

9. Word accent systems in the languages of Europe

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1. Introduction¹

This chapter deals with accentual systems in the languages of Europe. This work, however, does not claim completeness. Rather, it presents an agenda for further research especially witnessed by several sections where little or no information on accentual systems is presented. I am not defending these limitations by claiming that the basic descriptive work has not been done in all these cases, although for a number of languages this is most likely true. I have no doubt that a lot of useful information on word accent not reported here *has* been done and *is* present in the countless language descriptions that, for various reasons, I have been unable to consult. With these limitations, I hope that this chapter still offers a useful survey which will stimulate further typological and theoretical work.

In section 2 I outline the contents of this chapter, motivating its organization. Section 3 explains the materials on which this chapter is based. Sections 4 present the accentual data. Finally, in section 5 I will offer some general observations and conclusions.

2. Contents of this chapter

I will here provide a table of contents:

1. Introduction
2. Contents of this chapter
3. A note on the information on which this chapter is based

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1. I wish to acknowledge the help of various people who gave me feedback on parts of this chapter: Arthur Abrahamson, Greg Dogil, Ben Hermans, Rob Goedemans, Antony Green, Craig Melchert, Martin Haspelmath, José Hualde, Michael Noonan, Anthi Revithiadou, Tomas Riad, Iggy Roca, Bob Vago, Bert Vaux, Richard Wiese.

- 1 4. Europe (North-West Eurasia)
- 2 4.1. Indo-European (minus Indo-Iranian²)
- 3 4.2. Basque
- 4 4.3. Kartvelian (South Caucasian)
- 5 4.4. North Caucasian
- 6 4.5. Uralic (excluding Yukaghir³)
- 7 4.6. Etruscan
- 8 5. Generalizations and conclusions

9 The organization of each section (or subsection) with accentual data is
10 as follows:

11
12 a. ***Genetic structure of the (sub)family***; these are based on sources such
13 as Voegelin and Voegelin (1977), Ruhlen (1987, 1991), Comrie et al.
14 (2003), the Ethnologue (Gordon 2005) and several others of the many
15 sources that offer classifications. I have tried to strike a compromise
16 in cases of conflicting groupings and no claim is made here that the
17 resulting groupings are superior to those offered in other sources.
18 The information on classification is merely added to orient the reader
19 in the wealth of languages. In addition, with information on classifica-
20 tion close at hand, it is easier to spot lacunas in this survey.

21 In each case (sub)family names are presented in capitals. I have
22 not included information on the *numbers* of languages per (sub)family
23 and in most cases list only a (sometimes rather arbitrary) subset of
24 the languages in each (sub)family. Languages that are included in
25 StressTyp (see section 3) are indicated in bold. Languages that are
26 not in StressTyp about which this chapter provides information are
27 underlined.

28 The genetic information is sometimes followed by some geogra-
29 phical and/or commonly known archaeological-historical and dating
30 information, again based on a variety of sources.

31 b. ***Extracts from StressTyp entries*** (language name followed by StressTyp
32 Code and examples). More complete extracts (including references) are
33 offered in Part II of this volume and, of course, in StressTyp itself.

34
35 c. ***Additional accent information***: This might involve additional informa-
36 tion on languages already in StressTyp, or information on languages

37
38 2. The Indo-Iranian languages are surveyed in Chapter 10, section 6.1.

39 3. Yukaghir is treated in Chapter 10, section 4.2.2.

that are not in StressTyp. (In some larger families that are treated in one section I have presented the StressTyp extracts and additional information per subfamily.)

- d. **Generalizations:** I have tried to make general statements about the accentual patterns in the relevant (sub)family, in some cases accompanied by remarks about diachronic developments.

If (b) is absent, (c) will be labeled ‘accent information’. Sometimes (c) and (d) are conflated into a single section.

3. A note on the information on which this chapter is based

The first source for the accentual data presented here is StressTyp (see chapter 1, 2, 12 and Part II of this book).⁴ In addition, I rely on the collection of chapters in van der Hulst (1999) and, in particular on one of the articles in this collection, namely van der Hulst, Hendriks and van de Weijer (1999) which also aimed to be a ‘survey of word prosodic systems of European languages’ based on the articles in van der Hulst (1999) and on additional accentual literature. Thirdly, I consulted books that offer surveys of language families or languages in a specific geographical area. Fourthly, I have consulted grammars of individual languages and, fifthly, I have sent email queries to colleagues; where I rely on information that they directly have given to me (via email or in personal communication) I note this in the text.

In line with my own previous work on word accentual systems, I prefer to use the term ‘word accent’ where many others would use the term ‘word stress’ (as in done in StressTyp). I refer to van der Hulst (1999, 2002, 2006, 2009) and chapter 1 of this volume for a justification and clarification of

4. I am aware of two other *computerized* databases with word accentual information. The first one is the ‘Stress systems database’ compiled by T. Bailey containing information on 191 languages. The second database, compiled by Matthew Gordon, contains information on 273 languages, all having quantity-insensitive primary accent. Both databases contain a list of language names (including highest family name in Gordon’s collection), an elementary stress code (comparable to the primary code in StressTyp) and references to the sources. In addition Bailey’s database contains miscellaneous remarks regarding syllable weight etc. A comparison of these two databases to StressTyp is offered in Goedemans and van der Hulst (2009).

1 this terminological choice. However, given the wide variety of sources that
 2 underlie this chapter, I have not tried to replace the term ‘stress’ by the
 3 term ‘accent’ in all places. For practical purpose, then, the two terms are
 4 used interchangeably in this chapter.

7 **4. The concept ‘Europe’**

9 The concept of ‘European languages’ is not easy to define. I will adopt
 10 here the working definition in Price (1998). On the north west side, Europe
 11 extends as far as Iceland and, going southward, includes the Portuguese
 12 Islands, called the Azores (but not the also Portuguese Madeira Islands
 13 which are reckoned to belong to Africa); the language on all these islands
 14 is, anyway, Portuguese. In the Mediterranean Sea, Malta (with Maltese
 15 Arabic) just south of Sicily is included, as well as Cyprus (with Turkish
 16 and Greek as its main languages) even though this island is, geogra-
 17 phically speaking, rather a part of Asia. On the south eastern side, the
 18 Caucasus Mountains form a natural boundary between Europe and Asia.
 19 However, Georgia and Armenia, on the Asian side of these mountains,
 20 are considered European in Price (1998). This brings the Caucasian lan-
 21 guages within the scope of Europe. Price also includes Azerbaijan which,
 22 with Turkey generally considered a European country, brings many
 23 Turkic languages within the scope of this section too. However, Turkic
 24 languages are not dealt with in this chapter and are included in chapter 10,
 25 section 5.1. The eastern border of Europe is taken to be the Ural Moun-
 26 tains (where, we shall say, the Siberian part of Russia starts) and from
 27 there going down to the border of Kazakhstan, the west border of which
 28 is taken to terminate Europe up to the Caspian Sea.

29 In Europe, thus defined, we find 5 language families, one of which
 30 (Basque) is often considered to comprise one language (although with
 31 significant dialect variation):

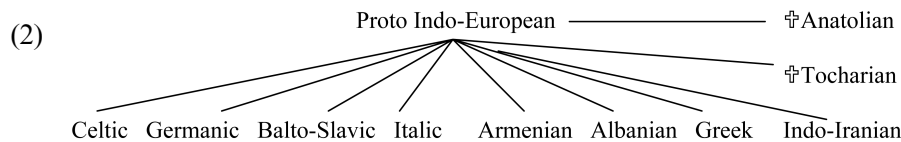
- 32 (1) Indo-European
- 33 Basque
- 34 South Caucasian (also called Kartvelian)
- 35 North Caucasian⁵
- 36 Uralic
- 37
- 38

39 5. North Caucasian is regularly regarded as comprising two distinct families:
 40 Abkhaz-Adyghean (Northwest Caucasian) and Nakh-Daghestanian (North-
 east Caucasian).

1 Within the Indo-European family, Indo-Iranian falls within South Asia
 2 and is treated in Chapter 10. All Uralic languages are included in this
 3 Chapter except Yukaghir which is also covered in Chapter 10.⁶

4.1. *Indo-European (minus Indo-Iranian)*

7 This large family, which covers most of Europe, consists of the following
 8 subfamilies, two of which are extinct:



15 Ruhlen (1991), among others, adopts the view in which Anatolian is a
 16 sister to the IE family to reflect that it is different from all other IE
 17 subfamilies regarded as a group. Ramat and Ramat (1998) surveys the
 18 languages of the IE family.

19 Other potential branches (mostly all represented by one extinct lan-
 20 guage) are Phrygian, Venetic (possibly a form of Italic, often including
 21 Liburnian), Lusitanian, Thracian, Macedonian, Paionian, Dacian, Illyrian
 22 and Messapian (likely to be a form of Illyrian) (Beekes 1995: 17–30). The
 23 first three are known from a fair number of inscriptions, the latter four
 24 only from few inscriptions or names and glosses. Baldi (1983: 165 ff.)
 25 mentions a few other candidate IE languages known from very meager
 26 evidence (place names etc.): Ligurian, Lepontic (possibly a continental
 27 Celtic language), Sicel (close to Italic), Raetic (almost no evidence at all).
 28 No reliable accentual information is available, or even possible for these
 29 languages.

30 A further subgrouping (including Phrygian, but not Anatolian) is some-
 31 times proposed:

34
 35 6. This survey ignores the fact that in this day and age, numerous languages be-
 36 longing to other language families have large numbers of speakers in Euro-
 37 pean countries, due to massive immigration over the last couple of centuries.
 38 As is often the case in typological studies that concentrate on specific areas,
 39 what we are looking at is essentially the distribution of languages in the period
 40 prior to these recent immigrations and in fact prior to the colonializations by
 several seafaring European countries, which took European languages to
 many other parts of the world.

1	(3)	<i>North</i>	<i>West</i>	<i>East</i>	<i>South</i>
2		Germanic	Celtic	Indo-Iranian	Greek
3		Balto-Slavic	Italic		Armenian
4		Albanian	Tocharian		Phrygian
5					
6					

7 Lockwood (1972) groups Phrygian, Armenian and Thracian as a sub-
8 group of IE. However, the matter of subgrouping within IE is very
9 controversial and there is no generally accepted hypothesis; see Ringe
10 et al. (2005). Another subclassification is that between the so-called
11 satem and centum languages, the former group containing Indo-Iranian,
12 Balto-Slavic, Armenian, Albanian and some of mentioned ill-documented
13 extinct languages.

14 PIE, dating from 5000 BCE (in an area east of the Black Sea) has been
15 grouped into larger superfamilies such as Eurasiatic and Nostratic, but in
16 this chapter I will not be concerned with these tentative groupings (see
17 Comrie et al. 2003: 38).

18 Watkins (1998: 50 ff.) ascribes to PIE a pitch accent system with a high
19 tone realizing the accented position (which, in Vedic, corresponds to the
20 udātta -raised pitch- and in Greek to the acute accent). The position
21 of this accent was dependent on word formation and inflection, and its
22 presence or absence in certain grammatical categories is, furthermore,
23 claimed to be dependent on syntactic rules. The verb would be unaccented
24 or weakly accented in main clauses, but accented in subordinate clauses.
25 In some inflectional paradigms we find a fixed accent on the stem or end-
26 ing, in other paradigms the accent is 'moveable'. In word formation, some
27 affixes have inherent accent, others are unaccented such that (default)
28 accent would be on the root.

29 The PIE accent system was retained in some of the daughter languages,
30 usually with changes. In Greek, for example, accent was restricted to a
31 right-edge three syllable window, being sensitive to moraic structure. In
32 other daughter languages, the pitch-accent was replaced by a stress-accent,
33 often on the initial syllable, as in Germanic, early Italic and Celtic.

34 Kiparsky and Halle (1977) offer an analysis of PIE accent in which
35 morphemes carry inherent accents, lexically marked, or are unaccented.
36 In a word with multiple accents (present in different morphemes) the *first*
37 accent would acquire status of primary accent. In words that end up being
38 composed of unaccented morphemes, the initial syllable would receive a
39 (default) accent. Kiparsky and Halle call this rule, the basic accentuation
40 principle (BAP). In this analysis, then, PIE is a so-called FIRST/FIRST

system just like, for example, Modern Russian (see section 4.1.4.). Clearly, if there was a default initial accent, this is the most likely source of the fixed initial accents in several of the daughters of PIE.

4.1.1. Celtic (< Indo-European)

Genetic information

CELTIC

CONTINENTAL: †*Gaulish*, †*Lepontic*, †*Hispano-Celtic (Celtiberian)*⁷

INSULAR:

GOIDELIC (Q-Celtic): *Irish*, *Scottish Gaelic*, *Manx* (†1974)

BRYTHONIC (P-Celtic): *Breton*, *Welsh*, *Cornish* (†18th century)

Although Cornish has been extinct since before 1800 as a first language it is currently being revived for cultural purposes. Manx is no longer a first language either, but is still spoken as a second language by a small group of people and used for some public functions.

The Celts were the first IE people to spread widely as of the 5th century BCE from the Iberian Peninsula to the Balkans, into Asia Minor and the British Isles. In Europe, Celtic languages went extinct before 500 AD. Breton (in France) is not a survival of an old continental Celtic language, but was imported back to Europe between 5th and 7th century. The earliest record is found in inscriptions in a language called *Lepontic*, dating from at least the 6th century BCE. An Italo-Celtic grouping (West IE, cf. 3 above) has been proposed but is now considered outdated.

Ball and Fife (1993), Aitken and McArthur (1979), Price (2000), MacAulay (1992) and Lockwood (1975) all contain surveys of Celtic languages.

StressTyp extracts

GOIDELIC:

Gaelic, Irish [I]

- Primary stress falls on the first syllable.
- Secondary stress often on non-initial long vowels.⁸

'bach₁log 'bud' 'uachta₁ra:n 'president'

7. Gaulish/Lepontic are P-Celtic and Hispano-Celtic is Q-Celtic.

8. According to Antony Green (p.c.) secondary stress only occurs in compounds.

Gaelic, Munster (dialect of Gaelic, Irish) [F/F]

- Stress falls on the first long vowel, else on the first.⁹
- Stress may shift to *-(e)acht*, when preceded by a syllable with a short vowel.

bean'nacht 'blessing' cai'li:ni: 'girls'

Gaelic, Scottish [I]

- Primary stress falls on the first syllable.
- Location of secondary stress unclear.

'dʒeʃaləxəy 'preparing' 'ahəɾəxiən 'changes'

'kələntə 'complete, fulfilled'

Manx [I]

- Stress falls on the first syllable.¹⁰

'began 'a little' 'pu:sə 'wedding'

BRYTHONIC:

Breton [P]

- Word stress falls on the penultimate syllable.

'peskət 'fish pl.' ki'derəs 'butcherswife' peske'terəs 'fishing'

Welsh; Cymraeg; Cymric [P]

- Stress falls on the penultimate syllable.

kə'muinas 'pleasure' kəv'leis 'convenient'

9. According to Antony Green (p.c.) this should be:

Gaelic, Munster (dialect of Gaelic, Irish) [F/F]

- Stress falls on the second syllable if it contains a long vowel/diphthong.
- Stress falls on the third syllable if it contains a long vowel/diphthong and the first two syllables contain a short vowel.
- Stress shifts to *-(e)ach(t)(-)* in the second syllable, when preceded by a syllable with a short vowel; if a third syllable is present it must also have a short vowel (if it has a long vowel, stress is there).
- Otherwise, stress is on the first syllable.

10. According to Antony Green (p.c.) Manx has accent on the second syllable if it contains a long vowel, otherwise on the first.

Cornish [P]

- Stress falls on the penultimate syllable.
- Secondary stress on the fourth and sixth from the end (no examples).

'estren 'foreigner es'trenyon 'foreigners 'arluð 'lord'

Additional information

Eska (2004: 865) says that not much is known about accent in the Continental Celtic languages. Hispano-Celtic (Q-Celtic) may have had accent toward the beginning of the word. For Gaulish (P-Celtic) it has been suggested that an earlier penultimate accent changed into an antepenultimate accent. The early presence of initial and penultimate accent perhaps reflects the occurrence of these patterns in the Goidelic (Q-Celtic) and the Brythonic (P-Celtic) subfamilies, respectively. Green (1997) provides a discussion and analysis of the prosodic structure of Irish, Scottish Gaelic and Manx.

Starting with the Goidelic group, Ó Dochartaigh (1992: 32–33) reports that Old Irish had a strong initial accent which triggered reduction of long vowels in unaccented syllables. Then long vowels were reintroduced due to borrowing and language internal processes. West Connacht Irish preserves the system that developed in Old Irish, i.e. the initial accent but also a presence of long vowels in unaccented syllables. In Munster Irish and East Connacht the long vowels seem to have attracted the accents which lead to reduction of the original initial syllable:

- (4) Munster Irish: brədá:n 'salmon'
 East Connacht: brudá:n 'salmon'

In Doherty (1991) we find a presentation and analysis of stress in Munster Irish. Rowicka (1994) presents an analysis of Munster Irish within Optimality Theory and shows that this system can best be described using trimoraic feet. Gussmann (1994) is an exhaustive account of the accent facts of Munster Irish in a metrical framework. In these analyses, Munster Irish appears to be *weight-sensitive* in that words in which the second syllable contains a long vowel have accent on that long second syllable independent of the length of the initial syllable. In trisyllabic words with a short vowel in the first and second syllable and a long vowel in the third syllable primary accent falls on the third syllable, with secondary accent on the first syllable. Manx resembles this kind of system in that it also

shows signs of weight-sensitivity. Thomson (1992: 131) says that Manx long non-initial vowels attract the accent, adding that non-initial accent may also be the result of unstressed proclitics. The Ulster dialect shows a different development. Here the accent remained initial and the long unaccented vowels are reduced.

MacAulay (1992: 234–236) reports that in some dialects of Scottish Gaelic (where accent is usually initial) there is a lexical pitch contrast in long accented syllables (not in short ones) between level pitch and falling pitch. Long monosyllables have a level tone, whereas disyllables have a falling tone over the two syllables:

- | | | | | |
|-----|-------|---------|-----------|---------|
| (5) | màl | ‘rent’ | [ma:l] | level |
| | mall | ‘slow’ | [maul] | |
| | | | or [maL:] | level |
| | mala | ‘brow’ | [malə] | falling |
| | maile | ‘delay’ | [maLə] | falling |

A contrast can arise when disyllabic CV-VC words become monosyllabic because the vowels across the hiatus contract into a long nucleus, while maintaining their falling contour which then contrasts with a level tone in a lexical (i.e. original) CVVC word:

- | | | | | |
|-----|--------|---------|--------|---------|
| (6) | duan | ‘ditty’ | [tuan] | level |
| | dubhan | ‘took’ | [tuan] | falling |

A contrast may also arise as a result of vowel epenthesis. Some word final clusters are broken up by a copy of the vowel that precedes the cluster. Such words maintain their original level tone and can now contrast with homophonous original bisyllables:

- | | | | | |
|-----|------|--------|--------|---------|
| (7) | ainm | ‘name’ | [anam] | level |
| | anam | ‘soul’ | [anam] | falling |

Effectively, then, these dialects have a pitch accent system.

Turning to the Brythonic group, Ternes (1992: 436–437) reports that in Breton accent is on the penultimate syllable, but some words have final accent. Judging from the examples that he gives, this concerns words that have a superheavy final CVVC(C). Modern Breton is divided into four major dialects, three of which have the penultimate accent pattern. The fourth dialect, Gwenedeg, mainly has final accent, which can be traced back to the period of transition from Old Breton to Middle Breton (around AD 1000), when the overall shift from final to penultimate accent failed to take place in this dialect.

1 Thomas (1992a: 331–332) reports a similar pattern for Welsh: accent
 2 falls on the penultimate syllable, but in some cases, again where the final
 3 syllable is CVVC, accent is final. There is a strong secondary stress on
 4 the first syllable if separated from the primary accent by at least one
 5 syllable. A remarkable feature of Welsh is that the final unstressed syllable
 6 has a high inherent pitch (cf. Williams 1999); see below.

7 As for the final CVVC syllables, these were originally two syllables in
 8 hiatus (CV.VC) with normal penultimate stress, and then the two vowels
 9 merged into a diphthong. There are also examples of unaccented word-
 10 final CVVC syllables where the VV has always been a diphthong (i.e. it
 11 didn't result from merging two hiatus vowels).

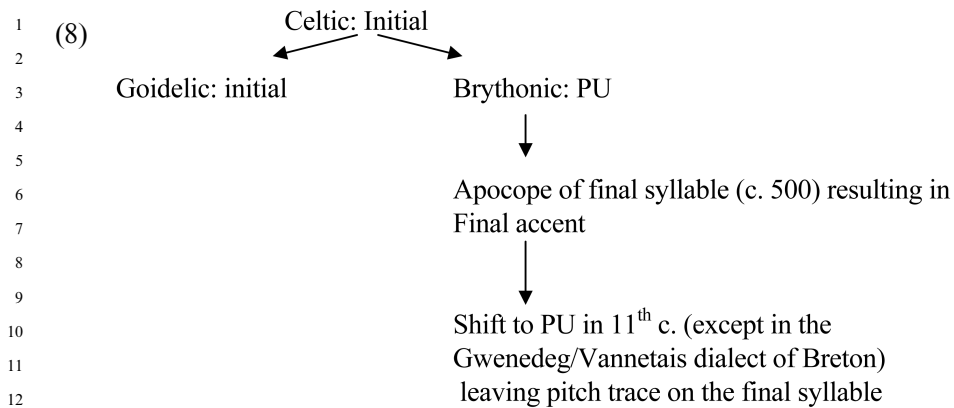
12 Cornish also has penultimate accent in StressTyp. There is, however,
 13 very little evidence as to the accent-pattern of traditional Cornish (i.e. the
 14 original as opposed to the revived language), but it would seem that, like
 15 in Welsh and most dialects of Breton, primary accent fell on the penulti-
 16 mate syllable and, as stated in Thomas (1992b: 367) secondary accent on
 17 alternate syllables preceding the primary accent. Since final vowels do not
 18 reduce, the presence of a high pitch, as in Welsh, is said to be likely.

19 *Generalizations*

21 Almost all Celtic languages have a weight-insensitive system, except for
 22 the Irish dialects discussed above that have a weight-sensitive system with
 23 a limited unbounded flavour. The major difference between the Goidelic
 24 group and the Brythonic group is the location of accent, initial in the
 25 former and penultimate in the latter. The initial pattern (also assumed
 26 for Hispano-Celtic) is commonly assumed to be the oldest (cf. Schrijver
 27 1995), perhaps going back to the initial default location in Proto-Celtic.
 28 Brythonic Celtic then underwent a shift to the penultimate syllable¹¹
 29 which as a result of apocope in proto-Brythonic became the final syllable
 30 (preserved in the Gwenedeg dialect of Breton). At a subsequent date the
 31 accent shifted to the (new) penultimate syllable (i.e. the original antepenul-
 32 timate), thus restoring the older state of affairs, but leaving a 'trace', i.e. a
 33 perceptually quite salient pitch characteristic, on the final syllable.¹² The
 34 final high pitch does not appear to be an intonational tone.

38 11. An alternation between initial and penultimate accent within a family is not
 39 uncommon. We also see it in the West-slavic languages with either initial
 40 (Czech) or penultimate (Polish) accent.

12. Peter Schrijver supplied us with useful information on Celtic.



Pitch features in Celtic accent

A special feature of Welsh, briefly mentioned above, is that the final syllable, rather than the accented penultimate syllable, has the most prominent pitch-movement. The final syllable has a tendency to occur with rising pitch and is pronounced with much greater force than in English (see Williams 1999). (This high pitch on a final unstressed syllable has carried over into the Welsh accent of English too.) In relation to pitch, another remarkable point, also mentioned earlier, is the presence of a pitch accent system in certain Scottish Gaelic dialects.

4.1.2. Germanic (< Indo-European)

Genetic information

GERMANIC

†EAST: *Gothic* (4th c.), *Vandalic*, *Burgundian*

NORTH:

†*Runic*, *Old Norse*

WEST: *Icelandic*, *Faroese*, *Nynorsk*

EAST: *Swedish*, *Danish*, *Jutish*, *Norwegian*

WEST:

CONTINENTAL:

EAST: (*High-*) *German*, *Luxembourgeois*, *Yiddish*

WEST: *Netherlandic-German* (or *Low German*):

Dutch (incl. *Flemish dialect*), *Afrikaans*

NORTH SEA (Anglo-Frisian): *English*, *Frisian*

1 Germanic tribes, living in Northern Europe during 1st millennium first
 2 moved to northern Germany and southern Scandinavia and from there
 3 migrated all over Europe. Runic inscriptions go as far back as the 3rd
 4 century BCE, but the oldest form of a complete Germanic language
 5 known in some detail is Gothic preserved from a 4th century translation
 6 (around 350 AD) of the New Testament by bishop Wulfila. North of the
 7 Black Sea a later development of this language, Crimean Gothic, went
 8 extinct in the 18th century, leaving a few records from the 16th century.
 9 Other older forms of Germanic languages are Anglo-Saxon and Old
 10 High German with texts from the 8th century. Yiddish is the language of
 11 the Jews in Central and East Europe; it has undergone Slavic influence.
 12 The vocabulary of English is heavily influenced by Norman French after
 13 the Norman Conquest in the 11th century and also, like most other
 14 modern languages, contains many Latin and Greek words. Afrikaans is
 15 spoken in South Africa; it derives from Dutch dialect of 17th century
 16 settlers. Icelandic and Faroese are the most conservative modern Ger-
 17 manic languages and still close to Old Norse from the 12th century.

18 An early phase of what is called Common Germanic may still have had
 19 the PIE pitch accent (suggested among other things by the evidence from
 20 Verner's law), which then changed into a stress-accent system. The old
 21 Germanic initial accent location (probably going back to the PIE default
 22 initial accent location) is preserved in Gothic. Initial accent is also likely
 23 in the earliest phase of *all* Germanic languages (the best evidence being
 24 available for Old English). The modern Germanic languages, except for
 25 Icelandic and Faroese, no longer have dominant initial primary accent,
 26 as their older ancestor, Common Germanic, did (cf. Lahiri et al. 1999).
 27 The modern Germanic languages that no longer have the dominant initial
 28 pattern do *not* have "unpredictable" or "free (or lexical) accent", as is
 29 often remarked, however. Rather the dominant pattern is neither initial,
 30 nor free, but one of right-edge accent. The exact location is dependent on
 31 syllable weight, morphological structure and lexical marking, but primary
 32 accent in underived words always falls within the so called three-syllable
 33 window. While English underwent especially strong influence from French
 34 vocabulary, *all* modern Germanic languages have large amounts of so-
 35 called 'Romance' vocabulary (words that have been borrowed from Latin
 36 and French). The right-edge accent location is particularly noticeable in
 37 this stratum and no doubt imported as part and parcel of the Romance
 38 loan words. Words that go back to Germanic roots usually have initial
 39 accent, but since non-initial vowels have been lost or reduced to schwa,
 40

even these words can be incorporated into the right-edge analysis, which, for example in Dutch (cf. van der Hulst 1984a, Kager 1989) proves its ‘reality’ by covering the entire vocabulary (Germanic, Romance and loans from other languages).

Norwegian and Swedish also fit into this characterization, but are, in addition, tonal (having one lexical tone). Tonal dialects of a similar kind are also found in an area commonly called “Central Franconian” that comprises parts of German, Luxembourg and The Netherlands.

NORTH-WEST GERMANIC

StressTyp extracts

Icelandic [I]

- Primary stress falls on the first syllable.
- Secondary stress falls on alternate syllables to the right.

'taka 'to take' 'alma₁nak 'calendar' 'bio₁grafi₂a 'biography'

Faroese [I]

- Primary stress falls on the first syllable.
- Secondary stress on rhythmic basis.

'tomur 'empty' 'hestarnir 'the horses' 'seyða₁fylgi 'flock of sheep'

Additional information

As mentioned, the oldest well-attested Germanic language, Gothic, had accent on the first syllable of the ‘stem’ or ‘root’ (thus not on prefixes) (Jasanoff 2004). The same system is attributed to Ancient Norse (Faarlund 2004).

Árnason (1999) presents an analysis of the realisation and location of word accent in Icelandic. The Faroese system is described in comparison with Icelandic. Unlike the other Germanic languages, the accent systems of these two languages are completely quantity insensitive and initial. Thus, as in Celtic, we find a split in Germanic between a strict initial pattern and a final pattern.

Both Icelandic and Faroese are said to have a ‘left strong’ compound accent rule but a ‘right strong’ phrasal accent rule. This seems identical to what we find in the other Germanic languages.

1 NORTH-EAST GERMANIC

2 *StressTyp extracts*

3 4 **Norwegian [U-P/A]**

- 5 • Primary stress is final if the vowel is long or there are two closing
- 6 consonants.
- 7 • In other cases, stress the penult if it is closed by a consonant or the
- 8 vowel is long.
- 9 • Else stress is antepenultimate.
- 10 • Secondary stress falls on alternate syllables to the left (many
- 11 exceptions).

12
13 maka'ro:ni 'macaroni' 'pasta 'pasta'
14 'leksikon 'lexicon' a'gurk 'pickle'
15

16 17 **Swedish [U%A]**

- 18 • Stress falls on the final syllable if it is closed or contains a long vowel.
- 19 • Stress falls on the penultimate syllable if it is heavy and the final
- 20 is not.
- 21 • If both the final and the penult are light, stress is antepenultimate.

22 tek'nik 'technique' bu'fe: 'buffet' ron'del: 'roundabout'
23
24 in'ferno 'inferno' 'vi:de.o 'video'
25

26 27 **Danish [L/P]**

- 28 • Primary stress falls on the last long vowel.
- 29 • If there are none, stress falls on final closed syllables, else on the
- 30 penultimate.

31 vio'lin 'violin' pe'trø:leum 'paraffin' [ˈ is stød]
32 'foto 'fotograph' kom'plot 'conspiracy'
33
34

35 *Additional information*

36
37 The analyses of Swedish and Norwegian assume that all quantitative
38 information is available, i.e. long vowels and long consonants, before
39 stress is placed. If one builds this condition into the data (by filling out
40

1 long vowels and consonants in the underlying forms) then there hardly is a
 2 need for an algorithm since the heavy syllables practically mark the loca-
 3 tion of stress. Kristoffersen (2000), on the other hand, assumes that seg-
 4 ment quantity is mostly predicted by stress placement, but the actual
 5 lengthening segment is diacritically specified. What he proposed for
 6 Norwegian is likely to hold for Swedish as well.

7 Rice (1999) compares a number of Norwegian words with different
 8 syllable patterns to their Dutch counterparts. This comparison between
 9 Dutch and Norwegian shows that the accent systems of the two languages
 10 are strikingly similar. The only systematic differences occur in words that
 11 have final geminate consonants in Norwegian. Final syllables that are
 12 closed by a geminate consonant pattern with final syllables closed by a
 13 consonant cluster, i.e. they are superheavy. Dutch does not have final
 14 geminate consonants and the final syllables of the equivalent Dutch words
 15 are therefore not superheavy. The accent pattern in Dutch causes these
 16 words to have either penultimate or antepenultimate accent (depending
 17 on the weight of the penultimate syllable), whereas the Norwegian
 18 equivalents with their superheavy final syllables have final accent,
 19 e.g. Dutch *álmanak* vs. Norwegian *almanákk* 'almanac'. This contrast
 20 reflects a difference in the phonotactics of Norwegian and Dutch rather
 21 than a difference in the accent system, however. In fact, the accent sys-
 22 tems of underived words in Dutch and Norwegian seem to be exactly
 23 the same.

24 For Swedish word prosody, attention has usually been directed at the
 25 tonal opposition that occurs in this language. However, word accent occu-
 26 pies a key position in Swedish word prosody especially in serving as an
 27 anchor point for the word tones. Bruce (1999) shows that, like Dutch
 28 and German, Swedish accent is quantity sensitive and is subject to the
 29 same kinds of regularities. Bruce also mentions Danish as having a very
 30 similar system, and, as we have seen above, one may add Norwegian to
 31 this list.¹³

36 13. In all these cases the relevant generalizations apply to the underived vocabu-
 37 lary and the so-called 'romance vocabulary'; cf. Rischel 1972, 1982 for a
 38 discussion that focuses on derived and compounded words in Danish.
 39
 40

1 WEST GERMANIC

2 *StressTyp extracts*3 **German [U-P/A]**4 *Approximation:*

- 5 • Primary stress is final if the vowel is long or there are two closing
- 6 consonants.
- 7 • In other cases, stress falls on the penult if it is closed by a consonant.
- 8 • Else stress is antepenultimate.
- 9 • Secondary stress falls on alternate syllables to the left (many
- 10 exceptions).

11 hi'biskus 'hibiscus a'larm 'alarm'

12 'anorak 'anorak 'alibi 'alibi'

16 **Dutch [U-P/P;A]**

- 17 • Primary stress falls on the final syllable if it has three segments in the
- 18 rhyme.
- 19 • Otherwise stress falls on the penult if the final syllable is open.
- 20 • When it is closed, stress is penultimate if also closed, otherwise
- 21 antepenultimate.
- 22 • Secondary stress falls on alternate syllables to the left (with many
- 23 exceptions).

24 'tempo' 'pace' 'alfa,bet 'alphabet'

25 e'lektron 'electron' ,pa'ra'si't 'parasite'

29 **English [(U-)P/A]**30 *Approximation:*

- 31 • Primary stress falls on the final syllable in nouns if the vowel is long,
- 32 in verbs if the vowel is long or there are two closing consonants.
- 33 • In other cases, stress falls on the penult if it contains a long vowel or
- 34 coda.
- 35 • Else stress is antepenultimate.
- 36 • Secondary stress falls on alternate syllables to the left (many excep-
- 37 tions).

1 o'bey a'genda mo'lest 'discipline as'tonish mon'soon
 2 tre'mendous 'innocent ho'rizon 'croco,dile 'ali,bi 'cinnamon
 3
 4

5 **Old English [I]**

- 6 • Primary stress falls on the first syllable (of the root/stem).
 7 • Secondary stress reported on alternate syllables to the right respecting
 8 weight.

9 'mōdgidanc 'thought' 'æθeling 'prince'
 10
 11

12 ***Additional information***

13
 14 Jessen (1999) concludes that, even though the “Dutch” accent rule is
 15 not fully matched in German, they are very similar nonetheless (cf. Fery
 16 1998). In fact, the German accent system appears to be more closely
 17 related to the Dutch system than to the English system. The following
 18 characterization seems to apply to both German and Dutch:

- 19 a. Accent is final if the final syllable is superheavy (VVC, VCC)
 20 b. If the final syllable is open accent is penultimate
 21 c. If the final syllable is closed (but not superheavy) and the penultimate
 22 syllable is open, accent is on the antepenultimate syllable (♂ CV CVC)
 23

24 Although there are considerable similarities between the Dutch/German
 25 and the English accent systems, the English system is different in a number
 26 of respects. Like Dutch/German, English has a quantity sensitive right
 27 edge system. The most basic differences between English and Dutch/
 28 German lie in the nature of the *extrametricality* rule and the way in which
 29 quantity is computed. Unlike English, German/Dutch treats all open
 30 syllables as light, and only closed syllables as heavy. Vowel length corre-
 31 lates with syllable closure in that open syllables always contain long
 32 (or tense) vowels, whereas short (or lax) vowels can only occur in closed
 33 syllables (Vennemann 1990; Wiese 2000). Closed syllables with long
 34 vowels (so called superheavy syllables) occur, but almost only in word
 35 final position. Whereas in English all final syllables are extrametrical, in
 36 German/Dutch only final VC (which will form a *monosyllabic* foot
 37 because it is heavy) is extrametrical (cf. van der Hulst 1984, Kager 1989,
 38 Zonneveld and Trommelen 1999).
 39
 40

In derived words, German/Dutch, like English, distinguishes between Class I and Class II affixes. In compounds accent falls on the rightmost member if it is an adjective (unless the 'rhythm rule' applies) or a preposition and on the leftmost member if the rightmost member is a noun or a verb.¹⁴ An interesting phenomenon of English, Dutch and German, which occurs in other Germanic languages as well, is the adjectival accent-shift, due to the so called Rhythm Rule. This phenomenon is treated in depth in Visch (1999).

Word tone in Germanic languages

Word-tones (or tonal accents, phonetically manifested as a high or low pitch¹⁵) occur in addition to accent in most dialects of Norwegian and Swedish.¹⁶ In Danish another phonetic property, generally referred to as *stød*, related to intensity, subglottal pressure and constriction of the vocal folds, occurs on accented syllables. Both Swedish and Norwegian distinguish two different tonal accents, mostly called Word Tone I and Word Tone II. Historical reconstruction of the origin of these word tones indicates that they derive from an original difference between monosyllabic and polysyllabic words. When, through a number of morphological and phonological processes, many originally monosyllabic words became polysyllabic the two tones came to stand in phonological opposition.¹⁷ An alternative theory is that accent 2 stems from the context of two stresses (disyllabicity following trivially from this). The chief argument is laid out

14. In English stress in nominal compounds goes to the right-hand member if this is itself a compound.

15. Central Swedish has a H lexical tone in accent 2, whereas South Swedish has a L lexical tone. Similarly, East Norwegian, North Norwegian and Göta dialects have a H lexical tone, whereas West Norwegian (Bergen), South Norwegian and Dala have a L lexical tone.

16. I preserve the term 'accent' for the abstract culminative property that Swedish shares with the other Germanic languages, using the term 'word tone' for the word-level pitch opposition. In a different terminological tradition Bruce uses the terms 'stress' and 'tonal accent', respectively.

17. We also refer to Lahiri et al. (1999) for a discussion of the historical background of the tonal opposition.

1 in Riad (1998). Bruce (1999) presents some general regularities by which
 2 the choice of the tone class in Swedish and Norwegian can, at least partly,
 3 be synchronically predicted. He shows that in simplex (non-compound)
 4 words the main factors determining the choice of word tone are primary
 5 accent location and the morphological make-up of a word. In com-
 6 pounds the factors determining the choice of word tone varies in different
 7 dialects.

8 Danish stød seems to be historically related to Word Tone I, the equi-
 9 valent to Word Tone II simply being the absence of stød, but this correla-
 10 tion is not perfect. Stød may occur on the primary accented syllable of
 11 simplex words and in compounds on the accented syllable of the com-
 12 pound members. The presence or absence of stød conditions seems to be
 13 determined by the weight of the accented syllable. In fact, both tone
 14 (in Norwegian and Swedish) and stød (in Danish) occur only in heavy
 15 syllables. But for Danish stød to be realized, the sonority of the stressed
 16 syllable has to be high. (This in itself is a strong indication that we are
 17 dealing with a tonal configuration here, not a separate phonological entity
 18 ‘stød’).

19 Like Swedish and Norwegian, most Limburgian and Rhenish dialects
 20 (situated in the south-east of the Netherlands and the southern part
 21 of Germany) have a contrast between two word-level tones. These are
 22 usually referred to as ‘falling tone’ (Dutch: stoottoon) and ‘dragging
 23 tone’ (Dutch: sleeptoon). Hermans (1999) discusses the Limburgian dia-
 24 lect which is spoken in and around Maasbracht, a small village near
 25 Roermond in the Netherlands. In this dialect, the falling tone starts on a
 26 relatively high pitch and makes a rather steep fall to a relatively low pitch.
 27 The dragging tone is realised at a level high pitch when followed by
 28 another syllable in the utterance, but as a fall-rise in utterance-final posi-
 29 tion. The dragging tone is accompanied by significant lengthening of the
 30 syllable. There are quite a number of monosyllabic words which differ
 31 only at the tonal level, but it is hard to find minimal pairs among poly-
 32 syllabic words, although near minimal pairs are found. Hence, the distri-
 33 bution of tone is not (fully) predictable in monosyllabic or in polysyllabic
 34 words. Still, there are a number of environments in which the choice of
 35 tone is predictable.

36 Hermans (1999) sums up the relevant environments and presents an
 37 analysis that accounts for the predictability of tone in these environments.
 38 Two of the main restrictions on the distribution of tone are related to
 39
 40

1 primary accent: tone contrast is only possible on the syllable that bears
 2 primary accent, and only dragging tone occurs when the primary accented
 3 syllable is followed by another (secondary) accented syllable in the same
 4 word. Other restrictions concern the number of sonorant segments in
 5 the nucleus of the syllable, the voicing of the elements in the coda of the
 6 accented syllable, and the status of the vowel. In Hermans' analysis,
 7 the falling tone is lexically marked by the presence of a L tone, whereas
 8 the dragging tone is lexically unmarked. I also refer to Gussenhoven
 9 (2004) for extensive discussion and analysis of Limburgian tone.

11 *Generalizations*

13 As in the case of Celtic, the Germanic languages must be subdivided into
 14 two groups with respect to accent: an initial and a final group. The first
 15 group consists of Icelandic and Faroese which have retained the old Ger-
 16 manic system of initial weight-insensitive accent. In all other Germanic
 17 languages, a synchronic analysis leads to postulating a right edge, quantity-
 18 sensitive system with, for most morphologically complex words, depen-
 19 dence on morphology. Within this group, English occupies a special
 20 position, differing from the other members in several ways. Firstly,
 21 although all Germanic languages allow antepenultimate accent (which is
 22 regular in case words end in VV-VC, and irregular otherwise), antepenul-
 23 timate accent is more widely present in English, due to rules of 'extrame-
 24 tricality' that can be said to be a systematic part of the system, at least
 25 in the nominal system (see Zonneveld and Trommelen 1999). A second
 26 difference involves the definition of syllable weight. In English closed
 27 syllables *and* syllables with long vowels count as heavy, whereas in at
 28 German and Dutch only syllable closure appears to perform this role.
 29 The latter difference may be dependent on the phonological character of
 30 tense vowels in the various languages. It has been argued, for example
 31 for Dutch (van der Hulst 1984b, van Oostendorp 1995) and German
 32 (Vennemann 1990) that tense vowels are not long. If this route is taken,
 33 the difference between the systems of the Germanic languages (except
 34 Icelandic and Faroese) are thus very slight (involving extrametricality,
 35 the status of tense vowels and the possibility of final geminates).

36 Lahiri et al. (1999) offer an historical perspective on the accentual sys-
 37 tems of the modern Germanic languages, taking the (root) initial primary
 38 accent of Proto-Germanic as a point of departure.

4.1.3. Baltic (< Indo-European)

Genetic information

BALTO-SLAVIC

BALTIC:

WEST: †*Old Prussian* (in 18th century)

EAST: ***Latvian*** (also *Lettish*), ***Lithuanian***

SLAVIC (see section 4.1.4.)

Baltic and Slavic are commonly grouped into one superfamily. In this section I will first discuss the Baltic subgroup which is generally considered to be the more conservative subgroup. The oldest information regards Old Prussian with records from 1300 AD to the time it went extinct (in the 18th century). Little is known about its word prosodic system, however. Latvian and Lithuanian are among all the IE languages, the most conservative, i.e. the closest to PIE.

StressTyp extracts

Latvian [I]

- Stress falls on the first syllable.

'bagātība 'wealth' 'krāsa 'colour, paint, dye'

'kokvilna 'cotton' 'mākslinieks 'artist'

Lithuanian [F/F]

- Stress falls on the first syllable marked for accent, else on the first.
- Secondary stress falls on the second syllable after the tone.

'kiškis 'rabbit' 'giria 'praises' gi'ria 'forest'

va'dōvas 'leader' 'mokytojas 'teacher'

Additional information and Generalizations

According to Dogil (1999b) the Latvian word prosodic system establishes a link between the West Slavic languages on the one hand, and the South and East Slavic languages (excluding Macedonian) and Lithuanian on the other hand. Latvian has strictly initial accent, like most of the West Slavic languages. Unlike, the West Slavic languages, however, it does not appear to have alternating secondary accent. The link with Lithuanian and most of the South and East Slavic languages can be found in the rural southern dialects of Latvian. These dialects show some of the accentual differences that are characteristic of Lithuanian, i.e. they have lexical accents.

Lithuanian has a system in which primary accent is, as in (according to most analyses) Russian, dependent on lexical accents. Roots, suffixes and inflectional endings may be accented or unaccented. Primary accent occurs on the first *accented* syllable of a word, and if the word is completely unaccented, on the first syllable. It thus qualifies as a FIRST/FIRST system, like Russian and indeed like PIE. The special feature of the prosodic system of Lithuanian is that primary accent occurs with three different phonetic exponents. Bimoraic syllables may have either a so-called “acute” accent or a “circumflex” accent. The choice between these two exponents is again a matter of lexical marking. Monomoraic syllables have a “grave” accent, which is phonetically very much like the circumflex accent, but shorter. According to Dogil these phonetic exponents do not, as often has been proposed, primarily involve pitch, since this is not the main distinctive mark of increased prominence in Lithuanian (cf. also Dogil and Williams 1999). Although the type of exponent does not play a role in the basic principle which governs accent-assignment, the position of accent is influenced by the exponent-type. This is the result of an accent advancement rule, called *Saussure’s Law*, which causes a rightward shift of the accent when circumflex or grave, but not in case of acute accent, in certain situations. Dogil finds that in every situation the circumflex and the grave accent indeed behave as a natural class. He therefore proposes an analysis of the Lithuanian system in which the acute accent has a different underlying representation than the grave and the circumflex accent. See Halle and Vergnaud (1987: 190–199) and Blevins (1993) for analyses of the Lithuanian system.

4.1.4. Slavic (Slavonic) (< Indo-European)

Genetic information

SLAVIC

EAST:

NORTH: *Russian, Byelorussian*

SOUTH: *Ukrainian*

WEST:

NORTH: *Polish, Kashubian, †Polabian*

CENTRAL: *Upper Sorbian, Lower Sorbian*

SOUTH: *Czech, Slovak*

SOUTH:

Old Church Slavonic

WEST: *Slovene, Serbian, Croatian*

EAST: *Bulgarian, Macedonian*

1 Commenting on Balto-Slavic accent, Beekes (1995: 150–153) notes that
 2 the reconstruction of Proto-Slavic accent is extremely unclear; cf. Kortland
 3 (1978, 1979). Anderson (1998: 428, 433) ascribes to Proto-Slavic a ‘free
 4 and mobile’ accent, inherited from PIE, including the distinction between
 5 accented (*orthotonic*) and unaccented (*enclitomena*) words. (This account
 6 is not incompatible with the BAP (Basic Accentuation Principle) proposed
 7 by Kiparsky and Halle (1977) for PIE, but stresses the unpredictable pres-
 8 ence of accent in morphemes, rather than the choice of the first accent as
 9 primary, or, if no accent is present, the choice of the first syllable, by
 10 default.) Due to pre-Slavic developments involving (loss of) laryngeal dis-
 11 tinctions, Proto-Slavic also had an opposition between an acute (high-
 12 toned) and circumflex tone. This distinction was then lost in unaccented
 13 syllables. In Proto-Slavic we end up with a tonal distinction in accented
 14 syllables: acute (high followed by low) and neo-acute (high followed by
 15 high). The various Slavic languages either change or inherit a system of
 16 this kind. In Russian, pitch distinctions (and vowel length) are lost, but
 17 the accent location is essentially preserved. In Czech, the default initial
 18 accent location prevails. In Serbo-Croatian the difference between the
 19 two accents is reinterpreted as a difference in quantity. Some further
 20 remarks on a reconstruction of the proto-Balto-Slavic accentual system
 21 are made at the end of this section.

22 Comrie and Crobett (1993) and Comrie (1981) contain overviews of
 23 Slavic languages. General sources on Slavic accentuation are Stankiewicz
 24 (1993) and Garde (1976); cf. Kortland (1978, 1979).

25 EAST-SLAVIC

26 *StressTyp extracts*

27 **Russian [F/F LEX]**

- 28 • Stress falls on the first syllable lexically marked for accent, else on
 29 the first.

30 ras¹prava ‘reprisal [nom.sg]’ zje¹ny ‘woman [gen.sing]’
 31

32 *Additional information*

33 In most analyses, Russian accent is analyzed as being dependent on lexical
 34 accents that morphemes may have or cause to be placed or deleted in
 35 neighbouring morphemes. Given the lexical accents, word accent is located
 36 on the leftmost accented syllable or on the first syllable if there are no
 37 accents. Thus, in this analysis Russian is a FIRST/FIRST system. Ukra-
 38 nian appears to have the same kind of accent system.
 39
 40

1 WEST-SLAVIC

2 *StressTyp extracts*3 **Polish [P]**

- 4 • Primary stress falls on the penultimate syllable.
- 5 • Secondary stress on alternate syllables counted from the left (not on
- 6 the antepenult).

7 'rozpraw 'discussion [gen.pl] re'porter 'reporter'
 8 'saksofo'nista 'saxophone player 'revo'lucjo'nista 'revolutionary'

11 **Slovincian (dialect of Kashubian) [L/F]**

- 12 • Stress falls on the last syllable with a long vowel or lexical accent mark.
- 13 • If there are no such vowels, stress is initial.

14 'kokoʃ 'chicken je'zo:rka 'lake dim.pl.' svji:'ni: 'pig gen.sg.'

16 **Polabian [U/P]**

- 17 • Stress falls on the final syllable if it contains a long vowel, else on the
- 18 penult.

19 **Sorbian [I]**

- 20 • Primary stress falls on the initial syllable.
- 21 • Secondary stress falls on the penultimate syllable of four syllable or
- 22 longer words.

23 'wojścojska 'countryside 'domo,wina 'nation'
 24 'pódrożnij,kojstwo 'going for a journey'

27 **Czech [I]**

- 28 • Primary stress falls on the first syllable.
- 29 • Secondary stress falls on alternate syllables thereafter.

30 'name,sti '[city] square 'nadra,zi 'station 'kniha 'book'

32 **Slovak [I]**

- 33 • Primary stress falls on the first syllable.
- 34 • Secondary stress falls on odd numbered syllables to the right.

35 'nepo,veziem 'I will not carry'
 36 'nepo,vezie,me or 'nepo,vezieme 'we will not carry'

38 *Additional information*

39
 40 Dogil (1999a) describes the accent systems of Czech, Slovak, Sorbian, Polish, and the now extinct languages Polabian and Kashubian. All the

1 West-Slavic languages that are still spoken today have weight-insensitive
 2 systems, i.e. the position of accent is independent of the phonological
 3 make-up of the word. It is also insensitive to morphological structure. In
 4 Czech, Slovak and Sorbian primary accent falls on the initial syllable. The
 5 rules for secondary accent in Czech are different for formal and colloquial
 6 speech. In formal speech, secondary accents fall on odd-numbered syllables
 7 counting from the left edge of the word (i.e. away from the primary
 8 accent), whereas in more colloquial speech they fall on alternating syllables
 9 counting from the right edge of the word (i.e. on the penultimate
 10 syllable and on alternating syllables before it). In Slovak, as in formal
 11 Czech, secondary accents occur on alternating syllables counting from
 12 the left edge, but (depending on the accentual norm) the final syllable of
 13 odd-numbered words may or may not be accented.

14 According to Dogil, Sorbian can be seen as a bridge between Czech
 15 with primary accent on the initial syllable and Polish with primary accent
 16 on the penultimate syllable. Sorbian has primary accent, realised as higher
 17 or rising pitch, on the initial syllable and secondary accent, realised as
 18 lengthening of the vowel, on the penultimate syllable of words with four
 19 or more syllables.

20 This pattern is the same as that of words in Polish under narrow focus,
 21 since in words under narrow focus the “normal” prominence relation
 22 is reversed: primary accent occurs on the initial syllable and secondary
 23 accent on the penultimate syllable. In a subset of Polish words, which
 24 must be regarded as lexically marked, primary accent occurs on the ante-
 25 penultimate or final syllable.

26 The extinct Slavic language Polabian seems to have had a bounded
 27 weight-sensitive accent system. Accent is said to have occurred on the final
 28 syllable if it was heavy and on the penultimate syllable if the final syllable
 29 was light. Unfortunately not all the logical combinations of long and short
 30 syllables within the final two-syllable window occur in surviving Polabian
 31 materials.

32 Slovincian, the northernmost dialect of Kashubian, also had a weight-
 33 sensitive system. It may have formed a bridge between the South and East
 34 Slavic languages on the one hand and the weight-insensitive West Slavic
 35 languages on the other. Like Slovene, Serbian and Croatian it appears
 36 to have had some sort of tonal accent system, with lexical marking like
 37 the East-Slavic languages. The default in Slovincian, however, is initial
 38 accent. The Slovincian system can in fact be described as an unbounded
 39 LAST/FIRST system: accent occurs on the rightmost tonal accented
 40 syllable or on the first syllable. Since many of the historical weight and

1 accent distinctions were eliminated through levelling processes the major
 2 part of Slovincian words ended up with initial accent, like the other
 3 West-Slavic languages. In the other Kashubian dialects initial accent has
 4 indeed become the rule.

6 SOUTH-SLAVIC

8 *StressTyp extracts*

9 **Slovenian; Slovene [F/L/L (tone)]**

- 10 • Stress falls on the first syllable with a strong low tone.
- 11 • If there are no strong low tones, stress the last tone.
- 12 • If there are no tones, stress the last syllable.

13
 14 me'dú: 'honey gen.sg' od'mé:du 'of honey gen.sg'
 15 me'dò:v 'honey gen.pl' me'dó:vih 'honey.loc.pl.'

16 **Serbo-Croatian [F/F (pitch)]**

- 17 • Stress is assigned to the first syllable with a tone, else to the initial
 18 syllable.

19
 20 bra'tǒvʃtina 'brethren community'

21 **Macedonian [A]**

- 22 • Stress falls on the antepenultimate syllable (with lexical exceptions).

23
 24 vo'denitʃar 'miller' 'polkovnik 'colonel' 'vetʃer 'evening'

26 *Additional information*

27
 28 There are Old Church Slavonic texts from the 9th century. Church
 29 Slavonic is still in use, but the accent system of Old Church Slavonic is
 30 not known.

31 The South Slavic linguistic area can be divided into eastern South
 32 Slavic (Bulgarian and Macedonian) and western South Slavic (Slovene,
 33 Serbian and Croatian). The word prosodic systems of the eastern and the
 34 western South Slavic languages differ considerably. Whereas Macedonian
 35 has a fixed accent system, with regular antepenultimate accent and
 36 Bulgarian has a lexical accent system, in which accent has to be dia-
 37 critically marked (much like Russian, see below), the western South Slavic
 38 languages (or at least their standard varieties) have tonal-accent systems
 39 and surface primary accent that is dependent on pitch.

40 Gvozdanović (1999) focuses on these latter systems. Of the three

1 western South Slavic languages standard Serbian and Croatian (which
 2 until recently were classified as one language: Serbo-Croatian; Browne
 3 1993) have the same word-prosodic systems. In her description, they have
 4 lexically marked high tone which spreads one syllable to the left where
 5 possible. Primary accent falls on the first syllable bearing tone. In words
 6 with more than one lexical tone (or tonal accent), all but the rightmost
 7 tone is deleted before primary accent is assigned; cf. also Inkelas & Zec
 8 (1988). In toneless words accent falls on the leftmost syllable. Serbian
 9 and Croatian appear to have a LAST/FIRST accent system: primary
 10 accent falls on the rightmost high tone or on the first syllable.

11 The Slovene system differs considerably on the surface. It has lexically
 12 marked low tone as well as high tone, and the low tones may be diacriti-
 13 cally marked as strong. Accent falls on the leftmost strong tone in a word
 14 or, in the absence of a strong tone, on the rightmost “normal” tone. In
 15 toneless words accent falls on the rightmost syllable. Accent in Slovene,
 16 then, can be described as a FIRST/LAST/LAST system. Gvozdanović
 17 shows that the complicated word prosodic system of this language is
 18 undergoing a simplification process whereby alternations within the para-
 19 digm of a stem are for the most part eliminated.

21 *Generalizations*

22
 23 The Balto-Slavic languages show a great diversity of accentual systems,
 24 ranging from very complex ones (in which word accent is based on tone)
 25 to very simple edge-based accent systems. A significant split seems to be
 26 that in languages where word accent is bounded and usually purely edge-
 27 based (i.e. weight-insensitive) and unbounded systems. Czech, Slovak,
 28 Sorbian, Polish, and Macedonian belong to the former category while
 29 Russian, Ukrainian, Byelorussian, Bulgarian, Serbian, Croatian, Slovene,
 30 and Lithuanian belong to the latter. Only the now extinct languages
 31 Polabian and Kashubian (Slovincian) are somewhat difficult to classify,
 32 but it would seem that the latter was probably unbounded (LAST/
 33 FIRST), whereas the former could be the only example of a right-edge
 34 bounded weight-sensitive system (penult/final).

35 Within the group of languages that have bounded (and as it turns out
 36 weight-insensitive) accent for at least the great majority of their lexicon a
 37 division can be made between systems in which accent is assigned to the
 38 left edge of the word and those where the position of accent must be deter-
 39 mined with respect to the right edge of the word. The first group comprises
 40 Czech, Slovak, Sorbian and Latvian, all with fixed initial accent. Polish

1 and Macedonian, with penultimate and antepenultimate accent respectively, make up the second group of bounded weight-insensitive systems.

3 The weight-sensitive systems can also be subdivided, depending on the
4 criterion for weight. Serbian, Croatian, Slovene, and Lithuanian (as well
5 as Slovencian) are usually analysed as pitch-accent systems (but see Dogil
6 1999b for an analysis of Lithuanian as a lexical accent system). In such
7 systems the position of word accent is dependent on tone, which is itself
8 analyzed as either lexically present, as assigned to lexical accent marks
9 (cf. van der Hulst 1999, section 5). Zec (1994) provides an analysis of
10 Neo-Stockavian in which the position of the lexical tone/accent is predict-
11 able from phonological and morphological information.

12 The East-Slavic languages and Bulgarian are languages in which weight
13 is “diacritic” (cf. van der Hulst 1999, section 2.2.2). Thus the position of
14 accent must be specified lexically for an important part of their morpheme
15 inventory. Systems of this kind are usually called lexical accent systems.

16 The diversity of the stress patterns of Slavic languages has always
17 been a challenge to typological and historical linguistic research. The
18 endeavour has been to find a common core for languages which:

- 19 i. show quantity sensitivity (apparent in by now extinct Polabian
20 and marginal Slovencian (West Slavic), and profoundly present in
21 Slovene and Serbo-Croatian (South Slavic)).
- 22 ii. show an apparently quantity insensitive stress pattern with a syllabic
23 trochee as a base foot type like Polish, Czech, Slovak, Sorbian,
24 Macedonian and Kashubian.
- 25 iii. show prosodic marks on specific – mostly lexically designated –
26 morphemes (Russian, Ukrainian, Byelorussian (East Slavic); Bulgarian,
27 Slovene, Serbo-Croatian (South Slavic)).

28 Traditional research into Slavic accentology has attempted to reconstruct
29 the diversity of the observed system in a single proto-system (cf. Kurył-
30 wicz 1952; Stang 1957; Garde 1976; Dybo 1981; Stankiewicz 1993). Most
31 of the researchers (see Stankiewicz 1993, for a different position) see such
32 a proto-system in the vicinity of the accentual system as represented by the
33 Baltic languages, and particularly Lithuanian. The main accentual proper-
34 ties of historical Baltic (and present day Lithuanian) are rich enough to
35 comprise the parameters found in the Slavic accentual systems:

- 37 – Lithuanian has “accent” realizations (‘acute’ and ‘circumflex’) which
38 are quantity sensitive (see 1 above).
- 39 – dialects of Lithuanian, and particularly Latvian, show regular foot
40 based fixed stress patterns (see 2 above).

- 1 – Lithuanian has a wide range of root morphemes, which have an
 2 ability to receive and preserve stress in a paradigm, as well as affixal
 3 morphemes, which may exert an influence on the accentual properties
 4 of stems (see 3 above).¹⁸

5
 6 4.1.5. Italic (< Indo-European)

7 *Genetic information*

8
 9 ITALIC

10 †OSCO-UMBRIAN (also called SABELLIAN): *Oscan*, *Umbrian*, *Sabellian*

11 LATINO-FALISCAN:

12 †*Faliscan*, †*Latin*

13 ROMANCE (i.e. the development of the Latin that was spread throughout
 14 the Roman empire)

15 SOUTHERN ROMANCE/SARDINIAN: *Sardinian*, *Corsican*

16 CONTINENTAL:

17 EASTERN

18 NORTH: *Rumanian*, *Istro-Rumanian*

19 SOUTH: *Megleno-Rumanian*, *Arumanian*, *Moldovian*

20 WESTERN:

21 ITALO-ROMANCE (Italo-Dalmation)

22 †DALMATIAN: *Dalmatian*

23 ITALIAN: *Italian*, *Sicilian*, *Neopolitan*

24 RHAETO-ROMANCE: *Friulian*, *Ladin*, *Romansch*

25 GALLO-IBERO-ROMANCE:

26 GALLO-ROMANCE:

27 NORTH: *French*

28 SOUTH: *Provençal*

29 IBERO-ROMANCE:

30 NORTH

31 EASTERN: *Catalan*

32 CENTRAL: *Spanish*

33 WESTERN: *Galician*, *Portuguese*

34 †SOUTH: *Mozarabic*

36
 37 18. The information on diachronic aspects was kindly furnished by Grzegorz
 38 Dogil.

Latin is recorded from the 3rd century BCE, although there are inscriptions from the 6th century BCE. Latin suppressed other varieties of Italic (Faliscan, Oscan, Umbrian, Venetic) that died out soon after the beginning of the Common Era. Around 500 AD we find local dialects of Vulgar Latin (which was different from literary 'Classical Latin') which began to develop into different Romance languages. Of the modern languages Italian is closest to Latin. Other languages underwent considerable influence, French from Celtic and German, Rumanian from Slavic languages. Modern Italian has important dialectal differentiation, for example: Neapolitan-Calabrese, Piedmontese, Sicilian and Venetian. Harris and Vincent (1997) contains sketches of the Romance languages.

StressTyp extracts

Latin [P/A]

- Stress falls on the penultimate syllable if it contains a long vowel or is closed.
- Else stress is antepenultimate.

re'fe:ci't re'fectus 'reficit

Sardinian, Campidanese [U/P]

- Stress falls on the final syllable if that is closed or marked for accent, else on the penultimate syllable of the stem (without desinence).
- Final stress is obligatory when the final syllable is closed by a palatal.
- In verbs, stress has become morphologised.

'mendul a 'almond mengi'an u 'morning'

'atom u 'atom a'tomic u 'atomic'

Rumanian [U/P]

- Stress falls on the final syllable if that is marked for accent, else on the penultimate syllable of the stem (without desinence).
- In verbs, stress has become morphologised.

'lingur ə 'spoon mui'er e 'woman'

cu'mətru 'godfather' maha'la 'suburb'

Italian [U/P]

- Stress falls on the final syllable if lexically marked as accented, else stress is on the penultimate syllable of the stem (without desinence).

do'menic a 'sunday' pal'to 'coat' 'atom o 'atom'

Romansch, Berguner (dialect of Retho-Romance) [U/P]

- Stress falls on the final syllable if that is closed or marked for accent, else on the penultimate syllable of the stem (without desinence).
- Final stress is obligatory when the final syllable is closed by a palatal.
- In verbs, stress has become morphologised.

mu'lep 'mill' bu'lef 'mushroom'

lə'venjə 'avalanche' 'pəle 'swamp'

Provençal; Occitan [U/P]

- Stress falls on the final syllable if that is marked for accent, else on the penultimate syllable of the stem (without desinence).
- Final stress is obligatory when the final syllable is closed by a palatal.
- In verbs, stress has become morphologised.

ca'dena 'chain' espi'tal 'hospital'

fi'nestra 'window' tara'bast 'uproar'

French [U/P]

- Primary stress falls on the final syllable, except when that is a /ə/.
- A likely alternative is that French has just a phrase accent.
- Secondary stress claimed to exist, but there is not much evidence.

a:bri:'ko: 'apricot' ystən'sil 'utensil' 'kɛlə 'which [fem.]'

Catalan-Valencian-Balearic [U/P]

- Stress falls on the final syllable if closed or lexically marked, else on the penult.

pa'ɫawlə 'word' cam'pana 'bell'

bə'rets 'hats' ele'fan 'elephant'

Spanish, Castilian [U/P]

- Stress falls on the final syllable if that is closed or marked for accent, else on the penultimate syllable of the stem (without desinence).
- Final stress is obligatory when the final syllable is closed by a palatal.
- In verbs, stress has become morphologised.

1 'termino 'terminus, end' su'til 'subtle'
 2 'util 'useful' bu'fand a 'scarf'
 3

4 **Portuguese [U/P]**

- 5 • Stress falls on the final syllable if that is marked for accent, else on the
- 6 penultimate syllable of the stem (without desinence).
- 7 • Final stress is obligatory when the final syllable is closed by a palatal.
- 8 • In verbs, stress has become morphologised.

9
 10 'perola 'pearl' pa'nela 'pan'
 11 chami'ne 'chimney' pai'nel 'panel'
 12

13 **Portuguese, Brazilian (dialect of Portuguese) [P]**

- 14 • Stress falls on the penultimate syllable.

15 'ama 'he loves' ago'nia 'agony'
 16

17 ***Additional information and generalizations***

18
 19 Vineis (1998) says that Early Latin had a stress accent on the initial syllable and that the shift to the right occurred in Classical Latin, perhaps due to influence of Greek. Silvestri (1998: 238) and Wallace (2004a: 822) ascribe initial stress accent to the †Osco-Umbrian (Sabellian) group. Wallace (2004b) thinks that Venetic also had initial or near-initial accent. Lahiri et al. (1999) offer a study of the development from Early Latin to the modern Romance languages.

25 The modern Romance language family comprises five official state languages, a number of other languages with an official status, and numerous dialects. Roca (1999) analyses the accentual systems of these five state languages (French, Spanish, Portuguese, Italian and Rumanian), as well as of four additional languages that are traditionally considered in Romance philological studies: Occitan, Catalan, Sardinian and Rhaeto-Romance (Romansh). Of these, the accent system of French is the odd one out and will be discussed separately in this summary. Because the accent systems of the other Romance languages have so much in common they will not be discussed individually but as a group.

35 The position of accent in the Romance languages (minus French) is generally restricted to the three-syllable window at the right edge of the word. In this respect, then, the Romance languages (except French) are typologically very similar to the Germanic languages (except Icelandic &

40

1 Faroese), except for the effect of stress-neutral suffixes in the latter which
 2 can locate accent outside the three-syllable window. While StressTyp has
 3 the Romance languages (except for French) codes as [U/P] all of them
 4 also allow antepenultimate stresses. Portuguese, although coded as [P],
 5 does not have a very different system from the other Romance languages,
 6 except again for French.

7 French has predominantly final accent. Only words ending in a syllable
 8 containing a schwa have penultimate accent, but word-final schwa in
 9 French is only pronounced under very specific circumstances nowadays.
 10 It has been argued, however, that accent in French is not a word-level
 11 phenomenon (e.g. Pulgram 1970, Dell 1984) but operates on the phrase
 12 level.

13 In all Romance languages, most nouns consist of a stem and a desinence.
 14 In stems that occur without a desinence accent is usually restricted to the
 15 final two syllables. Desinences are systematically accentless. Roca (1999)
 16 achieves this by formulating a rule which assigns extrametricality to all
 17 desinences, the Romance Extrametricality Rule (RER). The RER allows
 18 for antepenultimate accent if one assumes that feet are left-headed binary.
 19 This system, then, seems very close to that of Classical Latin with its
 20 trochaic feet and final extrametricality. Classical Latin, however, had a
 21 quantity sensitive accent system in which closed syllables and syllables
 22 with long vowels were heavy. Accent fell on the penultimate syllable if
 23 heavy and otherwise on the antepenultimate syllable. Although contras-
 24 tive vowel length has disappeared in the Modern Romance languages,
 25 accent still falls on the penultimate syllable in most words which have
 26 a closed syllable in that position and also in many words with an open
 27 penultimate syllable (i.e. those that used to have a long vowel (in most
 28 cases). Accent has thus become partly unpredictable and potentially
 29 contrastive. Roca proposes to analyse words with penultimate accent as
 30 undergoing the Romance Accent Rule (RAR), which places an accent on
 31 the stem-final syllable. Words which do not undergo the RAR must be
 32 lexically marked as [- RAR]. In these words a left-headed (trochaic) binary
 33 foot will be built on the final two syllables of the stem, resulting in ante-
 34 penultimate accent when the stem is followed by a desinence. Due to the
 35 RAR or the final trochee, words will bear an accent on either the final or
 36 penultimate stem syllable. Primary accent results from elevating this
 37 accent to primary accent status.¹⁹

38
 39 19. In fact, given the final accent assigned by the RAR, all nouns could be said to
 40 undergo trochaic footing. With an accent on the final syllable, the trochaic
 foot will necessarily be monosyllabic.

In the verbal system accent is computed by means of a number of, partly language specific, rules. The most general of these is the Romance Verb Accent Rule (RVAR). This rule places an accent on the theme vowel, the vowel that in some way expresses the conjugation class of the verb. In the future tenses this rule is overruled by the Future Accent Rule (FAR), which places accent on the future suffix. In the present tense the position of accent is predicted best by the RAR, which also determines the position of accent in nouns. Some languages have a fourth rule, the 1st plural/2nd plural Accent Rule (1/2 pl.), which moves the accent one syllable to the right only in the first and second person plural. This rule does not apply across the board in the languages in which it exists, but needs additional morphosemantic contextualisation. All non-finite forms generally undergo the RVAR.

Thus Roca's analysis suggests that the accent system of nouns and verbs is different in nature. In the former primary accent location is based on accent rules (the RAR and trochaic footing), whereas in the latter we rather deal with a lexical accent system in which the rightmost accent is elevated to primary accent.

The complexity of the above-mentioned rules can lead to 'minimal' triplets, as for example in Italian:

- (10) *cápito* 'I turn up'
capító 'understood'
capitó 'he turned up'

Stress can occur outside the three-syllable window when clitics are added; again the following examples are from Italian:

- (11) *cápitano* 'they turn up'
fábbricamelo 'make it for me'

Apart from some compound-like suffixes (to be mentioned below) Romance affixes may be divided into two classes, like in Germanic. Roca describes this division as one between cyclic and non-cyclic affixes. Cyclic affixes are marked such that they trigger cyclic application of the stress rules. Before application of a cyclic rule all metrical information and structure of the preceding cycle is erased by the Stress Erasure Convention (SEC). Non-cyclic suffixes, crucially, do not trigger the SEC does not apply. Cyclic affixes, then, are comparable to the Germanic Class I affixes, in that the same accent rules apply to a stem with Class I affixes as to a stem in isolation. Non-cyclic affixes can be compared to Class II affixes in that the original accent pattern of the stem is left intact. The difference

1 between Romance and Germanic languages is that whereas the Germanic
 2 Class II affixes are completely accent-neutral, the Romance non-cyclic
 3 affixes are affected by the Romance Accent Rule. Thus, although the
 4 metrical structure of the stem is left intact when it enters the non-cyclic
 5 phase, the non-cyclic suffixes may affect the surface position of accent all
 6 the same. There do not seem to be any completely accent-neutral affixes
 7 in Romance.

8 In Romance compounds primary accent falls on the *second* member
 9 (the opposite of what we find in Germanic where the initial member usually
 10 carries primary accent). There has been a lot of debate on whether or not
 11 the accent of the first member of compounds is retained. Although this
 12 first member does not have a clearly prominent syllable in all languages,
 13 certain segmental processes (or the non-occurrence of such processes)
 14 indicate that the accent on that member is present at an earlier cycle.
 15 Thus, the syllable that would be accented when the first member occurs
 16 in isolation will fail to undergo reduction in e.g. Romansh, is lengthened
 17 like other accented syllables in Italian, diphthongises in Spanish, etc.

18 The Romance languages are perhaps the most uniform group in the
 19 Indo-European family with respect to accent. Except for French, they all
 20 have the same basic system with only very slight language-specific devia-
 21 tions. Basically, accent occurs on one of the final two syllables of the
 22 stem. Synchronically the exact position is not always predictable because
 23 syllable quantity distinctions in Latin have not carried over into the
 24 Romance languages, although the Latin accent pattern has been retained.
 25 Thus, the position of accent in the modern languages must be governed by
 26 some sort of accent rule. According to some researchers, French seems to
 27 lack a word accent rule, accent being more of a phrase-final phenomenon.

28 As will be clear, Roca (1999) study entails some obvious corrections of
 29 and additions to the StressTyp information.

31 4.1.6. Armenian (< Indo-European)

33 *Genetic information*

34 ARMENIAN

35 †*Classical Armenian, Armenian*

36 Armenian is closest to Greek in terms of ancestry and has been influenced
 37 by Iranian and perhaps †Phrygian. The heaviest influence on (Modern)
 38 Armenian is from Turkish.

StressTyp extracts**Armenian [L/F]**

- Primary stress falls on the last full vowel, else on the first.
- In some dialects secondary stress falls on the first syllable.

ˈjɛr'pʰɛmən 'sometimes' 'kútemnə 'cress'

Additional information

Proto-Armenian had fixed accent on the penultimate syllable, perhaps under the influence of 𐎱Uartian (Ajello 1998: 202). Clackson (2004: 927) attributes final stress to Classical Armenian.

Modern Armenian has two standard dialects, an eastern and a western dialect, which can be subdivided into about 36 (sub)dialects. Most of these dialects have accent on the final full (=non-epenthetic) vowel (e.g. *yɛr'pʰɛmən* 'sometimes') but some have accent on the penultimate *full* vowel (e.g. *kútemnə* 'cress') or, in a sequence full-schwa-full on the final full vowel. It is also reported that in *all* dialects secondary accent regularly falls on the initial syllable. In words that do not have any full vowels primary accent falls on the initial syllable. Vaux (1994, 1998) presents an analysis of both LAST/FIRST and penultimate systems.

The default first location is reminiscent of the PIE system, which, in the non-default case, would accent the *first* rather than the last heavy syllable.

4.1.7. Albanian (<Indo-European)***Genetic information*****ALBANIAN**

Albanian: *Gheg*, *Tosk*

Albanian (spoken in Albania, in Kosovo, Greece, Italy, Turkey) has two major mutually unintelligible dialects: Gheg (in the north), Tosk (in the south), with further internal divergence. The official language is based on Tosk. The extinct languages 𐎱Illyrian and 𐎱Thracian have been advanced as ancestor languages but this is controversial.

Accent information

Accounts of accent location in Albanian range from unpredictable to statements to the effect that accent generally falls on the final syllable of

1 stems, unless this syllable contains a schwa (orthographically <ë>, which,
 2 however, is not pronounced anyway in most varieties of standard Albanian)
 3 in which case accent falls on the penultimate syllable. Most derivational
 4 suffixes are accent-sensitive. When occurring in final position they will
 5 bear the primary accent, while the originally accented syllable will bear
 6 secondary accent: *púnë* 'work', *pùnëtor* 'worker'. Certain derivational
 7 suffixes (notably all non-verbal suffixes ending in <a, e, o>) and nearly all
 8 inflectional suffixes are accent-neutral; when added to a stem they do
 9 not change the position of the primary accent. Thus, word accent in
 10 Albanian remains invariant throughout the inflectional paradigm of a
 11 stem: *mál* 'mountain', *mále* 'mountains', *máleve* 'of mountains'. The
 12 definite article, which in Albanian is added to the end of the noun, is
 13 also accent-neutral. In compounds primary accent falls on the second
 14 member: *zémër* 'heart' + *gjërë* 'broad' = *zëmërgjërë* 'generous'. Phrase-
 15 accent falls on the final word in a phrase (cf. Bevington 1974; Newmark,
 16 Hubard and Prifti 1982).

17 Trommer (n.d.) contains the most detailed analysis of Albanian accent,
 18 presenting an analysis of 17077 stems, which in 11.006 cases have final
 19 stress and only about 50 cases having accent before the penultimate stem
 20 syllable. He shows that the placement of accent is sensitive to syllable
 21 structure. Trimoraic final syllables almost always have final stress (1084
 22 out of 1088), whereas bimoraic syllables have final stress in 8663 out of
 23 9238 cases. In the case of vowel final stem the location of stress is sensitive
 24 to vowel quality (there is no vowel length) with peripheral vowels (/a,i,u/)
 25 being more likely to be stressed than mid vowels (/e,o/). Final closed
 26 syllables with a schwa do not tend to be stressed unless they are trimoraic.

27 Demiraj (1998: 486) notes that in 'the oldest nouns' stress most fre-
 28 quently falls on the first syllable. Does this indicate that Old Albanian
 29 had an initial pattern? Apparently not; Beekes (1995: 149) says that in
 30 Old Albanian accent was located on the last syllable of verbal stems and
 31 prepositions, and often on the penult in nouns.

32 4.1.8. Greek (<Indo-European)

34 *Genetic information*

36 GREEK

37 † *Classical Greek*, † *Tsakonian*, *Greek*

38
 39 *Greek* is sometimes called HELLENIC. It is considered one language,
 40 but there is, of course, dialectal differentiation already in ancient Greek
 (Ionian-Attic, Aeolic, Arcado-Cyprian, Dorian, Mycenaean). The language

is known as of at least the 13th century BCE as witnessed in Linear B inscriptions from the Minoan civilization in Crete (16th century BCE, most likely earlier), deciphered in 1952 (Horrocks 1997). This phase is often called *Mycenaean Greek*. The *Ionian-Attic* dialect is the basis of *Classical Greek*. The language of Homer (8th century BCE) is an archaic version of Ionic Greek, with admixtures from certain other dialects, mainly Aeolic. Alexander the Great promoted a form of Attic in the conquered territories which evolved into the Hellenistic Koine (3rd c. BC–6th c. AD). This Attic-based Koine was expanded at the expense of the ancient dialects which yielded some devastating results for the linguistic continuum of Ancient Greek. Modern Greek and its dialects descend from Koine. *Modern Greek* is spoken in Greece, Crete, Cyprus and, until the beginning of the 20th century was also spoken in Turkey. There is one endangered variety, namely *Tsakonian* (east coast of the Peloponnese), which is a direct descendent of the Laconian dialect of Sparta, and hence the only surviving remnant of the Doric dialectal branch (Deffner 1881, Anagnostopoulos 1926).

StressTyp extract

Greek, Modern [A;P;U (LEX)]

- Stress is located on one of the last three syllables (lexically determined).

'skrinjo 'console table' la'os 'nation'
'maθima 'lesson' po'litis 'citizen'

Additional information

Classical Greek had three 'pitch accents': high (acute), low (grave) and contour (circumflex). The circumflex occurs on the long final syllable or on the long penultimate syllable if the final syllable is short, e.g. *sóoma* (CVV.CV) 'body-NOM.SG'. If the final syllable is heavy, the acute (i.e. High) part of the pitch-accent is located on the second mora of the heavy PU, e.g. *anthrṓpoo* (CVC.CVV.CVV) 'man-GEN.SG'. Moreover, when the length of these syllables changes accent moves to the antepenultimate syllable (Joseph 2002: 109):

(12) komízoō 'I provide for' ekómiza 'I was providing for'

Also, see Beekes (1999: 150), Szemerényi (1996: 75) who refer to the 'law of three morae' which governs a limitation in the location of accent. Woodard (2004a: 619; 2004b) briefly discusses various Greek dialects: Attic-Ionic, Arcado-Cypriot, Aeolic, Doric, Northwest Greek. The change

1 from pitch-accent to stress-accent was in progress in Attic-based Koine by
2 the first century AD, and even earlier.

3 In Modern Greek the word accent location largely follows the former
4 location of the pitch accent (Drachman and Drachman 1999). As a con-
5 sequence, accent in Greek falls on one of the final three syllables of the
6 word, the so-called ‘three-syllable window’. It may in principle occur on
7 any of the syllables within the three-syllable window but the antepenul-
8 timate position seems to be the default. This means that Greek can be
9 described as a language with a bounded trochaic foot system and an extra-
10 metrical final syllable. Words with accent on the penultimate syllable will
11 have to be marked as exceptions to extrametricality, while words with
12 accent on the final syllable will have to be represented with a lexical mark
13 on that syllable. Lexical marking can occur with individual stems and
14 suffixes, but is more often a property of a certain class of words. Nouns
15 usually have more lexically accented members than verbs (Revithiadou
16 1999). On the other hand, in verbs lexical marking is a property of suffixes
17 whereas in nouns it is a property of stems and suffixes. The lexical marks
18 are sometimes claimed to be mostly remnants of vowel length contrasts
19 that occurred in Classical Greek (Philippaki-Warbuton 1976) but have
20 since disappeared. This is a common misconception. Ancient Greek had
21 inherited its accents from PIE. Especially in Attic, accents not only were
22 preserved but also proliferated due to various vowel contraction processes
23 that took place. In short, the position of accent in Ancient Greek was
24 largely unpredictable and thus not guided by quantity. The default
25 was on the APU (a development of Proto-Greek; PIE had initial default).
26 The one predictable aspect of the Ancient Greek system was the three
27 mora constraint – described above – that required circumflex on the
28 penultimate syllable when the final syllable was short. This rule was fos-
29 silized in the form of pre-accenting suffixes. Thus, only pre-accentuation
30 is a remnant of the loss of the vowel length contrast.

31 Postlexical (rhythmic) secondary accents seem to be optional in modern
32 Greek. It is obligatory with clitics, e.g. *o ðáskalos* ‘the teacher-NOM.SG’, *o*
33 *ðáskalos mu* ‘the teacher-NOM.SG cl-POSS.1SG/ ‘my teacher’. Note that in
34 Standard Greek, the leftmost accent has secondary prominence, e.g. but
35 there is variation depending on the dialect and sometimes even the age
36 of the speaker. There is no rhythmic stress on alternating syllables.
37 Secondary stress occurs initially in long words or (one PrW) compounds:
38 [*ándikapnistís*] ‘anti-smoker’ (</antí/, /kapnistís/). Enclitics that are added
39 to a word with antepenultimate accent do not cause accent-shift but rather
40 induce an extra accent. All clitic stress is post-lexical/rhythmic.

The addition of suffixes to a stem will cause a shift of accent when

1 accent would otherwise fall outside the three-syllable window, e.g. *sóma*
 2 /somat-/ 'body-NOM.SG', *sómata* /somat-a/ 'body-NOM.PL'. Drachman and
 3 Drachman (1999) call this 'transparent' accent shift. Certain suffixes may
 4 also be lexically marked as causing accent shift. In that case the shift can
 5 be said to be 'opaque' since there are no phonological reasons for it, e.g.
 6 *ánthropos* /anθrop-os/ 'man-NOM.SG', *anθrópu* /anθrop-ú/ 'man-GEN.SG'.

7 Greek compounds may either constitute one accent-domain (prosodic
 8 word), in which case stress is on the APU syllable, e.g. *spirtókuto* /spirt-o-
 9 kut-o/ 'match box', or they may consist of two separate domains (recursive
 10 prosodic word or two prosodic words), in which case stress is on the syllable
 11 of (each) accent-domain, e.g. *xartopetséta* /xart-o-petséta/ 'paper napkin',
 12 *ánthropos-kliði* 'key-person'. When a compound consists of two prosodic
 13 words normally the rightmost bears primary accent. Prefixes generally
 14 behave like the first member of a compound.

15 4.1.9. Tocharian (<Indo-European)

17 *Genetic information*

18 †TOCHARIAN

19 *Tocharian A, Tocharian B*

21 This family is known from documents dating from around 700 AD found
 22 in Western China.

24 *Accent information*

25 Winter (1998: 155, 158) says that Tocharian B reflects the Common
 26 Tocharian accent location. Accent lowers central vowels. Such vowel
 27 alternations thus give indication of the location in Tocharian B: the accent
 28 seemed to be on the second syllable of the word, unless the word would be
 29 two syllables in which case accent was initial. The location in Tocharian
 30 A is 'poorly understood'. Perhaps non-high vowels pulled accent leftward
 31 (to the word-initial syllable, I suppose). (Also see Beekes 1995: 149).

33 4.1.10. Anatolian (< Indo-European)

34 *Genetic information*

36 †ANATOLIAN

37 *Hittite, Palaic, Lydian*

38 **LUWOID:** *Cuneiform and Hieroglyphic Luvian, Lycian, Carian*

39
 40 Anatolian refers to a group of now extinct languages spoken from around
 2000 BCE to the first centuries in areas of Turkey and Syria (Asia Minor).

Hittite was shown to be related to IE in 1915. We know the language from cuneiform tablets that were found in central Turkey from an empire that flourished from 1700 to 1200 BCE. It is the oldest attested form of IE.

Hurrian, Urartian are sometimes mentioned for this group but these languages are not IE. Also, Phrygian is an IE language, but does not belong to the Anatolian subgroup as defined above.

Accent information

Melchert (1997) provides information on accent in Hittite. Processes that involve lengthening and shortening of vowels in certain cases suggest that there was accent. So far as one can tell from the limited evidence, accent is lexical. There is some evidence for an accent shift, when clitics are present, to the preclitic syllable, but the status of this phenomenon remains uncertain. Watkins (2004: 557) remarks that Hittite inherited from common Anatolian the IE accent, although the pitch aspect, if present, was accompanied by a ‘stress component’ because of lengthening and shortening effect in vowels. He also says that the place of Hittite accent often preserved the location of IE, including mobile accent in some paradigms:

tēgan ‘earth’ tagní ‘earth loc.sg.’

Melchert (2004) provides sketches of Luvian, Palaic, Lycian, Lydian and Carian all as separate languages, next to Hittite, but does not give accent information. Sparse evidence for vowel lengthening and shortening in Palaic and Luvian, similar to that in Hittite, can be found in Melchert (1994: 204 and 247) and for massive syncope in Lycian in Melchert (1994: 294 and 326–7), which suggest a stress accent. Massive syncope and apocope in Lydian as well as certain synchronic vowel alternations also point to a lexically determined stress accent (Eichner 1986ab, Melchert 1994: 349–51).

4.1.11. Phrygian (< Indo-European)

Brixhe (2004) contains a description of this extinct language, but no information on accent location seems to be available.

4.2. *Basque (Isolate)*

Genetic information

BASQUE

Basque (Spain)

Basque, Navarro-Labourdin (France)

Basque, Souletin (France)

This best-known isolate language, Basque, is also named *Euskara*. The majority of speakers live in Spain, while a fair number of speakers live in France. There is a rich dialectal differentiation, especially regarding the word prosodic characteristics. There are proposed links to languages of the Caucasus, to native American languages and to Burushaski (an isolate in Pakistan), all debated and questioned.

Often eight dialects are distinguished, 4 of which have a literary tradition: Guipuzcoan, Biscayan, Navarro-Labourdin, Souletin. *StressTyp* contains a variety of different dialects, mostly based on the work of Jose Hualde (Hualde 1999).

StressTyp extracts

Basque, Gernika [LEX (pitch)]

- There is a fundamental distinction between unaccented and accented words.
- Unaccented words receive final prominence only at the phrase level.
- Accented words present a rise in pitch culminating on the accented syllable, which is followed by a sharp drop on the following syllable.
- Accent is lexically determined, but never falls on the final syllable.
- The leftmost accent determines the location of the prominent syllable.
- Suffixes can be inherently accented, or pre-accenting.

kánpotarak ‘the outsiders’ gíʃónari ‘to the men’
pelotari or pelotarí ‘ball player’

Basaburua and Imoz [LEX-I;S]

- In the singular the primary stress falls on the first or second syllable and a secondary stress on the last syllable.
- In the plural, on the other hand, primary stress falls on the syllable that contains the plural suffix, which may be the last or the penultimate syllable of the word.

ˈgisoˌnak ‘the man erg.’ gisoˌnak ‘the men abs.erg.’
eˈmakuˌmek ‘the woman erg.’ emakuˈmek ‘the women abs.erg.’

(A dialect of this type, that spoken in the town of Goizueta, has been the object of a recent acoustic study (Hualde, Lujanbio & Torreira, to appear). It turns out that in Goizueta both stress and pitch-accent are lexically contrastive. Stress may contrastively fall on the first or on the second syllable. In addition, the stressed syllable is lexically specified for either a rising or a falling contour. Most plurals have a falling contour. In citation form, there is a second pitch movement at the end of the word (in a way that

is reminiscent of Swedish). When the stressed syllable of the stem has a falling contour, the second pitch movement has a wider contour, which accounts for the greater prominence on the suffix that other authors had perceived.)

Basque, Bidasoa Valley [S]

- Stress normally falls on the second syllable of the stem.
- Monosyllables are stressed.

inpor'tantsi 'importance' 'lur etik 'from the land'

Basque, Northern High Navarrese [P;U (IRR)]

- Stress normally falls on the penultimate syllable.
- Uninflected consonant-final words may optionally receive final stress.

'etʃja 'the house'

Basque, Hondarribia [U/P]

- If the stem is monosyllabic stress falls on its only syllable.
- If the stem is bisyllabic stress falls on the second syllable.
- If the stem has three or more syllables and ends with a vowel stress falls on the penultimate syllable of the stem. Else on the last syllable.
- Inflectional suffixes do not have any relevance for the assignment of stress.

'ar a 'the worm abs.' ka'to 'cat'
tʃistu'lari ja 'the flutist abs.' irabas'tun 'the winner'

Basque, Lekeitio [P (pitch)]

- There is a fundamental distinction between unaccented and accented words.
- Most words are unaccented and receive final prominence only at the phrase level.
- Accented words present a rise in pitch culminating on the accented syllable, which is followed by a sharp drop on the following syllable.
- Accent (Stress, red.) always falls on the penultimate syllable.

sagara 'apple abs.' sagáarak 'apples abs.'
sagarétik 'apple abl.' sagaretátik 'apples abl.'

(Note that this is exactly the same as the Gernika system, with the restriction that lexical accents, with a few exceptions, are always shifted to the penultimate syllable of the words.)

Basque, Oñati [S;I]

- Monosyllables have stress.
- In bisyllabic stems stress falls on the initial syllable of the uninflected form and the second of longer, inflected forms. Some bisyllables always have initial stress.
- Longer words are stressed on the second syllable of the stem, suffixes have no influence.
- Accent (Stress, red.) always falls on the penultimate syllable.

a'bare 'priest 'gison 'man gi'sona 'man abs.'

Basque, Roncalese [P;U;A]

- Uninflected forms may be stressed on any of the last three syllables.
- Penultimate stress is the most common option.
- Inflectional suffixes do not influence stress placement, but may receive a secondary stress.
- Plural suffixes other than the absolutive attract stress to themselves.

mar'susa 'strawberry ama'ni 'grandmother 'samari 'horse'

Basque, Sakana [I;S]

- Stress generally falls (non-contrastively) on the initial syllable.
- A secondary stress falls on the last syllable of the phrase.
- In words of three or more syllables the primary stress may fall on either the first or the second syllable.
- Unclear whether stress variation is rhythmical or lexical (perhaps phrasal accent).

'kari,ka 'street 'arbisua,ra or ar'bizua,ra 'person from arbizu'

Basque, Souletin [U/P]

- Stress generally falls on the penultimate syllable.
- Some suffixes attract stress to themselves when they occur in final position.

'gisun 'man gi'suna 'man abs.' gisu'nek 'the men erg.'

Basque, Zeberio [LEX]

- Accent location is lexically determined.
- Unlike in the northern Biscay dialects, Zeberio accent is not just marked with pitch.
- Uninflected words can be accented or unaccented, but all inflected words are accented.
- In words with several accented morphemes only the first is given surface prominence.

- Suffixes may influence accenting, depending on morphology and stem size.

mama'roa 'bug abs.' ma'maroak 'bugs abs.'
 mama'roari 'bug dat.' ma'maroari 'bugs dat.'

(An additional system worth-mentioning is that of Azkoitia, with regular stress on the third syllable from the beginning; Hualde 1997b).

Additional information

Perhaps the most important contribution to the study of Proto-Basque accentuation has been made by Michelena (1958, 1977). Michelena observes that the aspiration in Basque dialects (i.e. those that have this feature) almost never falls beyond the second syllable of the word. With the same suffix, we find alternations between forms with and without aspiration, as in *sor-thu* 'to be born' vs. *ager-tu* 'to appear', depending on the position of the suffix with respect to the beginning of the word. From these and other facts, Michelena concludes that aspiration was linked to prosodic prominence in Old Basque and that the accent fell on the second syllable of the word at the stage he reconstructs (the first centuries of our era). Then, he shows how the systems with penultimate accent found nowadays in eastern dialects could have derived from his reconstructed system. Not all present-day Basque accentual systems, however, appear to be derivable from Michelena's reconstruction. In particular, the western accentual type cannot easily be derived from Michelena's reconstructed system and, in fact, is incompatible with it (Hualde, 1995, 2007). This is because old borrowings from Latin and Romance accented on the second syllable, such as *kipúla* 'onion', present an anomalous accentual pattern in western varieties. This would not be the case if at the time of the borrowing post-initial accentuation was the regular pattern. The western Basque accentual type can be derived, instead, from an earlier system without contrastive accentuation, where the word or phrase-final syllable received accentual prominence (Hualde 1993). The central type, with regular stress in the second syllable, appears to have derived from the western pitch accent type by reinterpretation (Hualde 2003; Hualde, Elordieta, Gaminde and Smiljanić 2002).²⁰

20. The diachronic information about Basque was kindly made available to us by José Ignacio Hualde.

Hualde (1999) presents an overview of the different accentual systems found in Basque dialects. He distinguishes three main accentual types: the WESTERN type, which is a lexical system with unaccented and accented stems, the CENTRAL type in which accent is assigned from the left word-edge, and the HONDARRIBIA/OLD LABOURDIAN type, in which accent seems to be assigned from the right word edge. Hualde shows that one cannot speak of 'the Basque accentual systems', because systems with very different properties are found in different varieties of Basque. Additionally, Hualde (p.c.) adds the SOULETIN type (with unmarked penultimate and marked penultimate stress) as a special type, as well as the WESTERN NAVARRESE type represented by Goizueta, with both lexical stress and lexical pitch-accent.

In the WESTERN type the position of a prosodically prominent syllable is lexically determined. This prominence is in some parts realised as a pitch drop following the accented syllable (a H*L melody) and in other parts as accent. In lexically unaccented words a default rule gives prominence to the final syllable when the word occurs in phrase final position.

In the CENTRAL type accent is regularly assigned to the second syllable, although bi- and monosyllabic stems may have initial accent due to a general tendency that avoids word-final accent in this variety of Basque. In certain Central dialects the position of the accented syllable is partly determined by morphological factors.

In the HONDARRIBIA/OLD LABOURDIAN type quite a lot of variety occurs. The Hondarribia dialect appears to be quantity-sensitive, since a moraic trochee is built at the right edge of the word, whereas the other dialects of this type are quantity insensitive, with mainly penultimate accent. In some of these dialects the position of accent is partly determined by morphological factors (which may be translated into lexical accents on certain morphemes).

Generalizations

The Basque dialects present a great diversity of word-prosodic systems, especially when one takes into account the size of the area in which Basque is spoken (only about 135×35 km.). The Basque word-prosodic systems range from lexical pitch-accent and stress-accent systems in the Western dialects to weight-insensitive accent on the second syllable in some Central Basque dialects and weight-insensitive accent on the penultimate syllable in Old Labourdian Basque. Thus, there is not only a distinction between pitch-accent and accent systems and between weight-sensitive and weight-

insensitive systems, but also, within the weight-insensitive accent systems, accent can be assigned from either the right or the left edge. This enormous variety in such a small territory is reminiscent of the situation in the Caucasus.

4.3. South Caucasian (Kartvelian)

Genetic information

This section deal with South Caucasian languages, henceforth called Kartvelian:

KARTVELIAN

Georgian

Svan

ZAN: *Mingrelian, Laz*

StressTyp extracts

Georgian [A;I (NMS)]

- Stress in Georgian is extremely weak and has no effect on vowel quality.
- In words of four syllables or less, stress is either initial or antepenultimate.
- In longer words stress is both initial and antepenultimate.

'sakartvelo or sa'kartvelo 'georgia'

'mdgoma'reoba 'situation'

Additional information

Aronson (1997: 931–932; Aronson 1982) says that accent in Georgian is non-distinctive and that some view the location as penultimate, others as antepenultimate. Indeed, it is said that accent in Georgian is very weak, so weak that “linguists have not been able to agree on exactly where it falls”. There is no difference in quality between vowels in accented and in unaccented syllables, hence no reduction in unstressed position; the language is sometimes called syllable-timed. StressTyp makes a statement about all words of four syllables or less, but in fact in words up to three syllables accent regularly falls on the first syllable. Only in words of four syllables there appears to be an option in that accent either falls on the first or the second (antepenultimate) syllable, as in *Sákartvelo* ~ *Sakártvelo* ‘Georgia’. In words of more than four syllables there are two accents,

one on the first and one on the antepenultimate syllable (*mdgómaréoba* ‘situation’). In certain words of more than four syllables the initial accent may optionally drop: *énatmecniéreba* ~ *enatmecniéreba* ‘linguistics’. Georgian may thus be analysed as having antepenultimate primary accent (trochaic feet and final extrametrical syllable) and secondary accent on the first syllable. Accent clashes (in four syllable words) are solved by deleting either of the two accents.

4.4. North Caucasian

Genetic information

NORTH CAUCASIAN

(NORTH)WEST (ABKHAZ-ADYGHEAN) (may be a separate family) (4.4.1.)

Ubyx (*Ubykh* †1992; Turkey)

ABKHAZA-ABAZA: *Abaza*, *Abkhaz*

CIRCASSIAN: *Adyghe* (*West Circassian*), *Kabardian* (*East Circassian*)

(NORTH)EAST (NAKH-DAGESTANIAN) (4.4.2.)

NAKH (NORTH CENTRAL) (4.4.2.1.)

Bats

CHECHEN-INGUSH: *Chechen*, *Ingush*

DAGESTAN (NORTHEASTERN) (4.4.2.2.)

AVAR-ANDI-DIDO: *Avar* (*Daghestani*) (4.4.2.2.1.)

ANDI: *Andi*, *Botlix*,

Godoberi, *Chamadal*, *Bagvalal*,

Tindi, *Karata*, *Axvax*

DIDO (Tsezic):

West-Tsezic:

Xvarshi

DIDO-HINUX: *Dido*, *Hinux*

East-Tsezic:

BEZHTA-HUNZIB:

Bezhta, *Hunzib*

LAK-DARGWA: *Lak*, *Dargwa* (or *Dargin*) (4.4.2.2.2.)

LEZGIAN (4.4.2.2.3.)

Xinalug

Archi

Udi

LEZGIAN-PROPER:

East-Lezgian: *Lezgi* (or *Kuri*), *Tabasaran*, *Agul*

South-Lezgian: *Kryts*, *Budux*

West-Lezgian: *Rutul*, *Tsaxur*

The Ethnologue has a much flatter structure: with Avar-Andi, Dargi, Xinalug, Lak, Lezgi, Nakh and Tsezic all equal daughters of the Eastern branch.

The treatment of this family is separated into several subsections as indicated in the family tree above.

4.4.1. Northwestern Caucasian languages (<North Caucasian)

StressTyp extracts

Abkhaz [LEX]

- Stress location is unpredictable, there are minimal pairs.

'aratɕ^wa 'plurality' a'ratɕ^wa 'coal'
 ara'tɕ^wa 'bark from a walnut tree'

Additional information

An example of a North-West Caucasian language is Abkhaz spoken in Abkhazia, an autonomous republic of Georgia, as well as in Turkey, and closely related to Circassian. Although the accent system of Abkhaz has not been analysed or even described in detail, it is apparent that it is lexical since the position of accent cannot be predicted from purely phonological information (Hewitt 1979: 264) and there are numerous minimal pairs distinguished only by the position of accent (e.g. *árac^wa* 'plurality', *arác^wa* 'coal', *arac^wá* 'bark from a walnut tree'). Apparently, two classes of words have to be distinguished: those with non-movable accent, in which accent falls on the same syllable throughout a paradigm, and words with movable accent. Words with non-movable accent are nominal bases consisting of one closed syllable and nominal bases of more than one syllable with non-final accent. The group of words with movable accent can be subdivided into words with 'progressive' movement of accent (i.e. accent always moves to the final syllable of the word) and words with 'regressive' movement of accent (i.e. accent always moves to the initial syllable of the word). No comprehensive set of rules that determine to which of these classes a word belongs has been established, however.

A second North-West Caucasian language is Adyghe, also called West Circassian. This language is spoken in Turkey, Jordan, Syria, and Israel as well as in the Caucasus. According to Smeets (1984) words "usually have a prominent syllable, but one cannot predict with certainty which syllable will be the accented one". Accent usually falls on one of the final two

1 syllables of the stem (A stem consists of a root and its affixes, excluding
 2 the inflectional endings.). Penultimate accent appears to be the default, as
 3 in *seláze* ‘I am working’. An unaccented stem-final vowel that occurs in
 4 word-final position (i.e. is not followed by any inflectional endings) is
 5 often dropped, resulting in final accent at the surface level (*wəbətá* ‘catch
 6 it-IMP’). In longer words, a secondary accent often falls on the first
 7 syllable, but is not obligatory. In fact, Smeets gives an example of a four-
 8 syllable word with five possible accent patterns: penultimate accent, final
 9 accent, initial accent, initial secondary and penultimate primary accent,
 10 and initial secondary and final primary accent. Not surprisingly with so
 11 many options, the functional load of accent is said to be extremely low.
 12 In running text words that do not occur in phrase-final position often
 13 have no prominent syllable at all. Since accent has no fixed position it
 14 can be, and often is, used to emphasize one of the constituent morphemes
 15 of a word. This is possible because Circassian is a highly agglutinative
 16 language.

18 4.4.2. Northeastern Caucasian languages (< North Caucasian)

20 4.4.2.1. NAKH (< Northeastern < North Caucasian)

22 The Nakh-subfamily contains Bats, Chechen and Ingush. StressTyp has
 23 information on the latter.

24 *StressTyp extracts*

26 **Ingush [I]**

- 27 • Stress always falls on the initial syllable.

28
 29 'mott 'tongue, language' 'tassa 'sprinkle'
 30 'beaccara 'green' 'kinaška 'book'

32 *Additional information*

34 In Chechen accent is word-initial (Nichols 1997: 966–967). If a verb takes
 35 a preverb, the preverb is accented, as is the verbal stem, with the former
 36 accent being stronger. Unstressed syllables undergo neutralization of short
 37 vowels and shortening of long vowels. Three clitics have inherent high
 38 pitch. The negative *ca* and the imperative *ma* (both proclitics) and the
 39 coordinating enclitic *ʔa*.

4.4.2.2. DAGESTAN (< Northeastern < North Caucasian)

The Daghestanian languages can be subdivided into three groups: a NORTHERN, CENTRAL and SOUTHERN group. Kodzasov (1999) presents examples from languages in both the Northern and the Southern group. These languages show a considerable diversity in their word prosodic systems.

4.4.2.2.1. NORTHERN DAGESTAN: AVAR-ANDI-DIDO
(< Dagestan < Northeastern Caucasian languages < North Caucasian)*StressTyp extracts***Avar; Dagestani [I/I (tone)]**

- Stress is initial, except when the first syllable has a low tone and the second a high tone.
- If the tone value of the two first syllables is equal stress shifts to the second syllable if that syllable is closed.

'rósù 'village' mù't'ú 'mirror' mó'q'óq' 'partridge'

Ghodoberi [LEX-(F)]L (Tone)]

- In nouns stress depends on high tone, articulatory accent(!), lexical marking and breathy voice in an intricate way. Generally, the heaviest syllable or the final is stressed.
- In verbs only the aorist has initial stress, otherwise stress is final.

'ítʃáti 'mare dat.' búká'í! 'bull.dat'

'ɛúmi 'sleep aor.' ɛúmítí'í'bú 'sleeping fut.part.'

Bagvalal; Bagulal; Bagval; Bagvalin [LEX-U/P]

- Words can have strong stress, weak stress or no stress.
- Strong stress can occur anywhere in the word.
- Weak stress occurs on the final syllable if it is closed, else on the penult.

'buk'a 'it was' tʃi'ba 'bitch' aɣwal'la 'in aɣwali village'

tʃ'i,luɬ 'cheek gen.' tʃ'ila 'cheek nom.'

Additional information

The NORTHERN languages tend to have syllabic tone (the exact acoustic correlate of which is not yet clear) rather than accent, although some

1 of the languages have both tone and accent. Andi is an example of a
 2 language with four tones and no accent. The tones are High, Low, Falling
 3 and Rising. The Falling and Rising tones can in most, but not all,
 4 instances be interpreted as sequences of High and Low. Almost all pos-
 5 sible tonal combinations are found in disyllabic words. In Akhvakh, a
 6 language closely related to Andi, the tonal combinations are far more
 7 restricted. Generally it can be stated that the tone of the second syllable
 8 must be less or equally prominent than that of the first syllable ($R > H >$
 9 $F > L$). Kodzasov points out that such a system may be the first step
 10 towards an accentual pattern with initial accent. Already tonal differences
 11 are accompanied by differences in length and duration. Apart from these
 12 purely tonal languages Kodzasov mentions a number of languages with
 13 accentual prominence based on tone or “quasi-tonal” properties.

14 Avar, the lingua franca of North Daghestan, has an accent system
 15 which is sensitive to tone. In disyllabic stems Avar distinguished only
 16 between High and Low, and all four possible combinations of these tones
 17 occur. Clearly, the High tone is the most prominent one in Avar and this
 18 influences the position of accent. In a HL word accent falls on the first
 19 syllable, in a LH word on the second. When the tones on the stems are
 20 the same (i.e. HH, or LL) two other factors start playing a role, namely
 21 the presence of an “Articulatory Accent”, and syllable weight. In Godo-
 22 beri the accent system is of a similar complexity. The position of accent is
 23 dependent on the presence or absence of an Articulatory Accent, on the
 24 presence or absence of breathy voice, and on the tone pattern of the stem.
 25 When both Articulatory Accent and breathy voice (which triggers final
 26 accent) are absent accent falls on the first high tone and if there is
 27 no high tone, on the last syllable, i.e. we have a tone-sensitive first/last
 28 system. Syllable weight does not play a role in the process of accent
 29 assignment in Godoberi.

30 Apart from these systems with tone and accent there are also North
 31 Daghestanian languages in which the presence of accent seems to be a
 32 lexical feature. In Bagvalal words may be completely unaccented, weakly
 33 accented, or have a strong, clearly perceptible, accent. The position of the
 34 strong accent is unpredictable, the weak accent usually occurs on the right
 35 edge and seems to be weight-sensitive (falling on the final syllable if it is
 36 heavy and one the penultimate when the final is light). In words that are
 37 completely unaccented a slight intensification of the first syllable may be
 38 perceived.

39
 40

4.4.2.2.2. CENTRAL DAGESTAN: LAK-DARGWA

(< Dagestan < Northeastern Caucasian languages < North Caucasian)

Anderson (1997: 977–978) says that stress in Lak is not well-understood. There appears to be a tendency to stress the last closed or heavy syllable in the root or inflectional ending:

dúrka ‘food’ buxttán ‘slander’
burču ‘skin’ burčúl ‘skin (gen. sg.)’

Certain suffixes (even when open and short vowel) attract stress. It is also claimed that there are stressless words such as *turlu* ‘cloud’.

4.4.2.2.3. SOUTHERN DAGESTAN: LEZGIAN

(< Dagestan < Northeastern Caucasian languages < North Caucasian)

StressTyp extracts

Archi; Archin [S/S]

- Only one of the first two syllables may be stressed.
- Comparison of vowel quality determines stressing: The second syllable is stressed if its vowel is not inferior in weight to the first vowel, else stress is initial.

bu'χut ‘veins’ 'belum ‘spades’

Hunzib [U/P]

- Stress the final syllable if it contains a long vowel, else the penult.

'iyu ‘mother’ 'k'ot't'u ‘good’

hi'naa ‘how’ k'i'saa ‘play’

Lezgi; Lezgian; Kiurintsy [I/I (IRR)]

- Stress always falls on the second syllable if it is closed and the first is open.
- If the first is closed stress is usually initial, with many exceptions, especially in loans.

ču'k'ul ‘knife’ q'ic'ti ‘jug.erg’ 'šekdi ‘lamb.erg’

Tsakhur; Tsaxur; Caxur [U;I]

- Words come in two classes, stressed and weakly stressed (or unstressed).
- The stress in stressed nouns is final, in verbs it is initial.
- In weakly stressed forms long vowels (only in nouns) and closed syllables are prominent.
- Status of weak stress unclear (perhaps phrase accent red.)

1 t'y'bytʃ' 'spindle' tʃ'i'ka 'knife'
 2 dop'pi 'clay jug' 'e:k'alor 'jump.pres'
 3

4 *Additional information*

5
 6 The SOUTHERN Daghestanian languages do not have tone systems.
 7 Accent is mostly restricted to the first two syllables of the word. Lezgian
 8 is a weight-sensitive language in which accent falls on the second syllable
 9 if the first syllable is open (i.e. light) and on the first or the second syllable
 10 if the first syllable is closed (i.e. heavy). In the latter case the position must
 11 be lexically indicated. In loanwords accent may fall outside the left foot.
 12 Archi, too, is a weight-sensitive system in which accent is restricted to the
 13 first two syllables of the word. In Archi, however, weight is based on
 14 vowel quality and, to a lesser degree, on syllable closure. The vowels /e/
 15 and /a/ count as heavy, the other vowels (/i, u, o/) are light. Basically
 16 accent falls on the first syllable if it contains a 'heavy' vowel followed by
 17 a 'light' vowel, and otherwise on the second syllable. Syllable closure can
 18 play a role when both syllables have either a 'heavy' or a 'light' vowel.
 19 Vowels in pre-accent position tend to be reduced.

20 In the South Daghestanian language Tsakhur there are stems with
 21 and without accent. Accent is restricted to the final syllable, but can be
 22 analysed as weight-sensitive. In Tsakhur the weight-scale looks as follows:
 23 CVC(C) > CV: > CV. In each syllable type the vowels /a, e, o/ are
 24 'heavier' than the vowels /i, u, y/. In nouns there is a general restriction
 25 that lighter syllables may not precede heavier syllables. This means that
 26 the final syllable is always at least as heavy as the syllables preceding it
 27 and hence, that if accent is weight-sensitive it is expected to occur on the
 28 final syllable. For verbs the accentual patterns and phontactic restrictions
 29 are slightly different.

30 We see that in the Daghestanian languages a whole array of word
 31 prosodic systems occurs. The southern languages are accent languages in
 32 which the position of the accent is determined mainly by weight and
 33 edge. The northern languages, which seem to be more archaic phonologi-
 34 cally, are tone languages in which accent, if it occurs, is tone-sensitive.
 35 Some of the northern languages may be in a transitional stage in that an
 36 accentual pattern seems to be developing out of a purely tonal pattern.
 37

38 *Generalizations*

39
 40 The Kartvelian languages as a whole exhibit a great variety of word
 prosodic systems, ranging from purely tonal systems in the northern

1 Daghestan languages to bounded weight-sensitive accent systems. In
 2 those Caucasian languages that have accent, its position may be lexical
 3 (Abkhaz), determined by pitch-accents or tone (Avar, Godoberi), quantity
 4 sensitive (Lezgian), sensitive to vowel-quality (Archi), or fixed (Tsakhur).
 5 Both bounded and unbounded systems occur. There even appear to be
 6 Caucasian languages in which not only the position but the very presence
 7 of accent is lexically determined (Bagvalal). In some of the languages
 8 accent seems to fluctuate (Adyghe or West Circassian). Thus, examples of
 9 most types of word prosodic systems can be found in the North Caucasian
 10 languages.

11 The great typological diversity of accentual systems raises the question
 12 about the prosodic system of the proto-language. So far there has been no
 13 attempt to reconstruct this system and to follow its evolution into the
 14 modern systems. With respect to the Daghestanian accentual systems,
 15 only a very tentative opinion on the topic was expressed in Nikolajev &
 16 Starostin (1994). They believe, that the prosodic type presented by such
 17 Northern languages as Andi and Akhvakh (no stress, syllabic tones,
 18 open syllables) is the oldest. Stress seems to be a rather late development.
 19 Arising in the North, it reflected an inherent prosodic structure of words
 20 (i.e. tonal and quasi-tonal properties). Arising in the South, it was oriented
 21 towards the edge and quantity sensitive. This difference is probably due to
 22 the fact that the inherent prosodic structure of words was already different
 23 in these two groups at the moment that stress arose.²¹

24 4.5. Uralic (*minus Yukaghir*²²)

25 **Genetic information**

26 URALIC

27 SAMOYED (Siberia)

28 NORTH: *Nenets* (*Yurak*), *Enets* (*Yenisei Samoyed*), *Nganasan*
 29 (*Tavgi or Aram*)

30 SOUTH: *Selkup* (*Ostyak Samoyeed*), *Mator*, ⚡ *Kamas*

31 FINNO-UGRIC

32 UGRIC:

33 *Hungarian*

34 OB-UGRIC: *Ostyak* (*Khanty*), *Vogul* (*Mansi*)

35 FINNO-PERMIC:

36 PERMIC: *Udmurt* (*Votyak*), *Komi-Zyrian*, *Komi-Permyak*

37
38
39
40 21. This information was kindly made available to us by Sandro Kodzasov.

22. Yukaghir is discussed in chapter 10, section 4.2.2.

1 FINNIC:

2 CHEREMITIC: *Mari (Cheremis)*

3 FINNO-MORDVINIC:

4 MORDVINIC: *Mordvin (Moksha)*, *Ezra*

5 FINNO-LAPPIC

6 SAAMIC (=LAPPIC): *(East, South and West) Saami*7 BALTO-FINNIC: *Finnish, Ingrian, Karelian, Olonets,*8 *Ludic, Livonian, Votic, Vespian, Estonian*

9 The Ethnologue has a much flatter structure with all major branches
10 of Uralic as equal daughters (Finnic, (Finno-)Ugric, Mari, Mordvin,
11 Permian, Sami, Samoyed, Khanty and Mansi).

12 Proto-Uralic is located in time between 5,000 and 8,000 BCE, geo-
13 graphically in the Northern Ural Mountains. Samoyed moved northeast
14 into Asia, while Ugric went south. Ugric split from Finnic some 3000
15 years ago. The oldest text is from the 12th century; it regards Hungarian.
16 A link between Uralic and Altaic has been proposed, as well as links to
17 IE, Dravidian, and to Eskimo-Aleut. The Uralic affiliation of Yukaghir is
18 controversial.

19 *StressTyp extracts*

20 Samoyed

21 **Nenets, Tundra [I]**

- 22 • Primary stress is initial.
- 23 • Secondary stress occurs on all syllables preceding a syllable with schwa.
- 24 • Secondary stress also falls on non-final syllables preceded by an
- 25 unstressed syllable.

26 'ya 'earth' 'wada 'word'

27 'xampol 'litter' 'xørørə 'knife poss. nom.sg'

28 **Taz Selkup (dialect of Selkup) [I/I]**

- 29 • Primary stress is initial, except when the first vowel is short and the
- 30 second is long.
- 31 • Secondary stress on odd syllables after the main stress.

32 'syrə 'snow' 'sy:re 'cow'

33 'otä,təki,ne 'reindeer.lat.dat.pl.' am'qe:ŋa 'is to take'

34 *Additional information*

35 The speakers of the three Samoyedic languages *Nenets (Yurak)*, *Nganasan*
36 and *Selkup* live scattered across vast areas of Northern and Central

1 Siberia. Of these only Nenets extends into Europe. It is spoken across a
 2 vast area stretching from the White Sea in European Russia to the delta
 3 of the Yenisei River in Asia. Décsy (1966) describes the position of accent
 4 in Nenets as follows: “Stress usually falls on one of the first, second, third,
 5 fifth, or seventh syllables”. Since he presents only two-syllable examples it
 6 is not quite clear how this description should be interpreted. It may be the
 7 case that primary accent in Nenets falls on either the first or the second
 8 syllable and that secondary accents fall on odd-numbered syllables follow-
 9 ing the primary accent. Another possible interpretation of Décsy’s state-
 10 ment is that the system is unbounded, accent location being dependent on
 11 syllable weight. Salminen (1998: 519–520), the source for StressTyp says
 12 that accent occurs initially, preceding a syllable with a schwa, or on a syl-
 13 lable preceded by an unstressed syllable; final syllables are never stressed.

14 The acoustic correlates of Nenets primary accent are analyzed in Kavitskaya (2006). As stated in StressTyp, Nenets accent is initial with some
 15 kind of alternating trochaic rhythm, but Kavitskaya reports that earlier
 16 descriptions provide other accounts, including statements about lexically
 17 marked accent and final accent. Kavitskaya restates the description given
 18 in StressTyp (which comes from Salminen 1998) as follows: if the schwa is
 19 initial it gets the accent. If it is non-initial it remains unpronounced unless
 20 it is followed by another schwa in which case it receives secondary accent.

21 Selkup has been referred to as a FIRST/FIRST system (e.g. Idsardi
 22 1992). That the position of accent cannot be entirely predicted from
 23 phonological factors appears from minimal pairs like: *téva* ‘tail, stern’
 24 and *tevá* ‘to reach’. According to Décsy, vowels in unaccented syllables
 25 are often pronounced “unclearly” (reduced, weakened). According to
 26 Helimski (1998b), Selkup accent is placed on the *last* long vowel, or in
 27 the absence of long vowels, on the first vowel. Exceptions are due to
 28 some suffixes that have short vowels that behave as if they are long; these
 29 attract stress unless followed by a long vowel (in accordance with the gen-
 30 eral rule). Other suffixes create a separate accentual domain so the general
 31 rules apply to this domain and the remainder of the word. There are also
 32 cases in which morphologically different words have different accentual
 33 patterns, but it is not clear what the relevant factors are. Kuznetsova et
 34 al. (1993) also suggest an LAST/FIRST analyses of Selkup, adding that
 35 accent is variable, and that sometimes words contain multiple accents.
 36 Gordon (2000) speculates that perhaps all heavy syllables have a degree
 37 of accent.

38 Nganasan, according to Helimski (1998a: 486), has primary accent on
 39 the penultimate vowel. If that vowel is high or /ə/ we can have a retraction
 40 to the antepenultimate syllable. Longer words (which are common) are

divided into ‘rhythmic bisyllabic groups’, the rightmost being possibly trisyllabic. This latter statement does not mean that the main stress in that case is antepenultimate.

- (13) kə:ri[gə:lji[tíni ‘in marches’
 kə:ri[gə:lji[tinínə ‘in my marches’
 kə:ri[gə:lji[ri:a[tinínə ‘only in my marches’

Note that primary stress is always PU. In the second and third example, the first vowel of the last rhythmic group is not lengthened. Hence, perhaps one must assume that in this case the last but final group is trisyllabic. However, Helimski says that the breaks between breath groups are clearly noticeable, creating the impression of a glottal stop.

Finno-Ugric: Ugric

Hungarian [I]

- Primary stress falls on the first syllable.
- Secondary stress usually on alternates after the primary stress.
- If the secondary stress would fall on a short vowel, the pattern might become ternary.
- In the latter case, secondary stress is also reported to avoid final syllables.

‘alma ‘apple’ ‘kɔpa:vɔl ‘with who’
 ‘teri:tɔ:vɛl ‘with tablecloth’ ‘fe:lɛ,mɛlɛ,tɛn ‘on mezzanine’

Mansi; Vogul [I]

- Primary stress falls on the first syllable.
- Secondary stress usually on alternates after the primary stress.
- Sources differ on whether the final syllable can be stressed or not.

‘ta:ratɪ ‘to leave, to let’ ‘ta:ra,tɔŋkwe ‘to leave, to let.inf.’

Additional information

The only Ugric language that is spoken in Europe is Hungarian, the other two members of the Ugric group, Khanty and Mansi, being spoken in Western Siberia. Hungarian is not only geographically far removed from the other two, but also linguistically. Proto-Obugrian probably had initial accent (Honti 1998: 332).

Primary accent in Hungarian is fixed on the initial syllable. According to Varga (1994: 234) a primary accented syllable has extra intensity and

bears an intonational pitch-accent. Secondary accented syllables also have extra intensity but are not linked to intonational accents. There is some controversy as to the position of secondary accent in Hungarian and some scholars deny it is there (cf. Siptár and Törkenczy 2000). Szinnyei (1912) and Lotz (1939) describe secondary accent as falling on the third and fifth syllable or (if the third syllable is light) on the fourth and sixth syllable, but never on the last syllable. This would be a pattern very close to that of Finnish. On the other hand, the system described by Balassa (1890), Hall (1938) and SöviJarvi (1956) is completely weight-insensitive with secondary accent on odd-numbered syllables following the primary initial accent. According to Hammond (1987) the non-primary accents are not all of equal intensity. He states that secondary and tertiary accents alternate, secondary accents occurring in odd-numbered non-initial feet. On this ground he postulates an intermediate level between the foot and word level in Hungarian, the so-called “cola” (sing. *colon*). In his examples odd-numbered syllables in final position do bear accent: *mégvesztègethètètlèneknek* ‘to unbriable (ones)’ (secondary accent is marked /[^]/, tertiary accent /[`]/). The difference in the descriptions may, according to Hayes (1995), represent a dialect split.

Matthews (1951: 22) says that in Ostyak (Khanty) accent is usually final.

Finno-Ugric: Finno-Permian: Permian

Yazva (dialect of Komi-Zyrian) [F/L]

- Stress on the first heavy vowel.
- Heavy syllables have low vowels. Weight of high vowels fluctuates.
- Words without heavy syllables have final stress.

Komi-Permyak [F/L]

- Stress falls on the first syllable with a long vowel.
- If there are no long vowels, stress is final.

Additional information

In proto-Permian accent was probably initial. Today, we find a difference between Udmurt (Votyak) and Zyrian-Permian.

In Udmurt (Votyak) words have final primary accent (except in certain grammatical forms), and sometimes a secondary accent on the first syllable: *kòrkajosm* ‘our room’. This, for a Finno-Ugric language unusual,

1 accentual pattern may be explained as caused by the influence of Turkic
 2 languages, especially Tatar. Both Tatar and Votyak also have initial stress
 3 in the imperative form of the verb. Csúcs (1998: 280–281) adds that initial
 4 stress is also found in negative verb forms, as well as reduplicative adjectives
 5 and adverbs.

6 With respect to Zyrian-Permian, according to Riese (1998) sometimes a
 7 political or administrative distinction is made between Komi-Zyrian and
 8 Komi-Permyak, but this difference, he says, represents a minor dialectal
 9 difference. Below we see that some differences in accent location do appear
 10 to exist.

11 The Yaz'va dialect of the Eastern Permic language Komi-Zyran is an
 12 example of an unbounded weight-sensitive FIRST/LAST system. Accent
 13 falls on the leftmost heavy syllable, and if there is no heavy syllable on
 14 the rightmost syllable. The notion weight is rather complex in Komi-
 15 Zyran, however. The non-high vowels a, e, ö and o are always accented,
 16 while the accent-behavior of the vowels i, ü and u depends the origin;
 17 some of these used to be non-high and they continue to behave so.
 18 Hausenberg (1998: 310–311) remarks that in Komi-Zyrian accent is
 19 free (variable) although there is a slight (pitch-based) prominence on
 20 the first syllable. In southern Komi-Zyrian accent, he says, is partially
 21 'morpheme-bound'. Gordon (2000) interprets Hausenberg's (1998) claim
 22 that all heavy syllables are stressed as saying that heavy syllables that are
 23 not primary accented have secondary accent. He also says that accent can
 24 be called morphological: accent never falls on inflectional suffixes, whereas
 25 certain derivational suffixes are always accented.

26 In western Permyac, or Komi-Permyac, there are certain dialects which
 27 resemble the Zyran system, but there are also dialects which have a completely
 28 different type of accentuation. In these dialects the position of
 29 the accent cannot be predicted by phonological rules only but is partly
 30 morphological. Accent always occurs on the stem, suffixes are never
 31 accented. Thus, minimal pairs can occur, like *juán* 'a drink' vs. *júan* 'you
 32 drink' (Itkonen 1955).

33
 34 Finno-Ugric: Finno-Permian: Finnic

35 **Mari, High; Mountain (Western) Cheremis [L/L or P/P]**

- 36 • Sources differ. Some quote stress is penult except when the antepenulti-
- 37 mate vowel is full and the penult is not. Others quote stress occurs on
- 38 the last non-final long vowel or the penultimate syllable.
- 39
- 40

- Examples point in the direction of the latter.

aa'βaaxaa 'pod' 'əftäʃ 'to sweep'
 'kaaŋeser 'sorrow' βʌlaa'ʎaanešteše 'comedian'

Mari, Low; Meadow (Eastern) Cheremis [L/F;IRR]

- Stress the last full vowel, and the first in words with only reduced vowels.
- Free variation of final and non-final stress reported.

ʃlaa'paaʒəm or ʃlaapaa'ʒəm 'his hat.acc'
 'tələʒən or tələ'zən 'moon.gen'
 'pügəlmö or pügəl'mö 'cone'
 'βoʃtəl 'laugh' βoʃtə'lam 'I laugh'

Moksha; Mordvin; Mordva [F/F]

- Stress the first full vowel, and the first in words with only reduced vowels.
- Free variation of final and non-final stress reported.

tu'c'än'jä 'cloud' 'puvəndəms 'to press'

Additional information

The accent systems of both Mordvin and Mari (Cheremis) are described by Kenstowicz (1994). The Mokshan dialect of Mordvin has two groups of vowels that behave differently with respect to accent: the 'narrow' vowels /i u ə/ and the 'wide' vowels /e o ä a/. According to Tsygankin and Dabaev (1975: 32–33) wide vowels attract word accent, i.e. they function as heavy syllables for the purpose of accent assignment. Accent falls on the first syllable containing a wide vowel. In words with only narrow or only wide vowels accent falls on the initial syllable: *tuc^{jä}n'jä* 'cloud', *púvəndəms* 'to press'. The Mokshan system is thus an example of an unbounded weight-sensitive FIRST/FIRST system. Just like in Komi, weight is determined by vowel quality rather than quantity. It is interesting to note that the Erzyan dialect of Mordvin does not distinguish between heavy and light syllables but simply has fixed initial accent. Zaicz (1998: 190–191) says that stress in the Erzya dialect of Mordva is 'free and non-distinctive' which means that in any given word any syllable can be given 'accentual prominence'; unstressed vowels are not reduced. This being said, first syllable stress is said to be quite common.

In Mari, a sister language of Mordvin, the position of accent is also

1 conditioned by vowel quality. Mari distinguishes full and reduced vowels,
 2 full vowels acting as heavy for the purpose of accent-assignment. In
 3 Literary Mari accent falls on the last full vowel and in words with only
 4 reduced vowels on the initial syllable. Literary Mari is thus an example
 5 of an unbounded weight-sensitive LAST/FIRST system, the mirror image
 6 of Komi. One complicating factor in Literary Mari is that final open
 7 syllables are never accented. We must assume that these are extrametrical.

8 Generally, two Mari dialects are distinguished: Western (Hill) Mari
 9 and Eastern (Meadow) Mari (Kangasmaa-Minn 1998: 224). The Literary
 10 dialect has the western accentual pattern, i.e. it has a LAST/FIRST
 11 system sensitive to the difference between full vowels and reduced vowels
 12 (\hat{a} is a reduced vowel):

13 (14) *olmá* ‘apple’ *múnâ* ‘egg’ *têlâzê-m* ‘moon’
 14

15 Eastern Mari has a different rule: accent is PU even if the PU vowel is
 16 reduced. If, however, the vowel preceding the PU reduced vowel is full,
 17 accent may occur on the APU. These characterizations of the western
 18 and eastern dialect.

19 Northwest Mari has been described in Ivanov and Tuzharov (1970)
 20 who say that accent falls on the rightmost non-final heavy syllable (sylla-
 21 bles with a full vowel). In all light words, accent falls on the first syllable if
 22 the non-full vowel is unrounded, but on the first or second syllable if the
 23 first vowel is unrounded (cf. Kenstowicz 1994). Ivanov and Tuzharov
 24 add that this L/F pattern is consistently present in words, uttered in isola-
 25 tion. Words that are embedded in larger utterances show a preference for
 26 penultimate accent. Gordon (2000) suggests that the default initial accent
 27 is an intonational effect, assuming that the fundamental frequency at the
 28 beginning of an utterance will start high and then decline.

29 Hayes (1995: 297) lists Western Mari (Cheremis) as an example of
 30 a LAST/LAST system with final extrametrical syllables; this analysis is
 31 adopted in StressTyp. Examples like *tUvÚrgaš* ‘to curdle’, in which accent
 32 falls on the last syllable if one disregards the extrametrical final syllable.
 33 However, examples like *mUrÚktUlaš* ‘to thunder’ show that it is the
 34 second not the last syllable that is accented. Moreover, examples with
 35 the unrounded reduced vowel /i/ show that accent may fall on either the
 36 initial or the second syllable: *tsItIträš* ~ *tsĪtIträš* ‘to shake-REFL’. Hence,
 37 it would seem possible to classify Northwestern Mari as another example
 38 of a FIRST/FIRST system, albeit with some complications. With three
 39 competing analyses (F/L, L/L and F/F) it would seem that the proper
 40 analysis of the Western dialect is not available.

Above, I quoted Kangasmaa-Minn (1998: 224) who mentions final accent for the eastern dialect. This could be due to influence of Tatar (Itkonen 1955). Eastern Mari has also been described as a L/F pattern in Sebeok and Ingemann (1961) (who say that this pattern varies freely with a weight-insensitive final accent). But Ristinen (1960) finds that the default initial accent is not present in medial contexts.

Gordon (2000) offers a discussion of Northwest Mari and Eastern Mari, both described as L/F systems.

Finno-Ugric: Finno-Permic: Finnic: Finno-Mordvinic: Finno-Lappic

Ruija (dialect of Northern Saami) [I]

- Primary stress is initial.
- Secondary stress on odd non-final syllables.
- A weak final secondary stress may occur in trisyllables.

'bātta,raddat 'to fly continually'

'gapperist or 'gappe,ríst 'in the cup'

Finnish [I]

- Primary stress falls on the first syllable.
- Secondary stress usually on alternates after the primary stress, but never final.

'lope,teta 'finish[neg.]'

'teuras,tamo 'slaughterhouse'

'opet,tele,manani 'as something I have been learning'

Estonian [I]

- Primary stress falls on the first syllable, exceptions are rare.
- Secondary stress usually on alternates after the primary stress.
- If the secondary stress would fall on a short vowel, the pattern might become ternary.

'sada 'hundred' 'suletud 'closed'

'kahekesi 'together, two at a time'

Karelian [I]

- Primary stress falls on the first syllable.
- Secondary stress usually on alternates after the primary stress, but never final.
- In some cases the secondary stress pattern is reported to be ternary.

Liv; Livonian [I]

- Primary stress falls on the first syllable.
- Secondary stress occurs on the third syllable, tertiary stress on the fifth (if present).

Vod; Votic [I]

- Primary stress is initial.
- Secondary stress on odd syllables after the main stress, but not on case suffixes.

'suva:mi:n 'loving' 'tüt:ä,ri:k:o 'girl'

Additional information

All languages in the Balto-Finnic group have fixed initial accent. When it comes to secondary accent, however, there are a number of differences. In Estonian secondary accents in words that do not contain an 'overlong syllable' "are assigned iteratively from left to right at intervals of two or three syllables" (Hayes, 1995: 317). Whether these intervals consist of two or three syllables depends on the weight of the second syllable. If this syllable is heavy (i.e. is closed and/or contains a long vowel) it is accented: *párimätteltt* (**párimattèltt*), if it is light (i.e. CV) secondary accent may optionally go to the third syllable, causing a ternary rhythm: *téravàmaltt* ~ *téravamàltt*. However, final syllables can only bear secondary accent if they contain a long vowel or are closed by at least two consonants. Thus, CV and CVC syllables never bear accent in word-final position: **ósavamà*. The fact that CVC syllables behave like CV syllables in final position, whereas they pattern with the heavy syllables word-medially points to final consonant extrametricality in Estonian. The Estonian accent system is considerably complicated by the phenomenon of overlength. Overlength is analysed by Harms (1962: 11–12) as a type of "postponed" accent, which occurs only on long syllables and is accompanied by lengthening of the already long syllable. Prince (1980), based on Hint (1973) focuses on the nature of overlength in Estonian, presenting a metrical analysis, as does Hayes (1995). A detailed description is beyond the scope of this chapter.

The accent system of Finnish resembles that of Estonian, but there are some differences. Firstly, Finnish has no overlength, which makes the Finnish system less complex than the Estonian system. Secondly, ternary rhythm in Finnish only occurs when the second syllable following an accented syllable is light and is followed by a heavy syllable, in which case it is not optional but obligatory: *rákastunèita* (**rákastùneita*) 'infa-

1 tuated lovers'. When the second syllable following an accented syllable
 2 is followed by a light syllable there is always binary rhythm, irrespective
 3 of whether or not the second syllable is heavy: *ópiskèlija* (**ópiskeli**ja*)
 4 'student'. Like Estonian, Finnish does not allow secondary accent on final
 5 CV or CVC syllables, which indicates that Finnish, too, has final con-
 6 sonant extrametricality.

7 Of the other Balto-Finnic languages, Karelian apparently has a system
 8 which is in between Finnish and Estonian. Like Finnish, it does not have
 9 overlength but a ternary rhythm appears to be optional, like in Estonian.
 10 The (nearly) extinct language Votian appears to have secondary accents
 11 on odd-numbered syllables. Also, final syllables can take secondary accent
 12 irrespective of whether they are heavy or light, except for case suffixes,
 13 which are never accented. Livonian is reported to have primary accent on
 14 the first, secondary accent on the second, and tertiary accent on the fifth
 15 syllable. Final odd-numbered syllables carry accent, independent of their
 16 weight.

17 Central Norwegian Lappish (Northern Saami) has initial primary
 18 accent. Secondary accent occurs on odd-numbered syllables. Although a
 19 secondary accent has been reported on the third and final syllable of trisyl-
 20 labic words, it does not seem to occur on the final syllable of five-syllable
 21 words. Sammallahti (1998: 52–53) says that words are divided in stress
 22 group consisting of a stressed syllable followed by one or two (rarely
 23 three) unstressed syllables.

24 Discussing the Finnic language group in general, Viitso (1998b: 104–
 25 105) mentions the fact that the first secondary stress, while regularly being
 26 on the third syllable since rhythm alternates in a trochaic fashion away
 27 from the initial primary accent, sometimes ends up on the fourth syllable,
 28 for example when the third vowel is short and the fourth is long. We saw
 29 this pattern described above. It is also mentioned that some suffixes attract
 30 the secondary stress, but the examples given seem to involve a long vowel
 31 in the fourth syllable (or is it lengthened due to stress?). Also the first
 32 secondary stress can end up on the second syllable due to deletion of a
 33 second syllable, although in that case the first syllable ends up as VVC
 34 ('superheavy') which may imply that a secondary stress on the second
 35 syllable is rhythmically wellformed. Epenthesis of a vowel may also cause
 36 secondary stress to be on the fourth syllable, but again, in the example
 37 given, the fourth vowel is long, the third being short. Also see Viitso
 38 (1998a: 119) on Estonian accent.

1 *Generalizations*

2 It seems clear at least that initial accent is the unmarked option in the
3 Finno-Ugric languages. Due to lack of data on the Samoyedic accent sys-
4 tems it is not clear if initial accent plays an equally important role there.
5 Primary accent in the Finno-Ugric languages is either weight-insensitive
6 or sensitive only to vowel quality (except in some Permic dialects). Sec-
7 ondary accent, which occurs only in the languages with weight-insensitive
8 primary accent, may be sensitive to vowel length and syllable closure.

9 According to Sammallahti (1987) primary stress was on the first sylla-
10 ble in Proto-Uralic as in most present-day Uralic languages. Secondary
11 stress fell on non-final odd-numbered syllables. Through vowel reduction
12 and an accompanying rejection of stress by these reduced vowels, the
13 unbounded systems of the Volga region (Mordvin, Cheremis) came into
14 being. Bereczki (1987) suggests that the LAST/FIRST system of Cheremis
15 originated through the influence of the Turkic language Chuvash.

16 Abondolo (1998: 9) makes the following general statement: word stress
17 is initial in most Uralic languages. Exceptions to this general rule are
18 found in a belt of west-central languages (Moksha Mordva, Mari and all
19 of Permian except Komi) and in Samoyedic. In West Mari and Nganasan
20 the location is penultimate, in Udmurt it is final. In Permiak its location is
21 dependent on morphology, while in Moksha Mordva and Tundra Nenets
22 it refers to vowel sonority or vowel fullness. In Selkup both phonological
23 and morphological factors play a role.
24

25 4.6. *Etruscan (Isolate)*

26 *Genetic information: Isolate*

27 *Accent information*

28 Etruscan is attested from 700 BC to 50 AD through some 9000 to 10,000
29 inscriptions. Accent was on the initial syllable in native words, except that
30 demonstrative pronouns (because of their use as enclitics) had final accent.
31 Loan words had accent on the last long vowel; since Etruscan did not
32 have vowel length distinctions, the long vowels were interpreted as being
33 accented (Rix 2004). Gabor Z. Bodroghy (website URL <http://users.tpg.com.au/etr/etrusk/tex/develop.html>) reports that the loss of vowels in
34 non-initial syllables was due to an 'intensive stress accent which around
35 5000 BCE affected Etruscan as well as other languages of Italy'.
36
37
38
39
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5. Generalizations and conclusions

Van der Hulst, Hendriks and van de Weijer (1999) which also offers an overview of word accentual systems in the languages of Europe concludes with tables which displays the variety of accentual types and with maps which show the geographical distribution of these types. In this chapter I will not repeat that information. The preceding more extensive overview confirms the general fact that the European area contains all conceivable types of word accent, ranging from bounded to unbounded systems, from weight-insensitive to weight-sensitive systems and from stress-accent to pitch-accent systems. Although languages can be grouped in such broad types, most languages display specific properties which make them, in a sense, unique. Needless to say that much more information and analysis is required for most if not all languages reviewed here, and many others which we have not discussed at all. Deeper analysis must take into account the intricate relationships that exist between accent placement and morphological structure. The characterizations given here are broad, and possibly wrong, but it is hoped that this survey will nonetheless serve the purpose of sparking further research in this area.

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