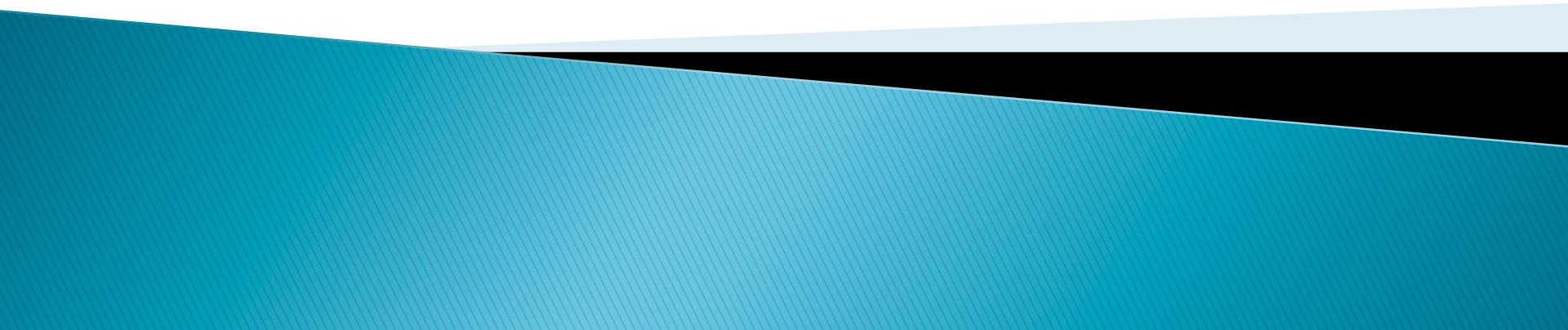


German



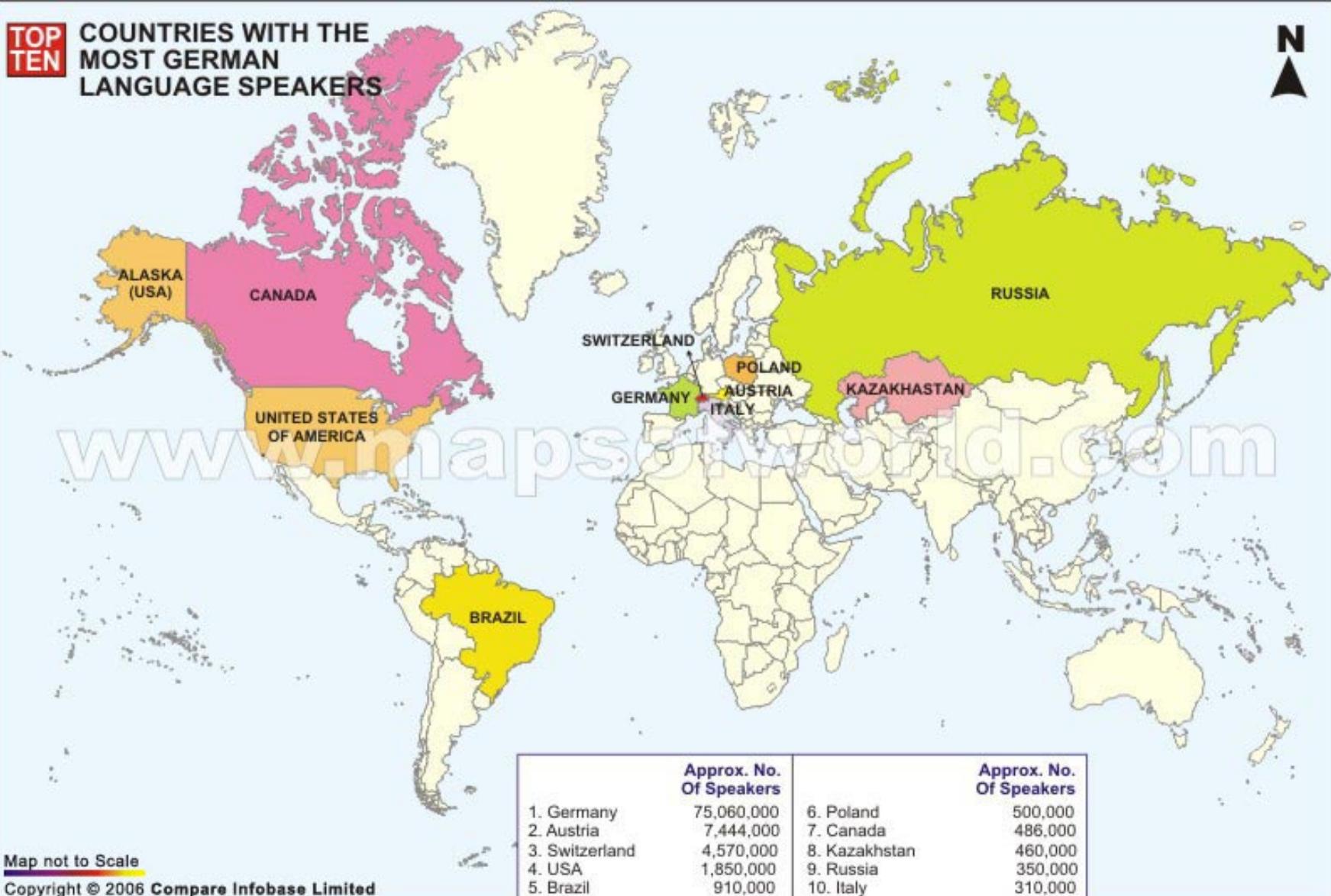
Background and history

- ▶ Early German
 - Dates back to as early as the 6th century
 - Started with old high German, as it split from Old Saxon
- ▶ Modern German
 - Started out as a purely written language
 - Became standardized in both written and spoken forms in 1901
 - Written spelling was reformed in 1996
- ▶ Most widely spoken first language in the EU

German Geography

TOP
TEN

COUNTRIES WITH THE
MOST GERMAN
LANGUAGE SPEAKERS



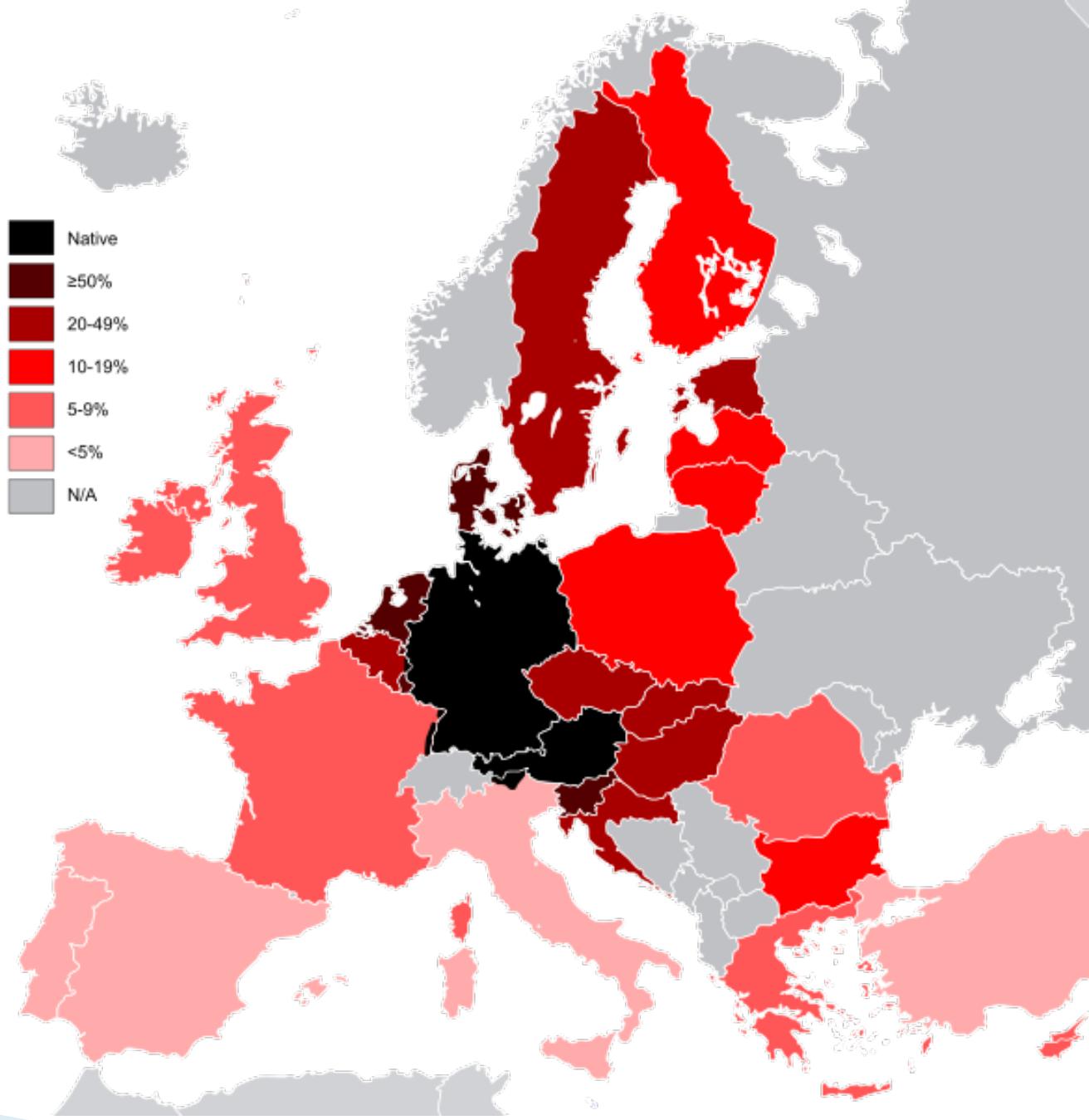
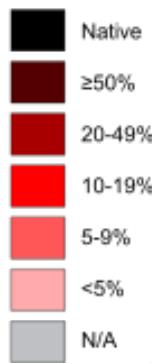
Map not to Scale

Copyright © 2006 Compare Infobase Limited



Nations where German is spoken

- Orange: Official language
- Yellow: Widely spoken and understood and/or National language
- Red: Spoken in a regional level
- Light Blue: Spoken in a limited area



German Dialects

- ▶ Complex variation between dialects
- ▶ All German dialects belong to the dialect continuum of High German and Low Saxon
- ▶ Low German
 - Less common, not often spoken
 - Maintained by some newspapers in northern Germany
- ▶ High German
 - Various different branches
 - Yiddish is the only one that doesn't use Latin script

Orthography

- ▶ 26 standard Latin letters
- ▶ German has three vowels with Umlaut
 - ä, ö and ü,
 - (ae, oe and ue)
- ▶ Eszett or *scharfes s* (sharp s), ß

A B C D E F G H I J K L
M N O P Q R S T U V W
X Y Z Ä Ö Ü
a b c d e f g h i j k l m
n o p q r s t u v w x y z
ä ö ü ßß
Qu qu St st ßz sch

Grammatical elements

- ▶ Declension of nouns and adjectives
 - nominative(Nominativ/Werfall)
 - genitive (Genitiv/Wesfall)
 - dative (Dativ/Wemfall)
 - accusative (Akkusativ/Wenfall)
- ▶ Gender
 - Masculine
 - Feminine
 - Neuter
- ▶ Numerical representations
 - Singular and plural
- ▶ Verb tenses
 - Present and present perfect
 - Simple past and past perfect
 - Future and future perfect
- ▶ Lack of auxiliary verb in negation and question

Ich kenne dich nicht.

I know you not.

Willst du ein Eis?

Want you ice-cream?

Compound words

- ▶ Long concatenation of words
- ▶ The last word that determines the word type
- ▶ The last noun of the compound word determines its gender
- ▶ Types:
 - Noun + noun (*der Müllheimer*/ the garbage pail)
Adjective + noun (*die Großeltern*/ grandparents)
Noun + adjective (*luftleer*/ airless)
 - Verb stem + noun (*die Waschmaschine*/ washing machine)
 - Preposition + noun (*der Vorort*/ suburb)
 - Preposition + verb (*runterspringen*/ to jump down)
 - Adjective + adjective (*hellblau*/ light blue)

Word order

- ▶ Normal affirmative sentences
 - The inflected verb always has position 2
- ▶ Polar questions, exclamations, and wishes
 - The inflected verb always has position 1
- ▶ Subordinate clauses
 - The verb occurs at the very end (not always in speech)
- ▶ Main verb or auxiliary verb
 - Always appear second in the sentence
 - With auxiliary, main goes to end of sentence
 - Preceded by the topic
 - The element in focus is at the end

Linguistic data/resources

- ▶ COSMAS Corpus
 - Over a billion words, online-searchable German and Austrian corpora
- ▶ NEGRA Corpus
 - Saarland University Syntactically Annotated Corpus of German Newspaper Texts
- ▶ QTAG Part of speech tagger for German
- ▶ 2nd largest number of Wikipedia pages (1355000 pages)
- ▶ Europarl German–English parallel corpus

German and MT

- ▶ Difficulties:
 - Different syntactic structure at the clause level
 - Rich German morphology
 - Specific problems with compound words
- ▶ Progress:
 - Lots of work on German due to its popularity/
relation to English
 - As early as 1972 from UT
 - Many MT systems now exist for German including
Google translate

- ▶ Sources:
 - Statistical Machine Translation of German Compound Words, Maja Popović, Daniel Stein, Hermann Ney
 - Durrell, Martin; Hammer, A.E. (2002), *Hammer's German Grammar and Usage* (Fourth ed.)
 - Towards better Machine Translation Quality for the German–English Language Pairs, Philipp Koehn Abhishek Arun Hieu Hoan
 - Development of German–English machine translation system:
<http://www.dtic.mil/dtic/tr/fulltext/u2/743319.pdf>
 - http://en.wikipedia.org/wiki/German_language
 - http://en.wikipedia.org/wiki/German_grammar
 - European Parliament Proceedings Parallel Corpus 1996–2011,
<http://www.statmt.org/europarl/>
 - Statistical natural language processing and corpus-based computational linguistics: An annotated list of resources, <http://nlp.stanford.edu/links/statnlp.html>