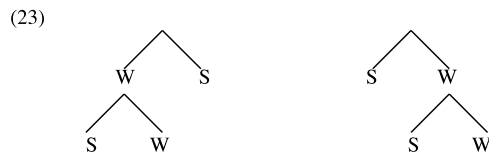
...most people readily accept anapestic feet with trochaic words making up the weak position, as in

(21) *Oh, say, / can you see / by the dawn's / early light*

but everyone finds them jarring when iambic words are substituted:

(22) \* *Oh, say, / can you see / by the dawn's / intense light*

This has been taken to show (Kiparsky 1977) that triple meters are really duple meters with divided weak positions. One possibility is to represent them by nested binary structures such as



Prince (1989) proposes a metrical typology that specifically excludes any other structures for 3-position meters. He states that the left-hand structure above is the only possible structure for the anapestic foot.

Carroll's poetry flies in the face of these proposals, showing lines exactly analogous to Kiparsky's (1989) starred (22). Consider the placement of the boldfaced words in examples (1) and (2) below:<sup>2</sup>

(1) "You must know ---" / said the Judge: / but the Snark / **exclaimed**  
"Fudge!" (Snark, p. 86)

(2) When the Snark / **pronounced** sent/ence, the Judge / being quite/  
(Snark, p.87)

This constitutes the first mystery, which I will label "2-strong." I will show that Prince's (1989) typology must be revised or abandoned in order to account for the 2-strong phenomenon; Carroll's anapest can only have a structure that he predicts to be nonexistent.

The second phenomenon I will discuss has not, to my knowledge, been dealt with in the generative tradition, though it is mentioned briefly in Steele (1999:236): it is the substitution of two-position feet (iamb-like feet) for anapests in certain parts of the line in *The Snark*. Since the verse remains overwhelmingly

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<sup>2</sup> My scansion is partially based on my own intuitions, though they are strongly guided if not determined by two considerations: they divide lines into feet of 3 syllables if that is not entirely impossible, and they unfailingly maintain a pattern of 4-3-4-3 feet/line in each stanza, a pattern that is present throughout the poem including, of course, in stanzas where no feet smaller than 3 positions occur.

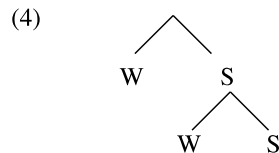
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anapestic, this is *prima facie* a different phenomenon than “loose” or mixed meters of the kind discussed in Halle and Keyser (1998).<sup>3</sup> This phenomenon stares the analyst in the face literally from the outset of the poem:

(3) “Just the place / for a Snark!” / **the Bell/man cried,**/ (*Snark*, line 1, p.45)

This line illustrates in a particularly poignant way how impossible it is to arrive at consistent scansions for lines in *The Snark* without positing the existence of 2-position feet like feet 3 and 4 above; this line should be four feet long according to the structure of every other stanza in the poem. (3) also shows that this phenomenon, which I will refer to as “iambic substitution,”<sup>4</sup> does not need to occur at major syntactic boundaries or indeed, at any syntactic boundary at all; the edges of an iambic substitution may freely split syntactic words. This feature of iambic substitution makes it something very different from the omission of initial metrical positions in feet in iambic poetry, which is licensed at major syntactic boundaries for many poets, including Shakespeare.

This paper shows how all of the characteristics of Carroll’s meter follow from the formal theory of meter developed in Hanson and Kiparsky (1996), once we rethink the basic structure of the anapest. Section 1 introduces this theory and comments on competing approaches to formal metrics. In section 2, I argue that Carroll’s meter is one of the possible meters for English predicted by the Hanson and Kiparsky (1996) theory, but only if the Carrollian anapest has the supposedly impossible structure shown in (4) below.



Finally, section 3 offers some conclusions and directions for further research. This paper tests the Hanson and Kiparsky (1996) framework on a new set of data, offering another example of how a broader and more phonologically-based view of poetic meter is indispensable, and disproves one aspect of the Prince (1989) foot typology in the process. I submit that Carroll’s meter in *The Snark* is sufficiently complex that a theory with any less subtlety or phonological sophistication than Hanson and Kiparsky’s will not be able to capture it.

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<sup>3</sup> I also discuss below reasons that the theory presented in Halle and Keyser (1998) cannot account for Carroll’s verse. That is not to judge its relevance for Robert Frost’s meter, which, after all, it was developed for.

<sup>4</sup> This term is meant to be purely mnemonic; it is not meant to assert that these feet are actually normal English iambs like, for example, iambs in Shakespeare. I will discuss the reasons for this distinction in section 3 below.

## 2. Overview of Hanson and Kiparsky (1996), among other things

Central to the “Parametric Theory of Poetic Meter,” proposed in Hanson and Kiparsky (1996), is the idea that the full battery of prosodic categories and features motivated in other areas of phonological theory must be brought to bear on problems of poetic metrics. Independently motivated prosodic constituents are necessary to provide an adequately explanatory theory of the size of metrical positions, and a range of prosodic features are necessary to provide an explanatory theory of metrical prominence. They show that meters may refer to the features of stress, strength,<sup>5</sup> and weight in defining metrical prominence, all of which are used in the discussion of other phonological phenomena. They further argue that, though the ultimate choice of how to define the characteristics of metrical positions lies with the individual poet, some meters are more likely to emerge than others for particular languages, since some choices would exclude so much of a given language’s vocabulary as to make writing poetry nearly impossible (their FIT principle). Thus, they provide evidence for the idea that poetic-metrical phenomena fall right in line with the larger phonology of a given language.

In their view, a line of poetry is composed of a reoccurring pattern of metrical positions (i.e. feet), which come in two types: S(trong) and W(eak). A number of parameter settings determine the size of prosodic constituent that can fit into each position and the difference between an S and a W position in terms of prominence. I will illustrate first with one meter they discuss at length: that of Shakespeare’s iambic verse, which they assume to have binary feet with the structure [W S].

Two features of this meter they address are: unstressed syllables may occupy S positions as well as W positions (as in examples (6)-(8) below, my boldface):

(6) That Cae/sar is / more dan/gerous / than he.  
(*Shakespeare, Julius Caesar II,ii,45*)

(7) This dream /is all/ amiss / inter/pret**ed**.  
(*Shakespeare, Julius Caesar II,ii,83*)

and from time to time, multiple syllables seem to occupy the S position, as in (8) and (9) below:

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<sup>5</sup> Citing Liberman and Prince (1977), Hanson and Kiparsky (1996:291) define +strength prosodic constituents as “the head of, or only descendant of a head of, a branching constituent.” This seems to correspond to primary stress much of the time, though primary stresses of monosyllabic words are crucially –strength, and there may be multiple +strength syllables in very long polysyllabic words. In order to avoid confusing the strength of a stressed syllable with “Strong” in the sense of an S rather than a W metrical position, I will use “±strength” to refer to the Liberman and Prince-style “strength” of a syllable, reserving “Strong” to describe one of the two types of metrical positions.

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(8) And spends / his **prodi**/gal wits / in boot/less rhyme.  
(*Love's Labour Lost*, V,ii,64)

(9) And are / upon / the **medi**/terra/nean float. (The *Tempest*, I,ii,234)

The first set of lines show that the prominence restrictions on Shakespearean S and W positions are nontrivial, and the second set of lines bear on the question of metrical position size. If iambic pentameter is composed of lines with 10 metrical positions (alternating in a pattern of W and S positions), then the seemingly extra syllables in the boldface sections above cannot fit if each metrical position is no larger than a syllable. Shakespeare's iambic meter must be defined in such a way as to allow two syllables in a single S position, and any attempts to alter the scansion of the above lines will result in more severe problems for a theory of iambic meter (e.g. by forcing primary stresses to occupy W positions, etc.). Hanson and Kiparsky (1996) also show this phenomenon, traditionally called "Resolution," to be qualitatively different from line-final "extrametrical" (in the poetic-metrical sense, rather than the stress-metrical sense) syllables, which are admitted even by poets as rigid in their iambic meter as Alexander Pope:

(10) And thus / broke out / – "My Lord, / why, what / the **devil**!  
Zounds! damn / the lock! / 'fore Gad, / you must / be **civil**!  
(*The Rape of the Lock*, li. 127-8, Ferguson, Salter,  
and Stallworthy 1970:560)

On the basis of phenomena like these, they arrive at the following parameter settings for Shakespearean iambic verse:

STRUCTURE: iambic feet, as above, 5 times per line (pentameter)

REALIZATION:

POSITION SIZE: **maximal metrical position** =  $\phi_{\text{minimal}}$

PROMINENCE SITE: W => not Prominent

PROMINENCE TYPE: +strength

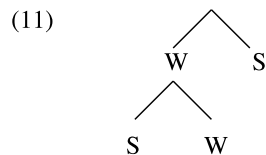
Their parameter settings allow unstressed syllables to occur in S positions because the PROMINENCE SITE is W; the meter's only prominence constraints are stated on the W positions, not on the S positions. The PROMINENCE TYPE setting keeps +strength syllables from occurring in W positions, but correctly predicts that some stressed syllables, such as secondary stresses or monosyllabic lexical words (as opposed to functional monosyllables),<sup>6</sup> may occur in W positions. Finally, the POSITION SIZE parameter is set (as a maximal size) to the size of the minimal

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<sup>6</sup> I will assume, throughout this paper, the division between "lexical" and "functional" laid out in Selkirk (1995). Hanson and Kiparsky (1996) also discuss differences between lexical and functional words in verse.

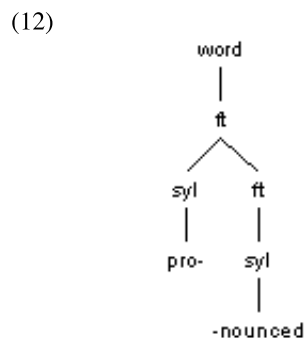
stress-foot, which they assume to be the moraic trochee (the stress-metrical foot type from the typology of stress-metrical feet assumed in McCarthy and Prince 1996, Hayes 1995, Kager 1999:147, *inter alia*) in English. In this way, “prodi-” in (9) and “medi-” in (10) can occupy an S position since both syllables are light.

If the generalization above from Kiparsky (1989) were right for anapestic verse, and anapestic feet containing +strength syllables in position 2 were truly disallowed, then the parameter settings Hanson and Kiparsky (1996) propose for Shakespearean iambic verse would be consistent with the facts for anapestic verse as well. The structure from Kiparsky (1977:228) and Prince (1989:55), repeated below, coupled with the parameter settings above, would allow +strength syllables in positions 1 and 3 of the anapest, but prevent them from occurring in position 2.



And as in Shakespearean iambic verse, since the constraint is stated on position 2 (the W position) rather than on the S-type positions, unstressed syllables would be licensed in position 1 also.

It is possible that there are anapestic verse forms which work this way, but this theory of anapestic meter cannot be maintained for Carroll: the PROMINENCE SITE setting specifically rules out feet like the ones in examples (1) and (2) above. Note that the second syllables of words like *pronounced* are +strength by virtue of being the “only descendant of a head of, a branching constituent” in the parsing of words assumed in Hanson and Kiparsky (1996:291):



The same foot in line (2) would also run afoul of a PROMINENCE SITE setting that constrained the S positions (rather than the W position) to contain either +strength

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or stressed syllables, since it also contains an unstressed syllable in position 1. Either the Hanson and Kiparsky (1996) theory of metrical prominence cannot handle these data, or the structure the theory is being applied to is lacking in some way. I will demonstrate in the next section that the latter stance is more productive.

I digress for a moment to consider the data from Carroll in light of a different theory of metrics, the metrical grid-theory of Halle and Keyser (1998) and Fabb (2002), *inter alia*. This theory fails to account for the type of data in (1) and (2), primarily because of the centrality of the notion of “stress maximum” (Fabb 2002:18, 28; Halle and Keyser 1998:143). This theory constructs feet by inserting brackets, counting syllables from one side of the poetic line, according to a defined algorithm. For anapestic verse, “right brackets from right to left” are “inserted after every three syllables” (Fabb 2002:25). Stress maxima, which, excepting a few cases, are defined as the primary stressed syllable in a polysyllabic word, are expected to fall in the rightmost position of each foot for anapestic verse. This theory would place the foot boundaries where I have marked them for lines such as those in (1) and (2), but they would be judged as ill-formed since the second syllables of *exclaimed* and *pronounced* are stress maxima which do not fall in the rightmost position in their respective feet. It might make sense to apply the grid theory as it has been developed for “loose iambic” meter (Fabb 2002:26-33, Halle and Keyser 1998), which would at least be able to account for the iambic substitution feet in Carroll’s meter. This version of the theory involves first inserting right brackets in a line to right of stress maxima, and then inserting left-brackets every two syllables from right to left. This technique might capture the iambic substitution lines but it also fails on lines like (1) and (2):

(13) When (the **Snark** (pronounced] **sent**](ence, **the** (Judge **be**](ing **quite**

It scans this line as containing 6 feet (headed by the bolded syllables), which would be very disruptive to the general 4-3-4-3 pattern of feet per line in the *Snark*. Having seen that Carroll’s meter does not fit well with the grid theory, I will proceed to further evaluate Hanson and Kiparsky’s (1996) performance on the same data.

### **3. An Unexpected Anapest, but an Expected Meter**

Taking seriously the metrical typology predicted by Hanson and Kiparsky’s (1996) parametric approach leads to a specific set of parameter settings and a specific foot structure for Carrollian anapestic verse. In fact, the meter that emerges from the structure and set of constraints I will propose is predicted to exist for English by their FIT principle. The defining feature of this new anapest is that position 3 of the three-position foot is the one position which is constrained as to prominence.

Under any setting of the PROMINENCE TYPE parameter, the inescapable conclusion after analyzing the meter of *The Snark* is that positions 1 and 2 of the

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Carrollian anapest are equally unconstrained: they are of the same type. Carroll's poetry is like other anapestic verse in abundantly showing the phenomenon illustrated in Kiparsky's (1989) example (21) and also reported in Prince (1989:54), as in the two lines below:

(14) Or would sit / **making** lace / in the bow. (Snark, p.48)

(15) With his name / **painted** clear/ly on each. (ibid.)

The second foot of these lines show syllables that are +strength and stressed in position 1. As we have seen, that position must be able to accommodate prominent syllables regardless of whether PROMINENCE TYPE is set to "stress" or "strength." In addition, lines in examples (1) and (2) above demonstrate that position 2 can similarly accommodate both stressed and +strength syllables. Two more examples of 2-strong are below:

(16) Two ex/cellent Po/licies, one / **Against** Fire (Snark, p.53)

(17) "If it once / **becomes** dark, / there's no chance / of a Snark-- (Snark, p.63)

Examples (16) and (2) are particularly illustrative as they also show the ability of entirely unstressed syllables to occupy position 1. Of course, it is certainly possible for both positions 1 and 2 to be occupied by unstressed syllables simultaneously, as in (18) and (19).

(18) It is a/**ges** ahead / of the fashion: (Snark, p.81)

(19) And in cha/**rity**-mee/tings it stands / at the door (ibid.)

Finally, though one would not expect an English meter to be entirely weight-based, it is worth pointing out that positions 1 and 2 are also unconstrained as to weight (see examples 14, 15, 18, and 19). In this way, every possible setting of PROMINENCE TYPE points to positions 1 and 2 being equivalent in terms of their hard metrical constraints.

Considering the observations above, the Hanson and Kiparsky (1996) theory forces the conclusion that position 3 is the one constrained by the meter, and the facts about position 3 bear this out. Position 3 does not necessarily contain +strength syllables, as nearly half of all feet in *The Snark* have monosyllabic words in position 3; lexical monosyllables are stressed (they have normal word stress), but they are not +strength according to the definition in Hanson and Kiparsky (1996) and Liberman and Prince (1977). However, position 3 does not contain an unstressed syllable in any foot in *The Snark*. This stands in stark contrast to English iambic verse, in which unstressed syllables regularly occupy both foot positions (as I discussed in the previous section). The closest a

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Carrollian foot ever gets is in having a monosyllabic function word in position 3, as in the line below:

(20) He had se/ven coats on / when he came (*Snark*, p.48)

However, this is rare, even if the count includes modals, wh-words, and demonstrative pronouns, occurring in 40 feet total (= 2.03% of feet in the poem). Furthermore, every example is a function word consisting of a heavy syllable, bearing word-stress by virtue of its constituting a minimal stress-foot. All the evidence points to position 3 being constrained to contain a prominent syllable, with prominence defined as stress. Therefore, the structure of Carroll's anapest can either be (21) or (22) below, with the parameter settings as in (23).



(23) STRUCTURE: Carrollian anapest, as above, 4-3-4-3 times per for the four lines of each stanza, respectively.

REALIZATION:

POSITION SIZE:  $\sigma$

PROMINENCE SITE: S => Prominent

PROMINENCE TYPE: stress

My characterization of Carroll's verse makes two other predictions which I should mention. First, it admits the possibility that a foot could have some type of stress in all three slots. This sounds somewhat unintuitive, but such examples do exist:

(24) Said he had / hoped, at least, when the wind / **blew due East** (*Snark*, p.58)

(25) He had just / **one idea--** / but, that one / being "Snark," (*Snark*, p.52)

(26) And was al/**most too fright**/ened to speak: (*ibid.*)

The parameter settings also predict that a –strength secondarily stressed syllable could occupy the S position of the anapest. Such examples also occur, though they are rare:

(27) But espe/cially "Thing/-um-a-**jig**! (*Snark*, p. 50)

(28) With a fla/vor of Will/-o-the-wisp. (Snark, p. 59)

The phenomenon of iambic substitution helps to choose between the structures in (21) and (22) above; the binary branching structure in (21) offers an explanation as to why iambic substitution is possible, as well as maintaining the hypothesis in Kiparsky (1977) and Prince (1989) that poetic feet have binary branching structures. According to this hypothesis, triple meters are truly realizations of binary patterns. One of the two positions is “split,” in Prince’s and Kiparsky’s terminology. This view makes iambic substitution altogether less surprising: it is the replacing of one W-S pattern with another, more basic W-S pattern. It is also important to recognize that the iambic substitution in Carroll’s verse is probably not the insertion of a normal English iamb in place of a Carrollian anapest. The data are not robust enough to be entirely sure of the following generalization, but the substitution feet bear a resemblance to Carroll’s anapestic feet in that their S position contains a stress. I think it is likely that the requirement of having a stressed syllable occupy the S position persists in these 2-place feet. This is precisely the effect one would expect if iambic substitution is not really the substitution of an iamb, per se, but an unsplitting of the anapest’s S position; the normal constraint on S-type positions in Carroll’s verse would remain. This effect follows naturally from the structure. Therefore, in a number of ways, the hypothesis of binary branching feet proves its usefulness.

In addition to the empirical weight behind it, the combination of the structure in (21) and the parameter settings in (23) is predicted by the Hanson and Kiparsky (1996:294) theory as a possible (and likely) meter for English by their principle of FIT. The notion of FIT says, assuming I’m correct about the structure of the anapest, that the nature of English makes certain parameter settings much more likely than other parameter settings, considering aspects of the English vocabulary the meter will need to accommodate. For instance, if the W positions were constrained to not contain stressed syllables, words like *maintain* (which contains two adjacent stressed syllables) would be unusable. If, on the other hand, W positions were constrained to not contain +strength syllables, words with adjacent +strength syllables, like *hierarchy*, would never fit in the meter. The poet could conceivably avoid this last problem through iambic substitution, assuming the position and number of iambic substitutions are entirely free. However, even under this assumption (which is very far from certain, a point I will return to in the following section), the choice would be forced upon the poet by the vocabulary every time a word of this structure is required. If S positions were constrained to contain a +strength syllable, then prepositional phrases containing 3 monosyllabic words (a very frequent element in *The Snark*), such as *for a Snark*, would not be usable. It is possible to imagine parameter settings that are even less restrictive than the ones I have chosen, but the settings in (21) seem to be the most restrictive possible for the structure in (19) while still allowing the full use of English vocabulary. Note that FIT also explains why iambic substitution, while in principle a free process for Carroll, nevertheless does not occur all the time: lines

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with many adjacent [W S] feet coupled with Carroll's prominence settings would be far too restrictive for English vocabulary.<sup>7</sup> In this way, the Hanson and Kiparsky (1996) theory pays a number of dividends as a research program: it has happily forced me to adopt a set of parameter values for this data set that it also predicts as a possible English meter in principle.

#### **4. Conclusions**

Hanson and Kiparsky (1996) present a set of parameters and settings which potentially characterize a host of meters beyond the ones they describe. Given enough poetry, all of these meters should be attested, as long as FIT is obeyed given the structure of a given language's vocabulary. This paper has shown that one of the possible meters for English according to FIT is in fact attested in Carroll's anapestic verse. Though its parameter settings are more restrictive than previously described English meters (maximally syllable-sized positions coupled with stress in S positions), it is able to fit English vocabulary because of the structure of the anapest Carroll has chosen to employ.

In accounting for the metrical leniencies in *The Hunting of the Snark*, this study has also shown that Carroll's verse is actually a distinct poetic form from the ones previously described. It is a provably different meter from the anapestic verse described in, *inter alia*, Kiparsky (1977), Kiparsky (1989), and Prince (1989), and Carroll's anapest must be analyzed as different from the 3-position feet admitted by the Prince (1989) typology. While his binary branching hypothesis is correct for Carroll, his restriction that all split positions consist of an [S W] pattern cannot be maintained for Carroll and should be revised. What is not yet clear is how many other anapestic poets use a Carrollian meter rather than the type of anapestic meter previously described. This is an obvious direction for further study, along with a fuller quantitative exploration of how Carroll employs the leniencies allowed by the constraints on his verse.

This study thus lends support to the Hanson and Kiparsky (1996) theory in particular and, more generally, to the hypothesis that a full theory of prosodic categories and prosodic prominence is required in order to precisely describe poetic metrics.

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<sup>7</sup> Unfortunately, a full discussion of statistical tendencies in *The Hunting of the Snark* is beyond the scope of this paper. I hope to present such a study in future publications.

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