

# Package ‘lingtypology’

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**Type** Package

**Title** Linguistic Typology and Mapping

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**Depends** R (>= 3.1.0)

**Imports** leaflet,  
leaflet.minicharts,  
stats,  
utils,  
stringdist,  
magrittr,  
grDevices,  
rowr,  
MASS,  
sp

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**Description** Provides R with the Glottolog database <<http://glottolog.org>> and some more abilities for purposes of linguistic mapping. The Glottolog database contains the catalogue of languages of the world. This package helps researchers to make a linguistic maps, using philosophy of the Cross-Linguistic Linked Data project <<http://clld.org/>>, which allows for while at the same time facilitating uniform access to the data across publications. A tutorial for this package is available on GitHub pages <<https://ropensci.github.io/lingtypology/>> and package vignette. Maps created by this package can be used both for the investigation and linguistic teaching. In addition, package provides an ability to download data from typological databases such as WALS, AUTOTYP and others.

**License** GPL (>= 2)

**URL** <https://CRAN.R-project.org/package=lingtypology>, <https://github.com/ropensci/lingtypology/>

**BugReports** <https://github.com/ropensci/lingtypology/issues>

**LazyData** TRUE

**RoxygenNote** 6.0.1

**Suggests** knitr,  
rmarkdown,  
testthat,  
covr

**VignetteBuilder** knitr

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abvd	<i>ABVD's Language identifiers</i>
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---

### Description

Language identifiers from ABVD (<https://abvd.shh.mpg.de/austronesian/>). This dataset is created for [abvd.feature](#) function.

### Usage

```
abvd
```

### Format

A data frame with 1468 rows and 2 variables:

**id** language identifier

**glottocode** Glottocode

---

abvd.feature	<i>Download ABVD data</i>
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---

### Description

This function downloads data from ABVD (<https://abvd.shh.mpg.de/austronesian/>) and changes language names to the names from lingtypology database. You need the internet connection.

### Usage

```
abvd.feature(feature, glottolog.source = "modified")
```

### Arguments

**feature** A character vector that define a language id from ABVD (e. g. "1", "292").

**glottolog.source** A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

### Author(s)

George Moroz <[agricolamz@gmail.com](mailto:agricolamz@gmail.com)>

### See Also

[afbo.feature](#), [autotyp.feature](#), [phoible.feature](#), [sails.feature](#), [wals.feature](#)

**Examples**

```
# abvd.feature(c(292, 7))
```

---

afbo.feature

*Download AfBo data*


---

**Description**

This function downloads data from AfBo (<http://afbo.info>) and changes language names to the names from lingtypology database. You need the internet connection.

**Usage**

```
afbo.feature(features = "all", na.rm = TRUE,
             glottolog.source = "modified")
```

**Arguments**

features	A character vector that define with an affix functions from AfBo (e. g. "all", "adjectivizer", "focus").
na.rm	Logical. If TRUE function removes all languages not available in lingtypology database. By default is TRUE.
glottolog.source	A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <[agricolamz@gmail.com](mailto:agricolamz@gmail.com)>

**See Also**

[autotyp.feature](#), [phoible.feature](#), [sails.feature](#), [wals.feature](#)

**Examples**

```
# afbo.feature()
# afbo.feature(c("adjectivizer", "adverbializer"))
```

---

aff.lang	<i>Get affiliation by language</i>
----------	------------------------------------

---

**Description**

Takes any vector of languages and return affiliation.

**Usage**

```
aff.lang(x, glottolog.source = "modified")
```

**Arguments**

x	A character vector of the languages (can be written in lower case)
glottolog.source	A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[area.lang](#), [country.lang](#), [iso.lang](#), [lat.lang](#), [long.lang](#)

**Examples**

```
aff.lang('Korean')  
aff.lang(c('Korean', 'Polish'))
```

---

area.lang	<i>Get macro area by language</i>
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---

**Description**

Takes any vector of languages and return macro area.

**Usage**

```
area.lang(x, glottolog.source = "modified")
```

**Arguments**

x	character vector of the languages (can be written in lower case)
glottolog.source	A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[aff.lang](#), [country.lang](#), [iso.lang](#), [lat.lang](#), [long.lang](#)

**Examples**

```
area.lang('Adyghe')  
area.lang(c('Adyghe', 'Aduge'))
```

---

autotyp

*AUTOTYP's Language identifiers*

---

**Description**

Language identifiers from AUTOTYP v. 0.1.0 (<https://github.com/autotyp/autotyp-data>).  
This dataset is created for [autotyp.feature](#) function.

**Usage**

```
autotyp
```

**Format**

An object of class `data.frame` with 2950 rows and 2 columns.

**Details**

#' @format A data frame with 2950 rows and 2 variables:

**LID** language identifier

**Glottocode** Glottocode

---

autotyp.feature	<i>Download AUTOTYP data</i>
-----------------	------------------------------

---

## Description

This function downloads data from AUTOTYP (<https://github.com/autotyp/autotyp-data#the-autotyp-database>) and changes language names to the names from lingtypology database. You need the internet connection.

## Usage

```
autotyp.feature(features, na.rm = TRUE, glottolog.source = "modified")
```

## Arguments

features	A character vector that define with a feature names from AUTOTYP.
na.rm	Logical. If TRUE function removes all languages not available in lingtypology database. By default is TRUE.
glottolog.source	A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

## Author(s)

George Moroz <[agricolamz@gmail.com](mailto:agricolamz@gmail.com)>

## See Also

[afbo.feature](#), [phoible.feature](#), [sails.feature](#), [wals.feature](#)

## Examples

```
# autotyp.feature(c('Gender', 'Numeral classifiers'))
```

---

circassian	<i>Circassian villages in Russia</i>
------------	--------------------------------------

---

## Description

A dataset contains the list of the Circassian villages in Russia with genealogical affiliation, coordinates and district names. Most data collected during the fieldworks (2011–2016).

## Usage

```
circassian
```

**Format**

A data frame with 157 rows and 6 variables:

**longitude** longitude

**latitude** latitude

**village** name of the village

**district** names of the subjects of the Russian Federation: kbr — Kabardino–Balkar Republic, kch — Karachay–Cherkess Republic, kk — Krasnodar Krai, ra — Republic of Adygea, stv — Stavropol Krai

**dialect** names of the Circassian dialects

**language** according standard Circassian deviation there are Adyghe and Kabardian languages

---

countries

*Catalogue of countries names.*

---

**Description**

Catalogue of countries names.

**Usage**

countries

**Format**

A data frame with 86 rows and 3 variables:

**common** common name

**official** official name

**abbreviation** abbreviated name

**official\_languages** official languages from the given country



---

country.lang	<i>Get country by language</i>
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---

**Description**

Takes any vector of languages and return affiliation.

**Usage**

```
country.lang(x, intersection = FALSE, glottolog.source = "modified")
```

**Arguments**

x	character vector of the languages (can be written in lower case)
intersection	logical. If TRUE, function returns vector of countries, where all languages from x argument are spoken.
glottolog.source	A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[aff.lang](#), [area.lang](#), [iso.lang](#), [lat.lang](#), [long.lang](#)

**Examples**

```
country.lang('Udi')
country.lang(c('Udi', 'Laz'))
country.lang(c('Udi', 'Laz'), intersection = TRUE)
```

---

ejective_and_n_consonants	<i>Number of consonants and presence of ejectives</i>
---------------------------	---

---

**Description**

Number of consonants and presence of ejectives

**Usage**

```
ejective_and_n_consonants
```

**Format**

A data frame with 19 rows and 4 variables:

**language** language name

**consonants** number of consonants. Based on UPSID database.

**vowels** number of vowels. Based on UPSID database.

**ejectives** presence of ejective sounds

---

glottolog.modified      *Catalogue of languages of the world*

---

**Description**

A dataset contains the modified catalogue of languages of the world involving genealogical affiliation, macro-area, country, iso code, and coordinates.

**Usage**

glottolog.modified

**Format**

A data frame with 8566 rows and 7 variables:

**language** name of the language

**iso** code based on ISO 639–3 <http://www-01.sil.org/iso639-3/>

**glottocode** languoid code from Glottolog 2.7

**longitude** longitude

**latitude** latitude

**affiliation** genealogical affiliation

**area** have six values Africa, Australia, Eurasia, North America, Papunesia, South America

**alternate names** alternative language names

**affiliation-HH** some additional source for affiliation

**country** list of countries, where the language is spoken

**dialects** dialects of language

**language status** language status. In glottolog.modified comments are removed. In glottolog.original they are reserved. Have 14 categories: 1 (National); 2 (Provincial); 3 (Wider communication); 4 (Educational); 5 (Developing); 6a (Vigorous); 6b (Threatened); 7 (Shifting); 8a (Moribund); 8b (Nearly extinct); 8b (Reintroduced); 9 (Dormant); 9 (Second language only); 10 (Extinct)

**language use** language use

**location** location

**population numeric** pure population info

**typology** some information from WALS

**writing** information about writing system

## Details

Glottolog 2.7. Hammarstrom, Harald & Forkel, Robert & Haspelmath, Martin & Bank, Sebastian. 2016. Max Planck Institute for the Science of Human History. Accessed on 2016-06-15.

---

glottolog.original      *Catalogue of languages of the world*

---

## Description

A dataset contains the original catalogue of languages of the world involving genealogical affiliation, macro-area, country, iso code, and coordinates.

## Usage

glottolog.original

## Format

A data frame with 8566 rows and 7 variables:

**language** name of the language

**iso** code based on ISO 639-3 <http://www-01.sil.org/iso639-3/>

**glottocode** languoid code from Glottolog 2.7

**longitude** longitude

**latitude** latitude

**affiliation** genealogical affiliation

**area** have six values Africa, Australia, Eurasia, North America, Papunesia, South America

**alternate names** alternative language names

**affiliation-HH** some additional source for affiliation

**country** list of countries, where the language is spoken

**dialects** dialects of language

**language status** language status. In glottolog.modified comments are removed. In glottolog.original they are reserved. Have 14 categories: 1 (Natioanl); 2 (Provincial); 3 (Wider communication); 4 (Educational); 5 (Developing); 6a (Vigorous); 6b (Threatened); 7 (Shifting); 8a (Moribund); 8b (Nearly extinct); 8b (Reintroduced); 9 (Dormant); 9 (Second language only); 10 (Extinct)

**language use** language use

**location** location

**population numeric** pure population info

**typology** some information form WALS

**writing** information about writing system

**Details**

Glottolog 2.7. Hammarstrom, Harald & Forkel, Robert & Haspelmath, Martin & Bank, Sebastian. 2016. Max Planck Institute for the Science of Human History. Accessed on 2016-06-15.

**Source**

<http://glottolog.org/>

---

gltc.iso

*Get Glottocode by ISO 639-3 code*

---

**Description**

Takes any vector of ISO 639-3 codes and returns Glottocodes.

**Usage**

```
gltc.iso(x, glottolog.source = "modified")
```

**Arguments**

x	A character vector of the Glottocodes.
glottolog.source	A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[aff.lang](#), [area.lang](#), [country.lang](#), [lat.lang](#), [long.lang](#)

**Examples**

```
gltc.iso('ady')  
gltc.iso(c('ady', 'rus'))
```

---

gltc.lang

*Get Glottocode by language*


---

**Description**

Takes any vector of languages and returns Glottocode.

**Usage**

```
gltc.lang(x, glottolog.source = "modified")
```

**Arguments**

**x** A character vector of the languages (can be written in lower case)

**glottolog.source** A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[aff.lang](#), [area.lang](#), [country.lang](#), [lat.lang](#), [long.lang](#)

**Examples**

```
gltc.lang('Adyghe')
gltc.lang(c('Adyghe', 'Udi'))
```

---

is.glottolog

*Are these languages in glottolog?*


---

**Description**

Takes any vector of languages or ISO codes and return a logical vector.

**Usage**

```
is.glottolog(x, response = FALSE, glottolog.source = "modified")
```

**Arguments**

`x` A character vector of languages (can be written in lower case) or ISO codes

`response` logical. If TRUE, when language is absent, return warnings with a possible candidates.

`glottolog.source` A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**Examples**

```
is.glottolog(c('Adyghe', 'Russian'))
is.glottolog('Buyaka')

# Add warning message with suggestions
is.glottolog(c('Adygey', 'Russian'), response = TRUE)
# > FALSE TRUE
# Warning message:
# In is.glottolog(c('Adyge', 'Russian'), response = TRUE) :
# Language Adyge is absent in our version of the Glottolog database. Did you mean Aduge, Adyghe?
```

---

iso.gltc

*Get ISO 639-3 code by Glottocode*

---

**Description**

Takes any vector of Glotocodes and returns ISO code.

**Usage**

```
iso.gltc(x, glottolog.source = "modified")
```

**Arguments**

`x` A character vector of Glottocodes.

`glottolog.source` A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[aff.lang](#), [area.lang](#), [country.lang](#), [lat.lang](#), [long.lang](#)

**Examples**

```
iso.gltc('adyg1241')
iso.gltc(c('adyg1241', 'udii1243'))
```

---

iso.lang

*Get ISO 639–3 code by language*

---

**Description**

Takes any vector of languages and returns ISO code.

**Usage**

```
iso.lang(x, glottolog.source = "modified")
```

**Arguments**

**x** A character vector of the languages (can be written in lower case)

**glottolog.source** A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[aff.lang](#), [area.lang](#), [country.lang](#), [lat.lang](#), [long.lang](#)

**Examples**

```
iso.lang('Adyghe')
iso.lang(c('Adyghe', 'Udi'))
```

---

lang.aff	<i>Get languages by affiliation</i>
----------	-------------------------------------

---

**Description**

Takes any vector of affiliations and return languages.

**Usage**

```
lang.aff(x, list = FALSE, glottolog.source = "modified")
```

**Arguments**

x	A character vector of the affiliations (can be written in lower case)
list	logical. If TRUE, returns a list of languages, if FALSE return a named vector.
glottolog.source	A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[lang.country](#), [lang.iso](#)

**Examples**

```
lang.aff('Slavic')
lang.aff(c('Slavic', 'Celtic'))
lang.aff(c('Slavic', 'Celtic'), list = TRUE)
```

---

lang.country	<i>Get languages by country</i>
--------------	---------------------------------

---

**Description**

Takes any vector of countries and return languages.

**Usage**

```
lang.country(x, list = FALSE, official = FALSE,
  glottolog.source = "modified")
```



**Arguments**

x	character vector of the countries (can be written in lower case)
list	logical. If TRUE, returns a list of languages, if FALSE return a vector.
official	logical. If TRUE, returns a vector of official languages, if FALSE return a vector from Glottolog database.
glottolog.source	A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[lang.aff](#), [lang.iso](#)

**Examples**

```
lang.country('North Korea')
lang.country(c('North Korea', 'Luxembourg'))
lang.country(c('North Korea', 'Luxembourg'), list = TRUE)
lang.country(c('Germany', 'Luxembourg'), official = TRUE)
```

---

lang.gltc

---

*Get language by Glottocode*


---

**Description**

Takes any vector of Glottocodes and return languages.

**Usage**

```
lang.gltc(x, glottolog.source = "modified")
```

**Arguments**

x	A character vector of the Glottocodes.
glottolog.source	A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[lang.aff](#), [lang.country](#)

**Examples**

```
lang.gltc('adyg1241')  
lang.gltc(c('adyg1241', 'udii1243'))
```

---

lang.iso

*Get language by ISO 639–3 code*

---

**Description**

Takes any vector of ISO codes and return languages.

**Usage**

```
lang.iso(x, glottolog.source = "modified")
```

**Arguments**

x	A character vector of the ISO codes.
glottolog.source	A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[lang.aff](#), [lang.country](#)

**Examples**

```
lang.iso('ady')  
lang.iso(c('ady', 'rus'))
```

---

lat.lang	<i>Get latitude by language</i>
----------	---------------------------------

---

**Description**

Takes any vector of languages and return latitude.

**Usage**

```
lat.lang(x, glottolog.source = "modified")
```

**Arguments**

x	A character vector of the languages (can be written in lower case)
glottolog.source	A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[aff.lang](#), [area.lang](#), [country.lang](#), [iso.lang](#), [long.lang](#)

**Examples**

```
lat.lang('Adyghe')
long.lang('Adyghe')
lat.lang(c('Adyghe', 'Russian'))
long.lang(c('Adyghe', 'Russian'))
```

---

long.lang	<i>Get longitude by language</i>
-----------	----------------------------------

---

**Description**

Takes any vector of languages and return longitude.

**Usage**

```
long.lang(x, map.orientation = "Pacific", glottolog.source = "modified")
```

**Arguments**

`x` A character vector of the languages (can be written in lower case)

`map.orientation` A character vector with values "Pacific" and "Atlantic". It distinguishes Pacific-centered and Atlantic-centered maps. By default is "Pacific".

`glottolog.source` A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[aff.lang](#), [area.lang](#), [country.lang](#), [iso.lang](#), [lat.lang](#)

**Examples**

```
lat.lang('Adyghe')
long.lang('Adyghe')
lat.lang(c('Adyghe', 'Russian'))
long.lang(c('Adyghe', 'Russian'))
long.lang(c('Adyghe', 'Aleut'), map.orientation = "Pacific")
```

---

map.feature

---

Create a map

---

**Description**

Map a set of languages and color them by feature or two sets of features.

**Usage**

```
map.feature(languages, features = "", label = "", popup = "",
  latitude = NULL, longitude = NULL, label.hide = TRUE,
  label.fsize = 14, label.position = "right", label.emphasize = list(NULL,
    "black"), label.only = FALSE, stroke.features = NULL,
  density. estimation = NULL, density. estimation. color = NULL,
  density. estimation. opacity = 0.6, density. points = TRUE,
  density. longitude. width = NULL, density. latitude. width = NULL,
  density. legend = TRUE, density. legend. opacity = 1,
  density. legend. position = "bottomleft", density. title = "",
  density. control = FALSE, color = NULL, stroke. color = NULL,
  image. url = NULL, image. width = 100, image. height = 100,
  image. X. shift = 0, image. Y. shift = 0, title = NULL,
  stroke. title = NULL, control = FALSE, legend = TRUE,
```

```

legend.opacity = 1, legend.position = "topright", stroke.legend = TRUE,
stroke.legend.opacity = 1, stroke.legend.position = "bottomleft",
width = 5, stroke.radius = 9.5, opacity = 1, stroke.opacity = 1,
scale.bar = TRUE, scale.bar.position = "bottomleft", minimap = FALSE,
minimap.position = "bottomright", minimap.width = 150,
minimap.height = 150, tile = "OpenStreetMap.Mapnik", tile.name = NULL,
zoom.control = FALSE, zoom.level = NULL, rectangle.lng = NULL,
rectangle.lat = NULL, rectangle.color = "black", line.lng = NULL,
line.lat = NULL, line.type = "standard", line.color = "black",
line.opacity = 0.8, line.label = NULL, line.width = 3,
graticule = NULL, minichart = NULL, minichart.data = NULL,
minichart.time = NULL, minichart.labels = FALSE,
map.orientation = "Pacific", glottolog.source = "modified")

```

## Arguments

languages	character vector of languages (can be written in lower case)
features	character vector of features
label	character vector of strings that will appear near points
popup	character vector of strings that will appear in pop-up window
latitude	numeric vector of latitudes
longitude	numeric vector of longitudes
label.hide	logical. If FALSE, labels are displayed allways. If TRUE, labels are displayed on mouse over. By default is TRUE.
label.fsize	numeric value of the label font size. By default is 14.
label.position	the position of labels: "left", "right", "top", "bottom"
label.emphasize	is the list. First argument is a vector of points in dataframe that should be emphasized. Second argument is a string with a color for emphasis.
label.only	creates labels without markers
stroke.features	additional independent stroke features
density.estimation	additional independent features, used for density estimation
density.estimation.color	vector of density polygons' colors
density.estimation.opacity	a numeric vector of density polygons opacity.
density.points	logical. If FALSE, it doesn't show points in polygones.
density.longitude.width	bandwidths for longitude values. Defaults to normal reference bandwidth (see <a href="#">bandwidth.nrd</a> ).
density.latitude.width	bandwidths for latitude values. Defaults to normal reference bandwidth (see <a href="#">bandwidth.nrd</a> ).

density.legend	logical. If TRUE, function show legend for density features. By default is FALSE.
density.legend.opacity	a numeric vector of density-legend opacity.
density.legend.position	the position of the legend: "topright", "bottomright", "bottomleft", "topleft"
density.title	title of a density-feature legend
density.control	logical. If TRUE, function show layer control buttons for density plot. By default is FALSE
color	vector of colors or palette. The color argument can be (1) a character vector of RGM or named colors; (2) the name of an RColorBrewer palette; (3) the full name of a viridis palette; (4) a function that receives a single value between 0 and 1 and returns a color. For more examples see <a href="#">colorNumeric</a>
stroke.color	vector of stroke colors
image.url	character vector of URLs with an images
image.width	numeric vector of image widths
image.height	numeric vector of image heights
image.X.shift	numeric vector of image's X axis shift relative to the latitude-longitude point
image.Y.shift	numeric vector of image's Y axis shift relative to the latitude-longitude point
title	title of a legend.
stroke.title	title of a stroke-feature legend.
control	logical. If TRUE, function show layer control buttons. By default is FALSE
legend	logical. If TRUE, function show legend. By default is TRUE.
legend.opacity	a numeric vector of legend opacity.
legend.position	the position of the legend: "topright", "bottomright", "bottomleft", "topleft"
stroke.legend	logical. If TRUE, function show stroke.legend. By default is FALSE.
stroke.legend.opacity	a numeric vector of stroke.legend opacity.
stroke.legend.position	the position of the stroke.legend: "topright", "bottomright", "bottomleft", "topleft"
width	a numeric vector of radius for circles or width for barcharts in minicharts.
stroke.radius	a numeric vector of stroke radii for the circles.
opacity	a numeric vector of marker opacity.
stroke.opacity	a numeric vector of stroke opacity.
scale.bar	logical. If TRUE, function shows scale-bar. By default is TRUE.
scale.bar.position	the position of the scale-bar: "topright", "bottomright", "bottomleft", "topleft"
minimap	logical. If TRUE, function shows mini map. By default is FALSE.

minimap.position	the position of the minimap: "topright", "bottomright", "bottomleft", "topleft"
minimap.width	The width of the minimap in pixels.
minimap.height	The height of the minimap in pixels.
tile	a character vector with a map tiles, popularized by Google Maps. See <a href="#">here</a> for the complete set.
tile.name	a character vector with a user's map tiles' names.
zoom.control	logical. If TRUE, function shows zoom controls. By default is FALSE.
zoom.level	a numeric value of the zoom level.
rectangle.lng	vector of two longitude values for rectangle.
rectangle.lat	vector of two latitude values for rectangle.
rectangle.color	vector of rectangle border color.
line.lng	vector of two (or more) longitude values for line.
line.lat	vector of two (or more) latitude values for line.
line.type	a character string indicating which type of line is to be computed. One of "standard" (default), or "logit". The first one should be combined with the arguments line.lat and line.lng and provide simple lines. Other variant "logit" is the decision boundary of the logistic regression made using longitude and latitude coordinates (works only if feature argument have two levels).
line.color	vector of line color.
line.opacity	a numeric vector of line opacity.
line.label	character vector that will appear near the line.
line.width	a numeric vector of line width.
graticule	a numeric vector for graticule spacing in map units between horizontal and vertical lines.
minichart	citation from leaflet.minicharts package: "Possible values are "bar" for bar charts, "pie" for pie charts, "polar-area" and "polar-radius"."
minichart.data	citation from leaflet.minicharts package: "A numeric matrix with number of rows equal to the number of elements in lng or lat and number of column equal to the number of variables to represent. If parameter time is set, the number of rows must be equal to the length of lng times the number of unique time steps in the data."
minichart.time	citation from leaflet.minicharts package: "A vector with length equal to the number of rows in chartdata and containing either numbers representing time indices or dates or datetimes. Each unique value must appear as many times as the others. This parameter can be used when one wants to represent the evolution of some variables on a map."
minichart.labels	citation from leaflet.minicharts package: "Should values be displayed above chart elements."

map.orientation

a character vector with values "Pacific" and "Atlantic". It distinguishes Pacific-centered and Atlantic-centered maps. By default is "Pacific".

glottolog.source

A character vector that define which glottolog database is used: "original" or "modified" (by default)

## Author(s)

George Moroz <agricolamz@gmail.com>

## Examples

```
map.feature(c("Adyghe", "Russian"))

## Map all Slavic languages
map.feature(lang.aff(c("Slavic"))))

## Color languages by feature
df <- data.frame(lang = c("Adyghe", "Kabardian", "Polish", "Russian", "Bulgarian"),
  feature = c("polysynthetic", "polysynthetic", "fusion", "fusion", "fusion"))
map.feature(df$lang, df$feature)

## Add your own coordinates
map.feature("Adyghe", latitude = 43, longitude = 57)

## Change map tile
map.feature("Adyghe", tile = "Thunderforest.OpenCycleMap")

## Add you own colors
df <- data.frame(lang = c("Adyghe", "Kabardian", "Polish", "Russian", "Bulgarian"),
  feature = c("polysynthetic", "polysynthetic", "fusion", "fusion", "fusion"),
  popup = c("Circassian", "Circassian", "Slavic", "Slavic", "Slavic"))
map.feature(df$lang, df$feature, df$popup, color = c("green", "navy"))

## Map two sets of features
df <- data.frame(lang = c("Adyghe", "Kabardian", "Polish", "Russian", "Bulgarian"),
  feature = c("polysynthetic", "polysynthetic", "fusion", "fusion", "fusion"),
  popup = c("Circassian", "Circassian", "Slavic", "Slavic", "Slavic"))
map.feature(df$lang, df$feature, df$popup,
  stroke.features = df$popup)

## Add a minimap to plot
map.feature(c("Adyghe", "Russian"), minimap = TRUE)

## Remove scale bar
map.feature(c("Adyghe", "Russian"), scale.bar = FALSE)
```



---

phoible.feature	<i>Download PHOIBLE data</i>
-----------------	------------------------------

---

## Description

This function downloads data from PHOIBLE (<http://phoible.org/>) and changes language names to the names from lingtypology database. You need the internet connection.

## Usage

```
phoible.feature(features = "all", source = "all", na.rm = TRUE,
               glottolog.source = "modified")
```

## Arguments

features	A character vector that define with a feature names from PHOIBLE (possible values: "all", "Phonemes", "Consonants", "Tones", "Vowels").
source	A character vector that define with a source names from PHOIBLE (possible values: "all", "AA", "GM", "PH", "RA", "SAPHON", "SPA", "UPSID").
na.rm	Logical. If TRUE function removes all languages not available in lingtypology database. By default is TRUE.
glottolog.source	A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

## Author(s)

George Moroz <[agricolamz@gmail.com](mailto:agricolamz@gmail.com)>

## See Also

[afbo.feature](#), [autotyp.feature](#), [sails.feature](#), [wals.feature](#)

## Examples

```
# phoible.feature()
# phoible.feature(c('consonants', 'vowels'), source = "UPSID")
```

---

polygon.points	<i>Get kernel density estimation polygon from coordinates</i>
----------------	---

---

### Description

This function is based on this answer: <https://gis.stackexchange.com/a/203623>

### Usage

```
polygon.points(latitude, longitude, latitude_width, longitude_width)
```

### Arguments

latitude	numeric vector of latitudes
longitude	numeric vector of longitudes
latitude_width	bandwidths for latitude values. Defaults to normal reference bandwidth (see <a href="#">bandwidth.nrd</a> ).
longitude_width	bandwidths for longitude values. Defaults to normal reference bandwidth (see <a href="#">bandwidth.nrd</a> ).

---

sails.feature	<i>Download SAILS data</i>
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---

### Description

This function downloads data from SAILS (<http://sails.clld.org/>) and changes language names to the names from lingtypology database. You need the internet connection.

### Usage

```
sails.feature(features, na.rm = TRUE, glottolog.source = "modified")
```

### Arguments

features	A character vector that define with a feature ids from SAILS (e. g. "and1", "argex4-1-3").
na.rm	Logical. If TRUE function removes all languages not available in lingtypology database. By default is TRUE.
glottolog.source	A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[afbo.feature](#), [autotyp.feature](#), [phoible.feature](#), [wals.feature](#)

**Examples**

```
# sails.feature(c("and1", "and11"))
```

---

url.lang	<i>Make a url-link to glottolog page for a language</i>
----------	---

---

**Description**

Takes any vector of languages and return links to glottolog pages.

**Usage**

```
url.lang(x, popup = "", glottolog.source = "modified")
```

**Arguments**

x	A character vector of languages (can be written in lower case)
popup	character vector of strings that will appear in pop-up window of the function map.feature
glottolog.source	A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**Examples**

```
url.lang('Korean')
url.lang(c('Gangou', 'Hachijo', 'Adyghe', 'Ganai'))
```

---

wals	<i>WALS's Language identifiers</i>
------	------------------------------------

---

### Description

Language identifiers from WALS (<http://wals.info/>). This dataset is created for `wals.feature` function.

### Usage

```
wals
```

### Format

An object of class `tbl_df` (inherits from `tbl`, `data.frame`) with 2679 rows and 2 columns.

### Details

#' @format A data frame with 2950 rows and 2 variables:

**wals code** WALS language identifier

**glottocode** Glottocode

---

wals.feature	<i>Download WALS data</i>
--------------	---------------------------

---

### Description

This function downloads data from WALS (<http://wals.info>) and changes language names to the names from lingtypology database. You need the internet connection.

### Usage

```
wals.feature(features, na.rm = TRUE, glottolog.source = "modified")
```

### Arguments

**features** A character vector that define with a feature ids from WALS (e. g. "1a", "21b").

**na.rm** Logical. If TRUE function removes all languages not available in lingtypology database. By default is TRUE.

**glottolog.source** A character vector that define which glottolog database is used: 'original' or 'modified' (by default)

**Author(s)**

George Moroz <agricolamz@gmail.com>

**See Also**

[afbo.feature](#), [autotyp.feature](#), [phoible.feature](#), [sails.feature](#)

**Examples**

```
# wals.feature(c("1a", "20a"))
```

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