LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

VERBAALPINA

The FAIR Principles – an important challenge to variational linguistics

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Outline

1. Project Overview of VerbaAlpina

research aims, area under investigation, conceptual domains, data

2. The FAIR principles

3. FAIR@VerbaAlpina

4. How the FAIR principles are challenging for variational linguistics

Project Overview

- *VerbaAlpina. Der alpine Kulturraum im Spiegel seiner Mehrsprachigkeit* (VerbaAlpina. The Alpine cultural region reflected through its multilingualism)
- Funded by the German Research Foundation (DFG)
- 1st term: 10/2014-10/2017, 2nd term: 11/2017-10/2020, 3rd term: 11/2020 – 10/2023 (perspective until 2026)
- Investigation of the multilingual Alpine region
- Combination of (geo-)linguistics and Digital Humanities (DH)

Project Overview

Research Aims

- Selective and analytical investigation of the linguistically and dialectally highly fragmented alpine space in its historico-cultural and historical-linguistic unity
- Overcoming of the traditional limitation of geolinguistic investigation to nation-states
- recognition of connections regarding the etymology of the individual dialectal words
- Setting up a portal by using modern media technology: documentation, data collection, collaborative development
- cooperation with other projects is fundamental for VerbaAlpina

Project Overview

Area under investigation: The Alpine region

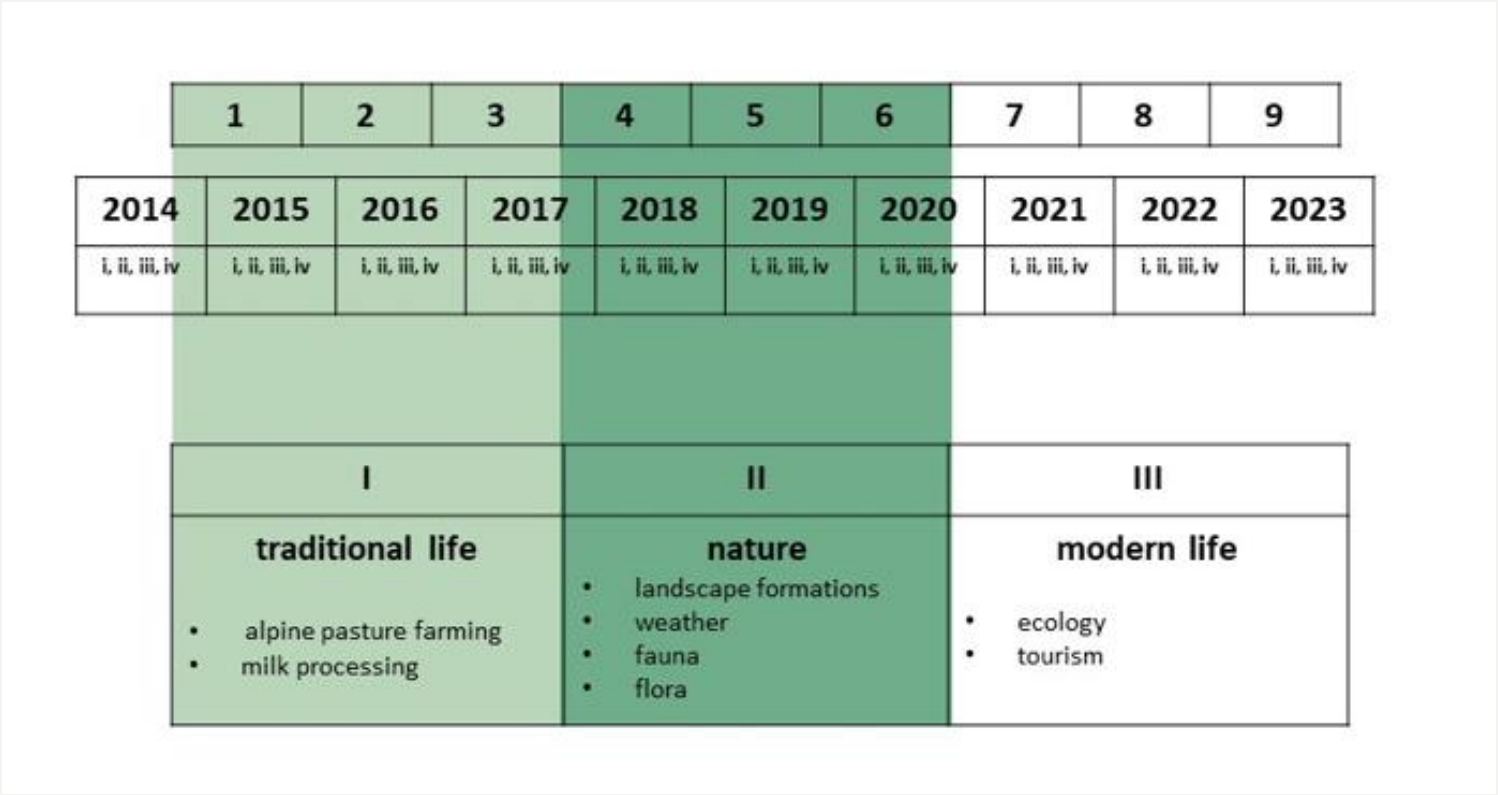
- Area of investigation is limited to the territorial borders defined by the Alpine convention

- surface area of 190,600 km^2, encompasses parts of six different countries (D, A, CH, I, F, SLO) and two entire countries (FL, MC)

- ethnographic and topographic homogeneity and strong linguistic heterogeneity → 3 language families

Project Overview

Three conceptual domains



Project Overview

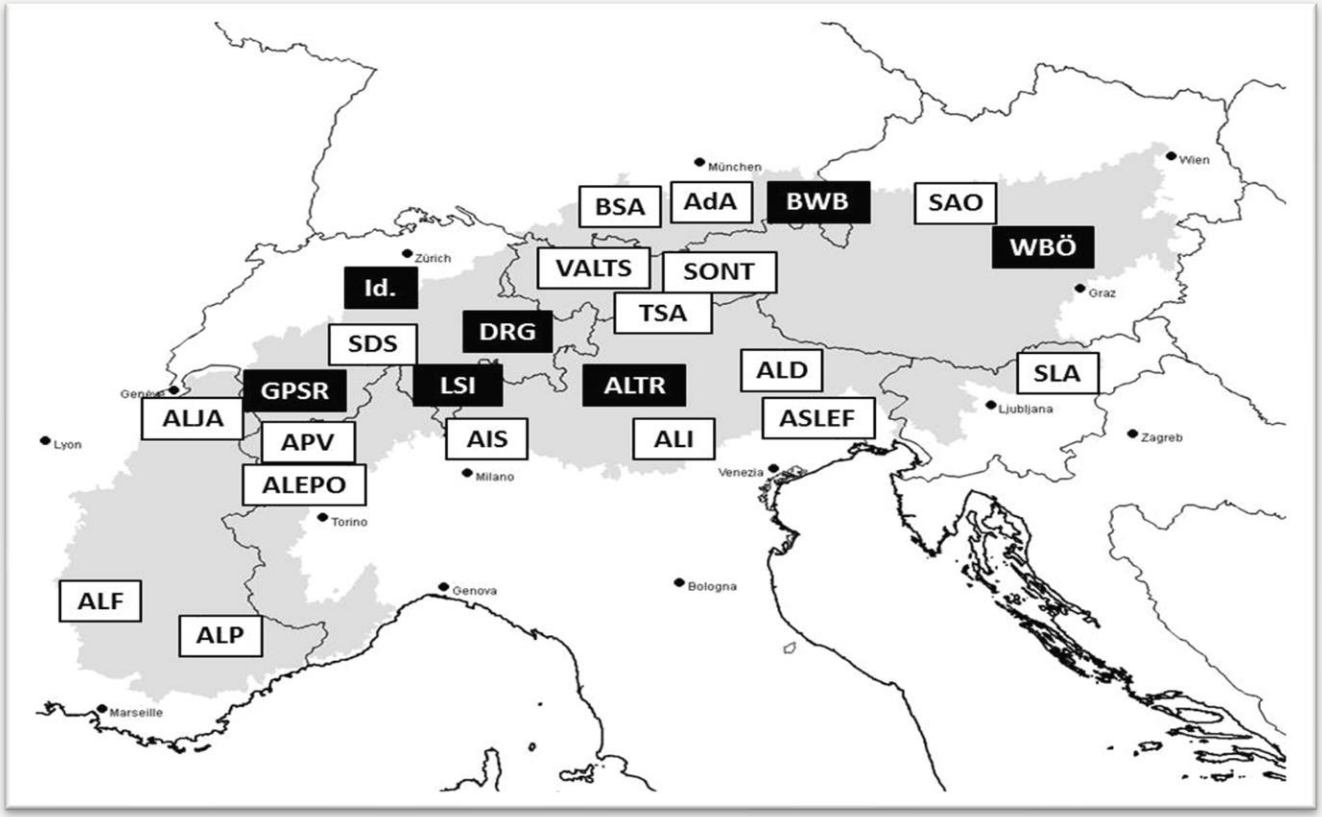
Data

Multiple different sources

- printed atlases/dictionaries (georeferenced)
- digital material from project partners
- crowdsourcing

Project Overview

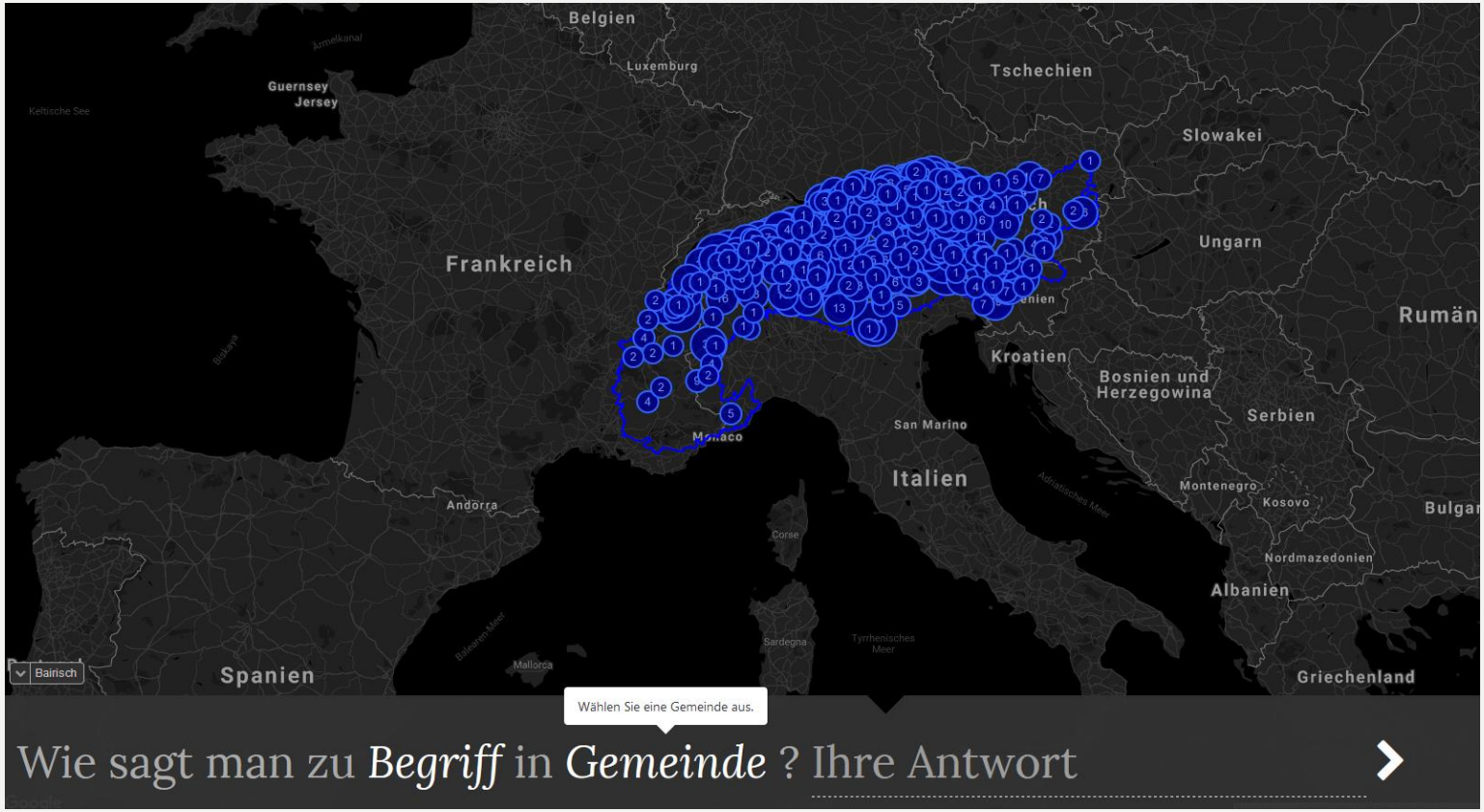
Atlases and Dictionaries in the Alpine region



Project Overview

Crowdsourcing-Tool

www.lmu.de/verbaalpina



The FAIR principles

Research data have to be FAIR:

F_indable

A_ccessible

I_nteroperable

R_eusable

→ principles postulated by Wilkinson et al. 2016 as the guiding principles for scientific data management

The FAIR principles

F_indable → via library catalogues and data aggregators

A_ccessible → via open access licences

I_nteroperable → via compatibility of databases and their interconnection

R_eusable → results from F, A, I

The FAIR principles

What VerbaAlpina does to make its data FAIR

F_indable

- Cooperation with the University Library of Munich University (VerbaAlpina data is available on UB Discover, version 19/1 + 19/2) and the two RDM projects "e-humanities-interdisziplinär" (until 2021) and "GeRDI" (Generic Research Data Infrastructure) (until 2019)

A_ccessible

- Creative Commons licence (compatible with open access and open source) for all data managed by VerbaAlpina

  (up to version 18/1: CC BY SA 3.0, from 18/2: CC BY SA 4.0)

The FAIR principles

I_nteroperable

- through a fine granulation of the data stock via
  - structured data processing (transcription, tokenization, typification)
  - assignment of norm data (Q-ID, L-ID, GND, GeoNames etc.)
  - enrichment with metadata in DataCite and CIDOC CRM format
  - assignment of persistent identifiers (e.g. DOIs, Digital Object Identifiers)

- access to primary data and metadata (via interactive map, Lexicon Alpinum, API)

R_eusable

- results from F, A, I

FAIR@VerbaAlpina

- **requirements of F, A, R aim to be both human readable and machine readable**

→ apply to human-machine-human communication and to machine-machine communication

- **I → only applies to machine-machine communication**
  → BUT: is crucial for the progress of research

FAIR@VerbaAlpina

I_nteroperable

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R_eusable

- results from F, A, I

Assignment of norm data

- **Norm data created by VerbaAlpina**

  For the 3 core entities

  - morpho-lexical types → L
  - concepts → C
  - municipalities → A

  e.g.: L1435, „babeurre (m.) (roa.)“
  C612, „ALMHÜTTE“ (*chalet*)
  A60171, „Sils in Engadin/Segl“

- **Persistent identifiers of external institutions**
  (knowledge data bases/norm data bases/reference dictionaries)

FAIR@VerbaAlpina

Persistent identifiers of external institutions

- **Q-IDs** of Wikidata (for concepts), partly also **L-IDs** of Wikidata (for morpho-lexical types)
- partly **GNDs** of the German National Library (for concepts) (*Gemeinsame Normdatei*, „Integrated Authority File“)
- **GeoNames** of www.geonames.org (for municipalities)
- **ISO Codes 639-3** (for languages)
- Identifiers of **reference dictionaries** (for morpho-lexical types + base types)
- **DOIs** (Digital Object Identifiers, assigned to every single data)

Limerick
2962943

Q54050
(Q-ID)

L73260
(L-ID)

4135744-9 (GND)

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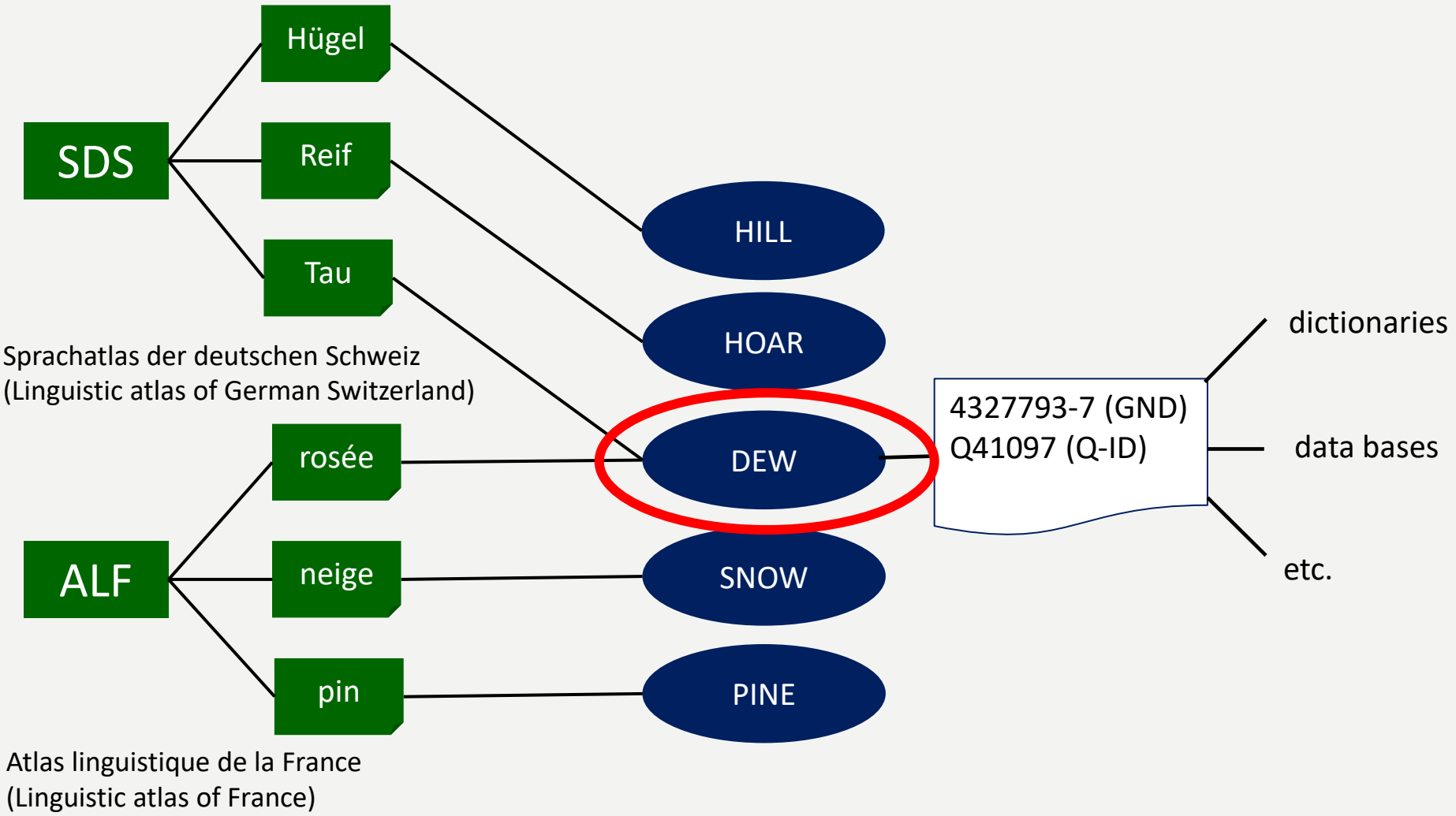

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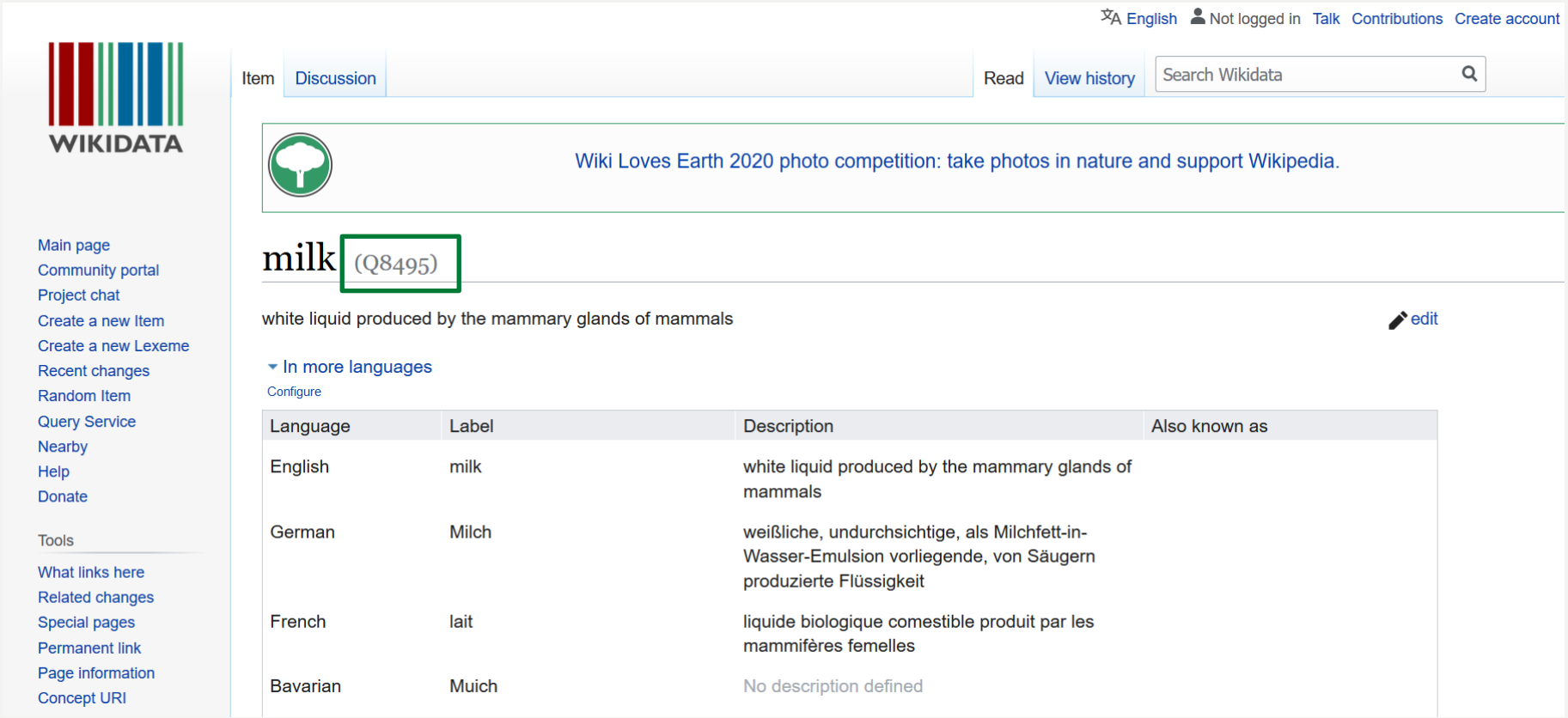
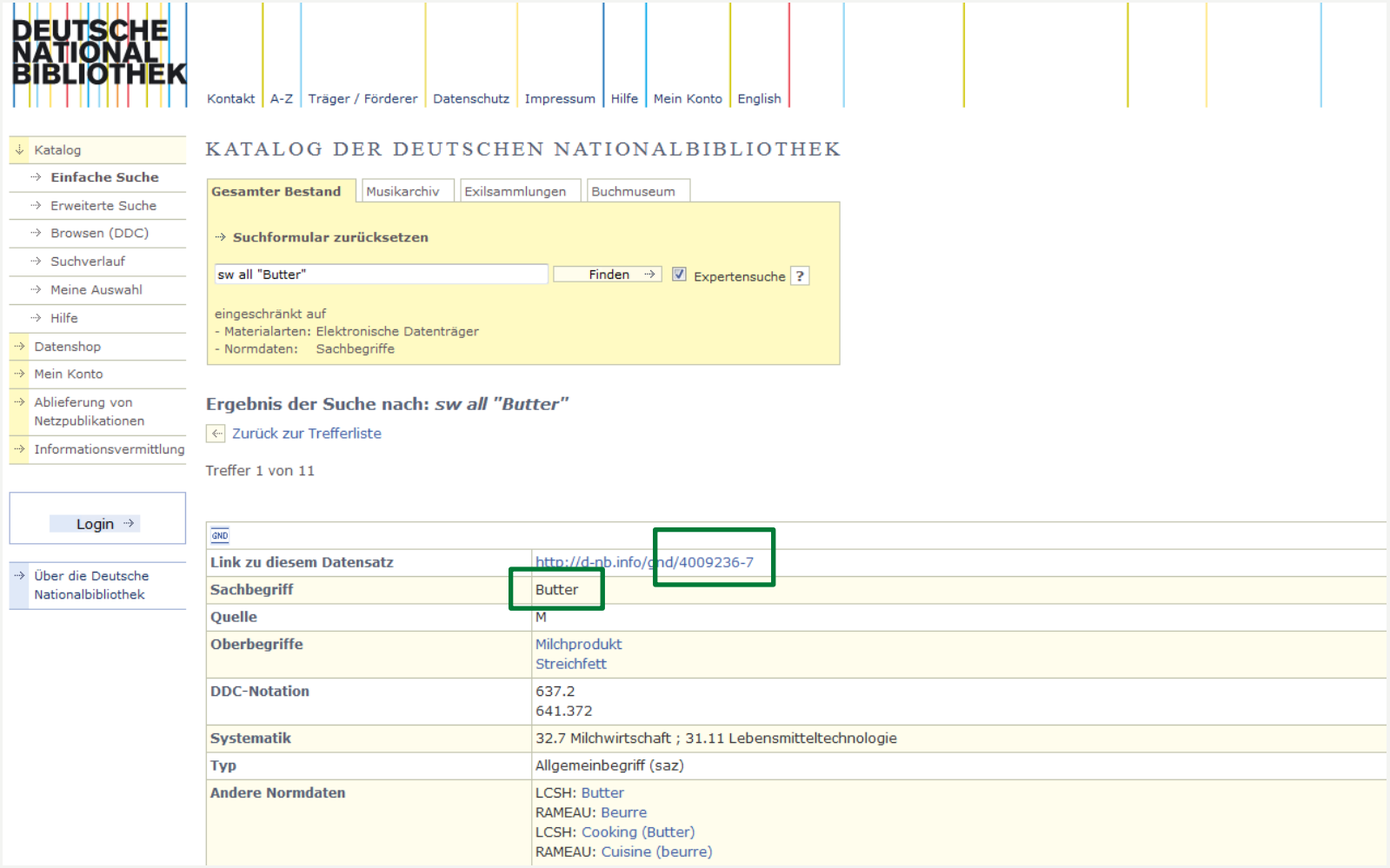


FAIR@VerbaAlpina



DEUTSCHE NATIONAL BIBLIOTHEK

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- Hilfe
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Über die Deutsche Nationalbibliothek

KATALOG DER DEUTSCHEN NATIONALBIBLIOTHEK

Gesamter Bestand | Musikarchiv | Exilsammlungen | Buchmuseum

Suchformular zurücksetzen

sw all "Butter" Finden Expertensuche ?

eingeschränkt auf
- Materialarten: Elektronische Datenträger
- Normdaten: Sachbegriffe

Ergebnis der Suche nach: *sw all "Butter"*

Zurück zur Trefferliste

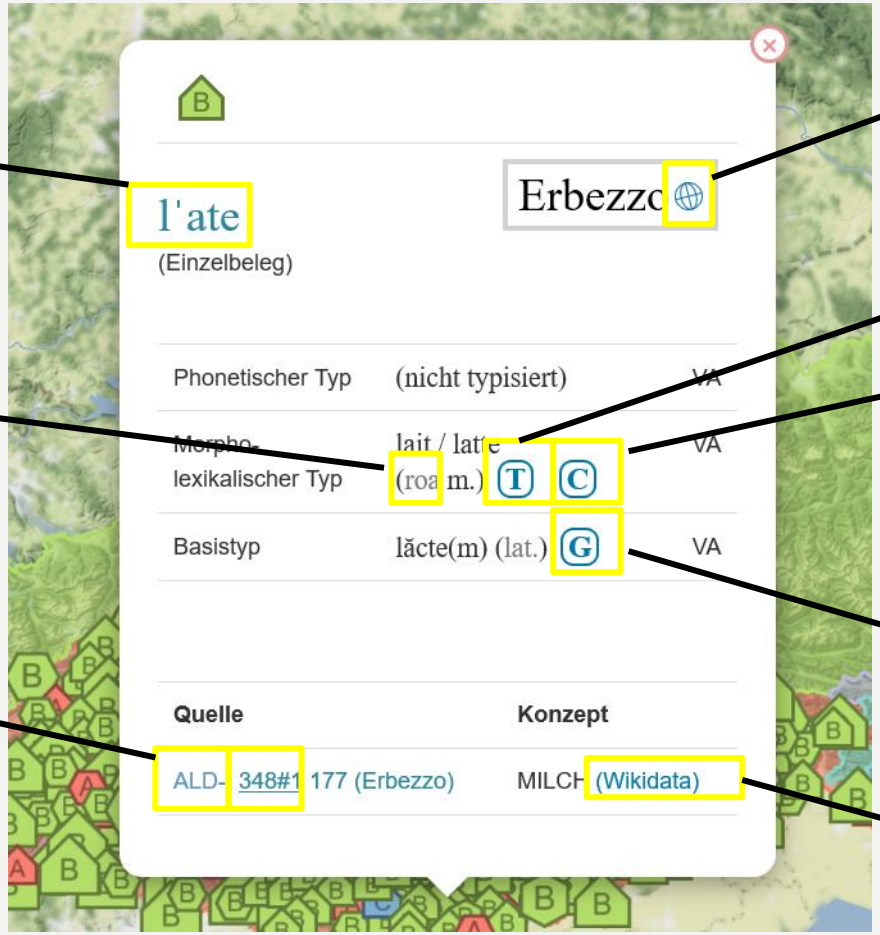
Treffer 1 von 11

GND

Link zu diesem Datensatz	http://d-nb.info/gnd/4009236-7
Sachbegriff	Butter
Quelle	M
Oberbegriffe	Milchprodukt Streichfett
DDC-Notation	637.2 641.372
Systematik	32.7 Milchwirtschaft ; 31.11 Lebensmitteltechnologie
Typ	Allgemeinbegriff (saz)
Andere Normdaten	LCSH: Butter RAMEAU: Beurre LCSH: Cooking (Butter) RAMEAU: Cuisine (beurre)

FAIR@VerbaAlpina

Detail view of one specific data point



IPA

Darstellung: IPA VA

ISO Code

Source + link

Goebl, Hans (Wiesbaden): Atlant linguistich dl ladin dolomitich y di dialec vejins l, vol. 1-7 (sprechend: http://ald.sbg.ac.at/ald/ald-i/index.php), 1998, vol. 1-7, Reichert

Link

GeoNames

Dictionaries

Treccani: latte

CNRTL: lait

Etymological dictionary

Georges: lac 2, 525

Wikidata

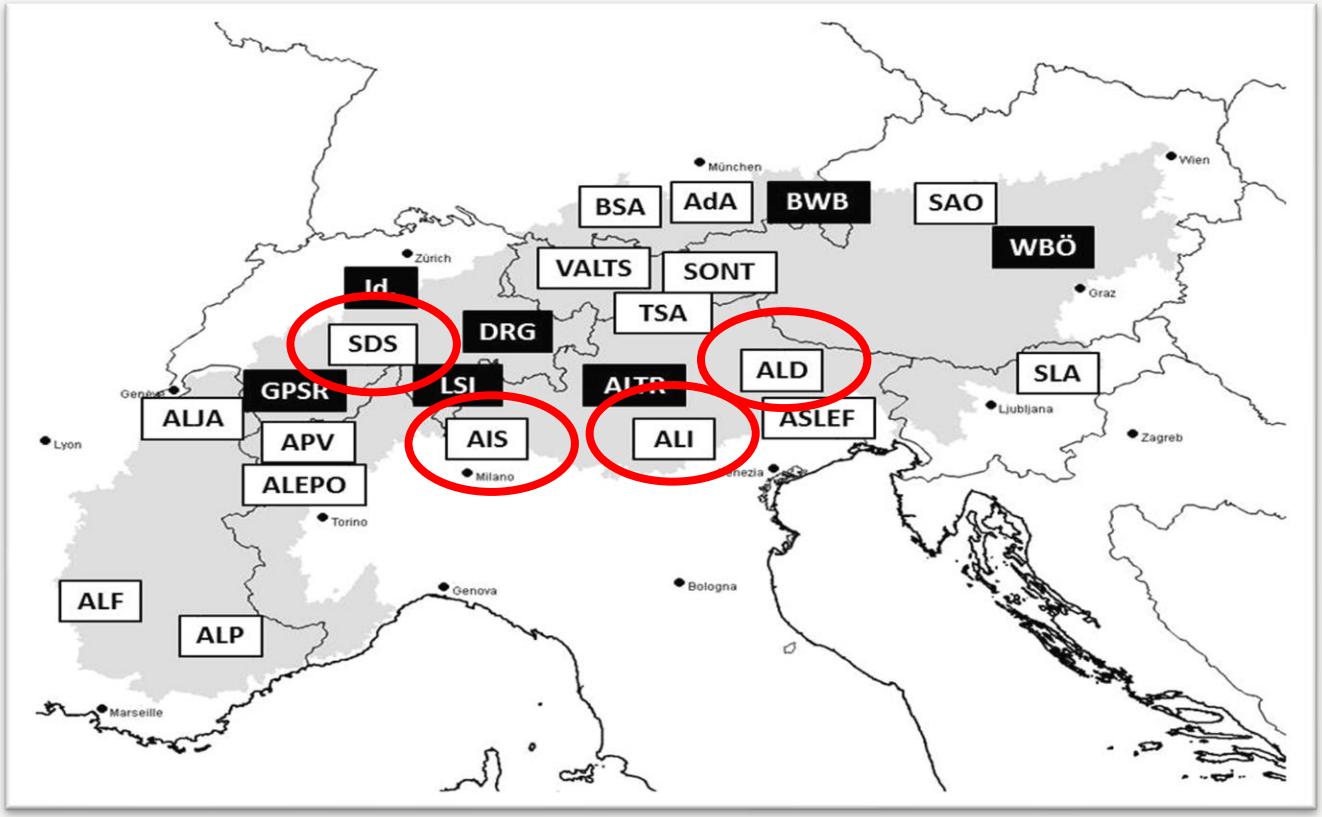
How the FAIR principles are challenging for variational linguistics

VerbaAlpina tries to create FAIR output

BUT: many data sources (the input) are far away from being FAIR

Main reason: lack of interoperability

FAIRness of atlases in the Alpine region



How the FAIR principles are challenging for variational linguistics

Comparison of the FAIRness of 4 geolinguistic atlases with VerbaAlpina

	Findable		Accessible		Inter-operable	Reusable	
	hum. read.	mach. read.	hum. read.	mach. read.	mach. read.	hum. read.	mach. read.
ALI	–	–	–	–	–	–	–
SDS	+	+	+	–	–	+	–
AIS	+	+	+	–	–	+	–
ALD	+	+	+	–	–	+	+
VA	+	+	+	+	+	+	+

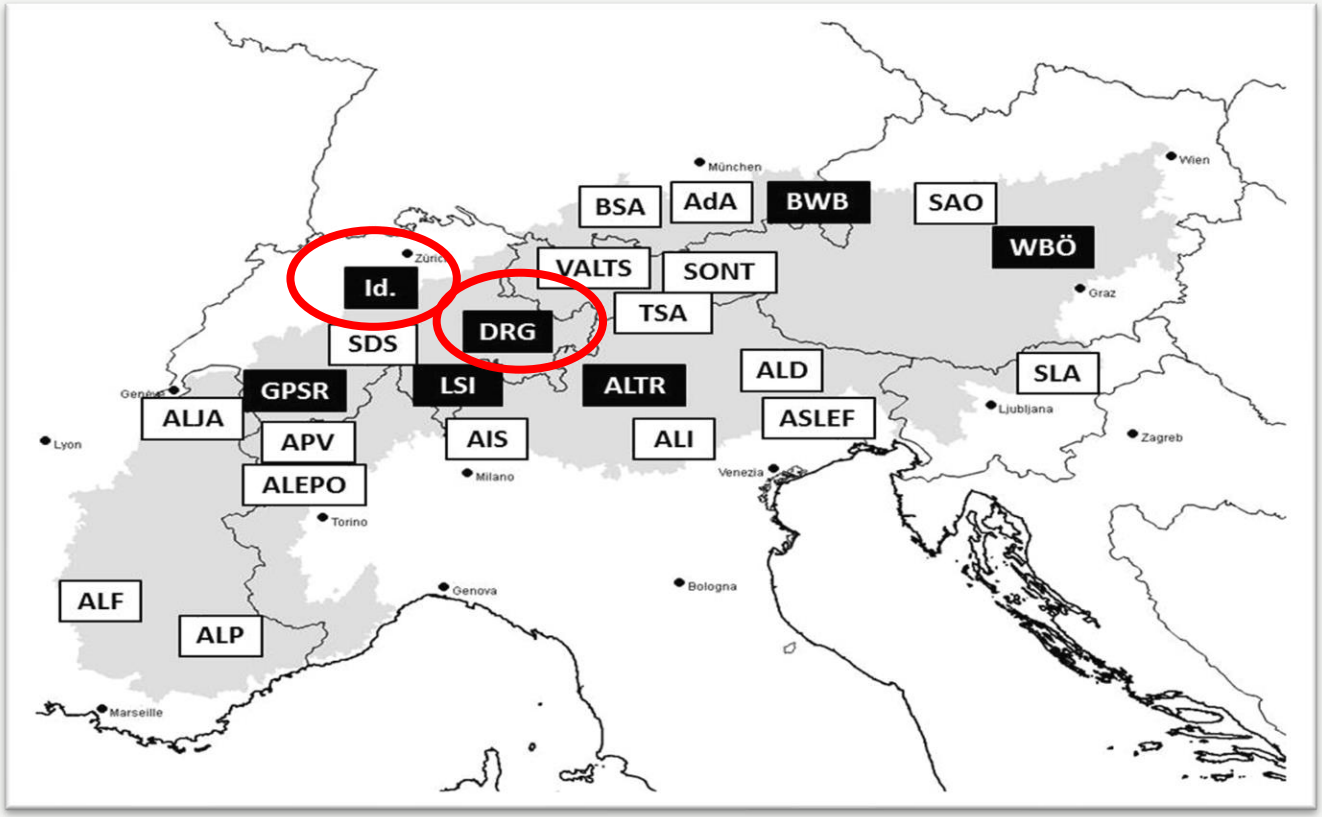
ALI = Atlante linguistico italiano
SDS = Sprachatlas der Deutschen Schweiz
AIS = Sprach- und Sachatlas Italiens und der Südschweiz
ALD = Atlant linguistich dl ladin dolomitich y di dialec vejins
VA = VerbaAlpina

How the FAIR principles are challenging for variational linguistics

Lack of FAIRness because…

- linguistic atlases are usually only accessible as printed works
- only a few offer at least the most basic level of digitisation i. e. digital photos (scans), e.g. AIS (NavigAIS), SDS for original material
- no older atlas has yet been prepared in the form of a structured corpus that also allows export of the data
- only the ALD is based on a non- interoperable digital format that proved to be machine-readable after certain adaptations

Interoperability of dictionaries in the Alpine region



- **Schweizerisches Idiotikon**

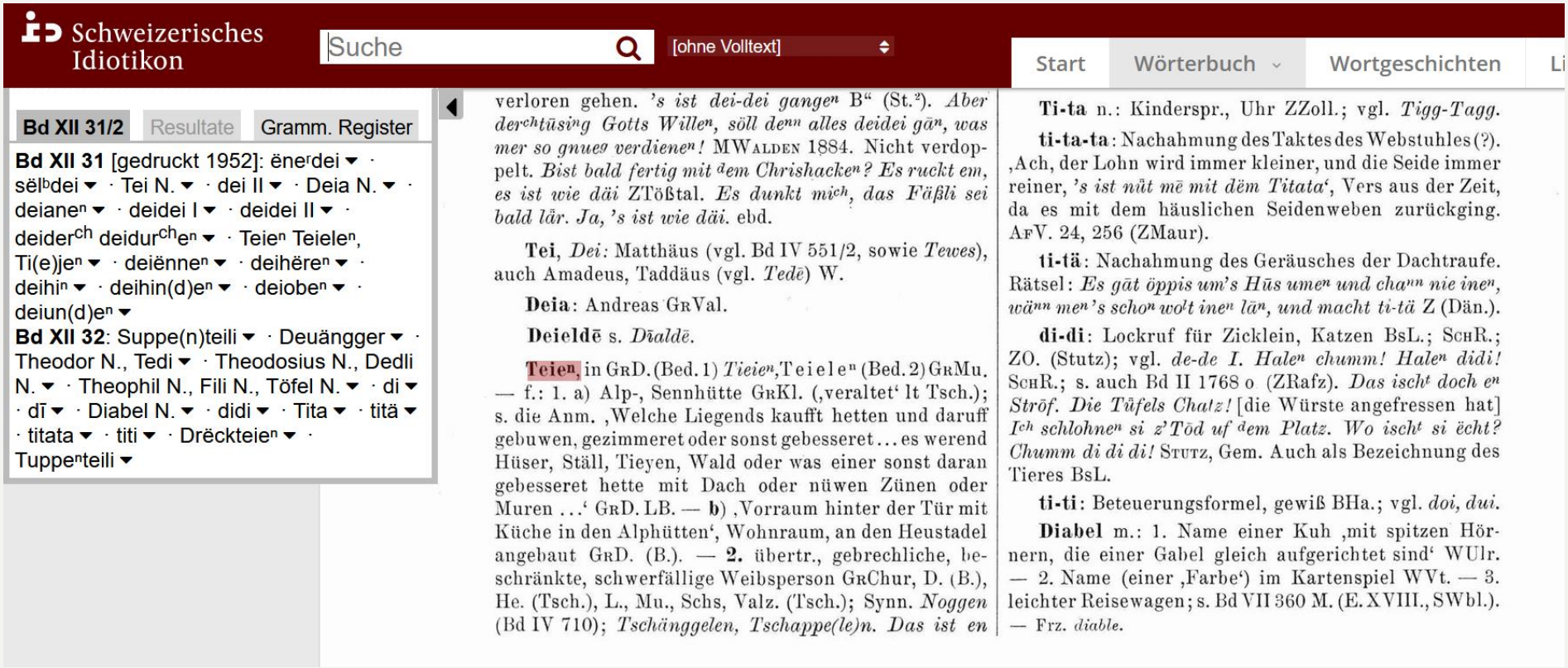
Many Cons

- referencing is possible, but not precise enough
- structure of URLs is cryptic/semantically intransparent

  Example: *Teie(n)* (Alpine chalet)
  https://digital.idiotikon.ch/idtkn/faksimile.php?band=12&spalte=31&hl=229458

- referencing is based on the pages of the printed edition, not on the specific entries (naming of volume and column in the URL)
- all entries on one page are addressed via the same URL (no individual URLs)
- URLs refer to a scan of the printed volume and retain its page/column logic as reference system (see URL)
- entries cannot be copied/pasted (image and no HTML code)

How the FAIR principles are challenging for variational linguistics



Source: Schweizerisches Idiotikon https://digital.idiotikon.ch/idtkn/faksimile.php?band=12&spalte=31&hl=229458

- **Dicziunari Rumantsch Grischun (DRG)**

Pros

- **Links do not refer to the book page as in the Idiotikon, but to the corresponding entry**

  Example: BARGUN (Hay barn in mountain pastures)
  http://online.drg.ch/main.aspx#35ac0b4c3795c91831f3534a40a0c5f0

- **Contents are available in HTML and can be copied/pasted and cited**

Cons

- **Identifiers are too long and make intuitive and automatic generation of specific URLs impossible**

How the FAIR principles are challenging for variational linguistics

Source: DRG-Online http://online.drg.ch/#35ac0b4c3795c91831f3534a40a0c5f0

How the FAIR principles are challenging for variational linguistics

Difficulties in the assignment of norm data

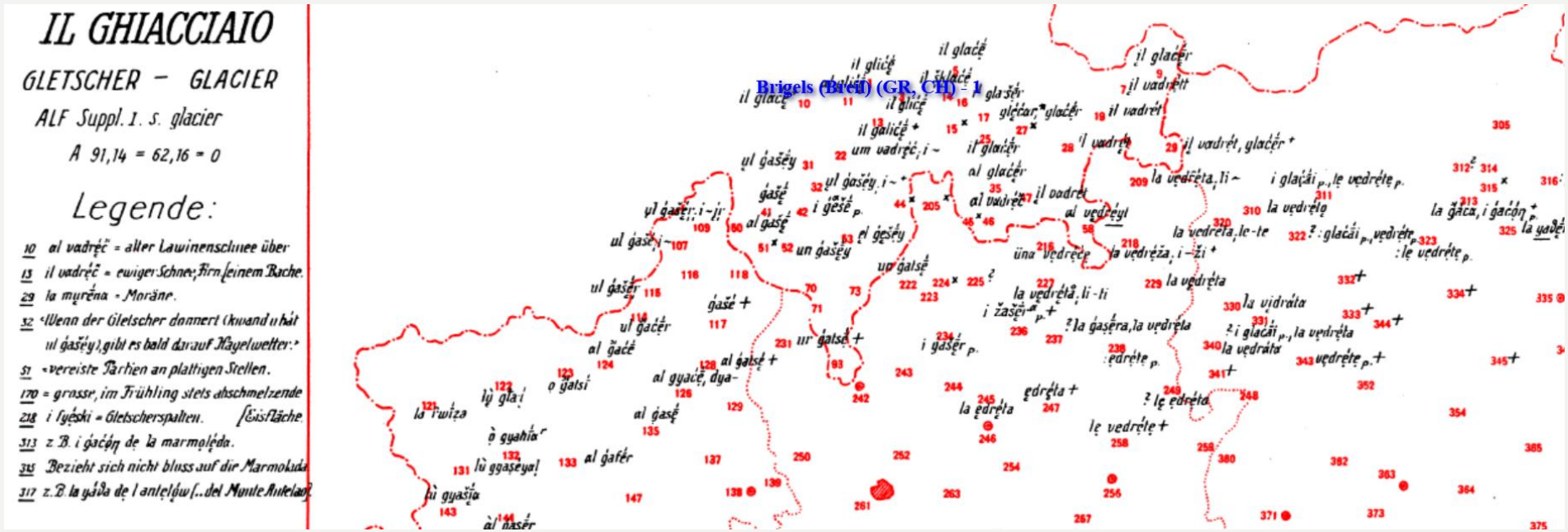
- ISO-Codes 639-3 are not detailed enough

Varieties according to Lia Rumantscha		Wikidata Q-ID	Glottolog	Constitutions CH, GR	ISO-693.3
"standard language"	Rumantsch Grischun	Q688873	Rumantsch Grischun	"Rhaeto-Romance" (Räto-romanisch)	roh
"written idioms"	Puter	Q688309	Upper Engadine		
	Vallader	Q690226	Lower Engadine		
	Surmiran	Q690216	Surmiran-Albula		
	Sursilvan	Q688348	Sursilvan		
			Sursilvan-Oberland		
	Sutsilvan	Q688272	Sutsilvan		
spoken dialect	Jauer	Q690181			

How the FAIR principles are challenging for variational linguistics

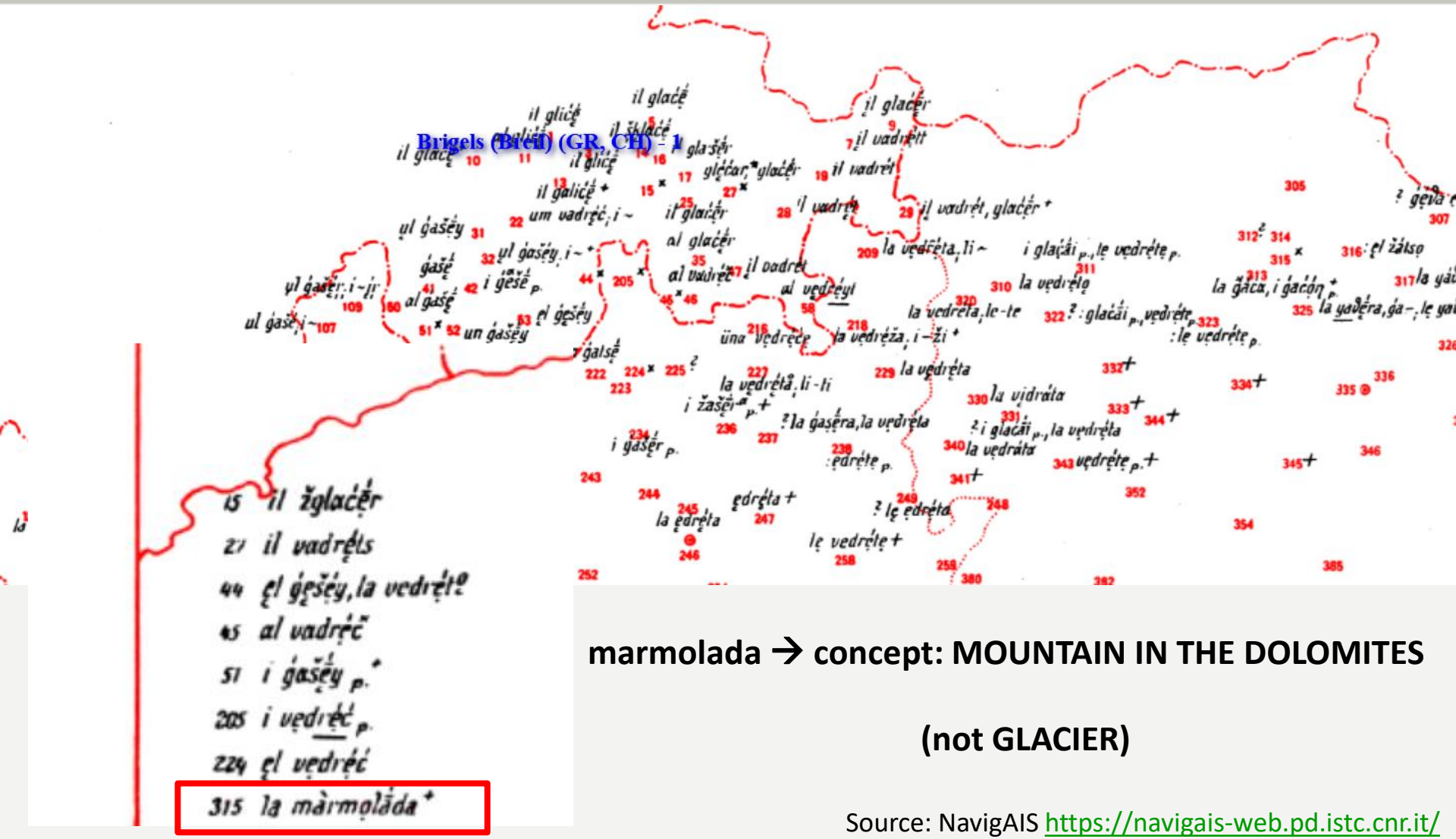
- **Concept assignment is sometimes unclear**

Example: concept GHIACCIAO (GLACIER)



Source: NavigAIS https://navigais-web.pd.istc.cnr.it/

How the FAIR principles are challenging for variational linguistics



marmolada → concept: MOUNTAIN IN THE DOLOMITES

(not GLACIER)

Source: NavigAIS https://navigais-web.pd.istc.cnr.it/

References

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Thank you for your attention!

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