

Does secondary stress exist in Norwegian?

Overview:

- In Norwegian words, there is only one syllable that can realize both a tonal contrast and a length contrast. This is traditionally called the ‘stressed’ syllable.
 - It has been common to assume that there are intermediate levels of stress in Norwegian, so-called ‘secondary stress’.
 - This view is, however, based on assumptions that certain segments and prosodic features must be licensed by stress.
 - It is not clear why these assumptions are made, and they can safely be discarded.
 - As a result, there is no need to postulate ‘secondary stress’ in Norwegian.
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1 Preliminaries

- (1) By *Norwegian* here is meant contemporary ‘Urban East Norwegian’ (Kristoffersen 2000: 8–10).
- (2) I will assume traditional views on syllables and stress. This talk is only about ‘secondary stress’ within such a framework.
- (3) I will only look at single polysyllabic words spoken in isolation.

2 Stress

- (4) In Norwegian words, there is one and only one syllable in which both a tonal contrast and a length contrast can be realized.
- (5) These contrasts can only be realized on a vowel.

(6) This gives a possible four-way contrast:

- /màta/ – /mà:ta/ – /mâta/ – /mâ:ta/

(7) The syllable with these two possible contrasts is assumed to have (*primary*) stress (Kristoffersen 2000: 141).

3 Length

3.1 Vowel length

(8) As seen in (6), length is contrastive.

(9) The length contrast is realized almost exclusively on the vowel, with long vowels being about twice as long as short vowels.

(10) LONG TO SHORT VOWELS

Source	Ratio
Fintoft (1961: 33–34)	1.5–2
Vanvik (1972: 151–152, 154)	2.1–2.7
Payne et al. (2017: 146, 153)	1.4–3.3

3.2 Consonant length

(11) A consonant immediately following a stressed *short* vowel is typically, but not necessarily, lengthened = ‘long’ consonant.

- [mât̚ə] ‘mat; math’ – [uîs:tə] ‘know.PRET’

(12) A consonant is not lengthened following a stressed *long* vowel = ‘short’ consonant.

- [mâ:tə] ‘feed.INF’ – [uî:stə] ‘show.PRET’

(13) ‘LONG’ TO ‘SHORT’ CONSONANTS

Source	Ratio
Fintoft (1961: 34)	1.1–1.2
Jensen (1962: 679–680)	1.2
Vanvik (1972: 151–152, 154)	1.1–1.4
Payne et al. (2017: 146, 153)	1.0–1.8

- (14) If the stressed short vowel is followed by more than one syllable, consonant lengthening is claimed to be absent altogether (Alnæs 1925: 17, Vanvik 1972: 148).
- [ànanas] ‘pineapple’ – [dùminu] ‘domino’

3.3 Analysis

- (15) Vowel length is the primary, and obligatory, realization of the length contrast in (6).
- (16) Speakers use consonant length as a secondary, and optional, enhancement of the length contrast.
- (17) Listeners use consonant length as a weak secondary cue to the length contrast.
- (18) Van Dommelen finds that ‘long’ consonants (ratio 1.5) reduce the perceived duration of a preceding vowel only by 5 % (1999: 111, 114).

4 Contrasts outside of stress

- (19) A tonal contrast can only be realized in one location of the word. The following is therefore not a possible contrast:
- */sâmàta/ – */sâmâta/

- (20) An existing tonal contrast is lost when that syllable loses stress (Kristoffersen 2000: 141):

/lànə/ ‘country.DEF’	/lîsomlanə/ ‘pretend country.DEF’
/lânə/ ‘land.INF’	/lîsomlanə/ ‘pretend land.INF’

/jæ:ŋə/ ‘trap.DEF’	/rê:vəjæ:ŋə/ ‘fox trap.DEF’
/jæ:ŋə/ ‘brain’	/rê:vəjæ:ŋə/ ‘fox brain’

- (21) Unlike tone, a length contrast can be realized also outside of the stressed syllable:
- /û:tak/ ‘ingratitude’ – /û:ta:k/ ‘jack; outlet; withdrawal’
 - /hàgis/ ‘haggis’ – /tòri:s/ ‘dry ice’

- (22) An existing length contrast is retained when that syllable loses stress (2000: 141):

/tap/ ‘bundle of hay’	/sævətəp/ ‘bundle of hay for sheep’
/tə:p/ ‘loss’	/sævətə:p/ ‘loss of sheep’

/lê:sə/ ‘load.INF’	/brô:lê:sə/ ‘quickly load.INF’
/lê:sə/ ‘read.INF’	/brô:lê:sə/ ‘quickly read.INF’

5 Secondary stress?

- (23) There is a long tradition in assuming intermediate levels of stress in Norwegian.
- (24) The point of departure here will be the seminal treatment by Kristoffersen (2000), who assumes two intermediate levels of stress:
- ‘Weak secondary stress’
 - ‘Strong secondary stress’
- (25) It is not clear what the distinction between ‘weak’ and ‘strong’ secondary stress is, and Kristoffersen admits that “there does not seem to be a perceptible difference between the two secondary stress levels” (2000: 193).
- (26) Under Kristoffersen’s analysis, ‘secondary stress’ is an abstract notion, and is theoretically formalized as ‘mark on the next highest line in the bracketed grid that is not promoted to the top line’ (2000: 145, 167).

Primary stress		x	
Secondary stress	(x	x)	
Stress feet	(x	x)	(x
Segments	C	V	C. C
		V	C. C
			V

5.1 Weak secondary stress

- (27) If the first syllable of a word does not have primary stress, then it has ‘weak secondary stress’ (Kristoffersen 2000: 163–166).
- (28) Kristoffersen’s arguments are the following:
1. In open syllables, the vowel [ɛ] can only exist if it is part of a “stress foot”. Word forms like [tɛ.ɭə.¹fu:n] and [sɛ.ɭək.¹ʂu:n] demonstrate that the initial syllable has secondary stress (2000: 21, 164).
 2. In vernacular varieties of Norwegian, “primary stress may be moved to the initial syllable”, giving [²tɛ.ɭə.¹fu:n] and [²sɛ.ɭək.¹ʂu:n]. This means that an initial stress foot is built before the primary stress is moved there (2000: 165–166, 272).
- (29) These arguments are, however, built on assumptions:
1. (a) That [ɛ] in open syllables must be licensed by a stress foot is required under the assumption that [ɛ] and [ə] are the stressed and unstressed allophones, respectively, of the same phoneme /e/. Once that assumption is removed, its support for secondary stress also disappears (Vanvik 1972: 134–135).

(b) There is an apparent circularity in the argument. The presence of [ɛ] demonstrates the presence of stress, and the presence of stress explains the presence of [ɛ]. Each of the two assumptions rests on the other assumption.

(c) The vowels [ɛ] and [ə] do in fact contrast in a final closed syllable:

/ʃø:vət/ 'sea sense' /ʃê|ət/ 'skeleton' /kù:pek/ 'kopek'
/ʃø:vət/ 'pushed' /ʃê|ət/ 'scaly' /tâ|ək/ 'plate'

(d) The contrast is lost in other positions, and people disagree whether the vowel is [ɛ] or [ə]. Cf. that Berulfsen transcribes [selekfo:n] with [e] in the second syllable (1969: 279), whereas Kristoffersen transcribes it with [ə]. It is possible to generalize over the loss of contrast between [ɛ] and [ə] with reference to position, without the need to resort to 'secondary stress'.

2. (a) The prior existence of an initial stress foot before stress movement is a theory-internal requirement. Under a different approach, e.g. a non-derivational account, such an assumption would be unwarranted.

(b) No arguments are provided why the stress has moved to the initial syllable from an earlier location elsewhere in the word, instead of being placed on the initial syllable from the start.

(c) It is unclear how the placement of primary stress in one variety of Norwegian informs us about secondary stress in a different variety of Norwegian.

(30) Unlike primary stress, there are no known phonetic correlates of 'weak secondary stress' (Kristoffersen 2000: 163).

5.2 Strong secondary stress

(31) A 'strong secondary stress' is found in two instances:

- On certain derivational suffixes, e.g. /-he:t/ and /-dom/ (Kristoffersen 2000: 44, 182, 184).
- On all non-initial members of compounds. The first member has primary stress (2000: 184).

(32) There is only one argument for this view:

- The morphemes mentioned in (31) have either a long vowel or a lengthened consonant, and since segmental length only exists in stressed syllables, it shows that some level of stress must be present on these morphemes (2000: 117–120,

(33) This argument is, however, also based on assumptions:

- That segmental length is dependent on stress is a theoretical assumption, and there is no clear reason why length cannot exist independently of stress.
- According to Kristoffersen, segmental length is a consequence of stress (2000: 117–120). The reasoning is thus circular: A long segment indicates the presence of stress, and the presence of stress explains why the segment is long.
- Kristoffersen admits that there is a “lack of clear phonetic cues” to lengthened consonants in these morphemes (2000: 190). To my knowledge, such lengthening has never been demonstrated.

6 Conclusion

- (34) There is one location in the word that is more prominent than others, in that it is the only location in which a tonal contrast can be expressed = ‘stress’.
- (35) There are no other prosodic contrasts that are limited to specific parts of the word, nor any other prosodic contrast that is lost when the location of stress is changed.
- (36) As a result, there is no need to postulate any intermediate levels of stress.

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