Word-formation in minority languages: corpus linguistics for low-density varieties

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Outline of the talk

- High-density and low-density languages

- Walser German islands in Italy

- The impact of contact on word-formation

- The case of two Germanic islands in Italy

- Conclusion

# High- and Low-Density Languages

- Density: the amount of computational resources available
  - NO: the number of speakers of a language
- Scarcity of annotated texts
  - Parallel text aligned with another language at the sentence level (and/or at finer levels of parallelism, including morpheme-level glossing)
  - Text annotated for named entities at various levels of granularity
  - Morphologically analyzed text
  - Text marked for word boundaries
  - POS tagged text, and a POS tag schema appropriate to the particular language
  - Treebanked (syntactically annotated and parsed) text
  - Semantically tagged text (semantic roles)
  - Electronic dictionaries and other lexical resources, such as Wordnet

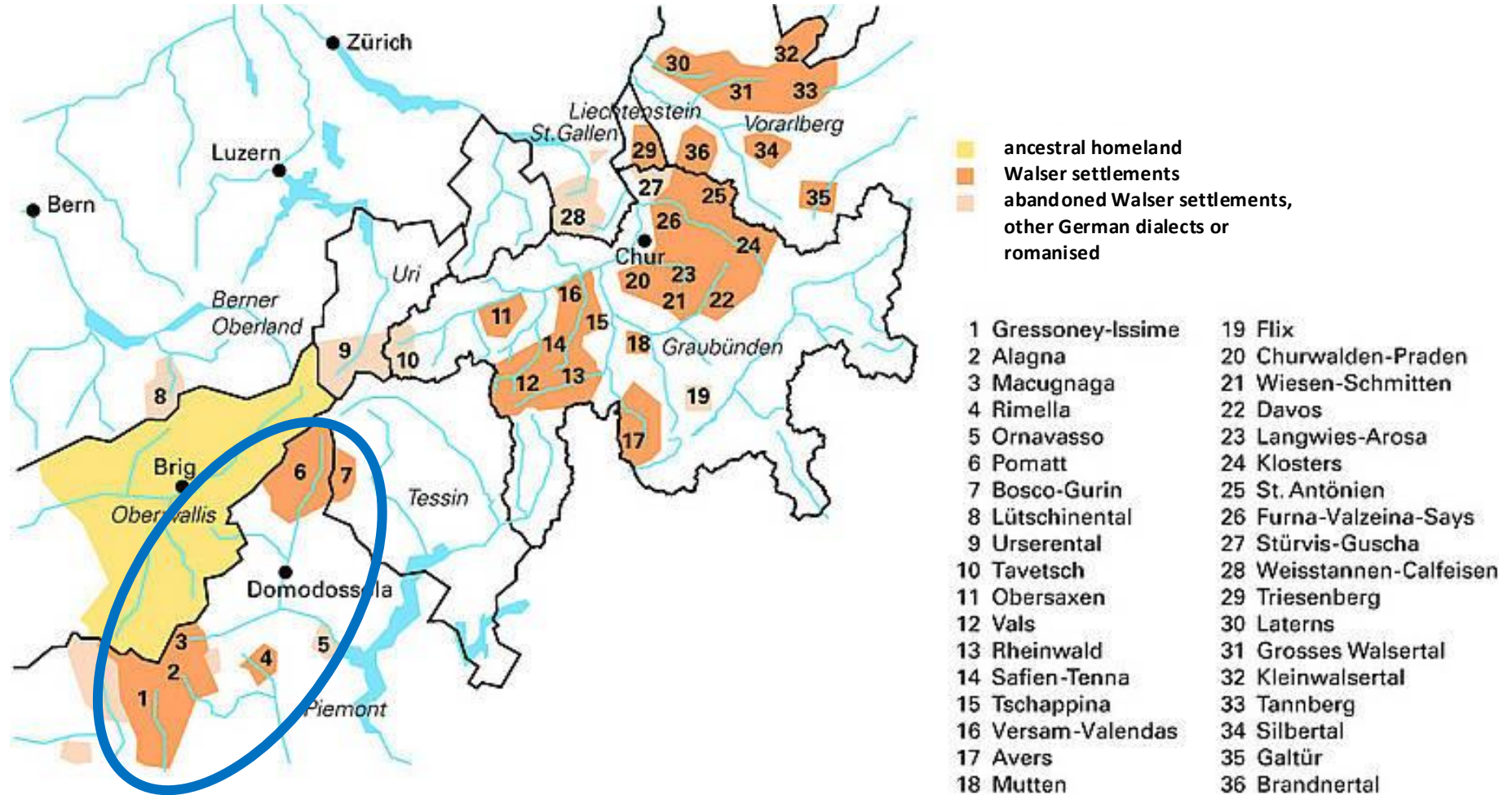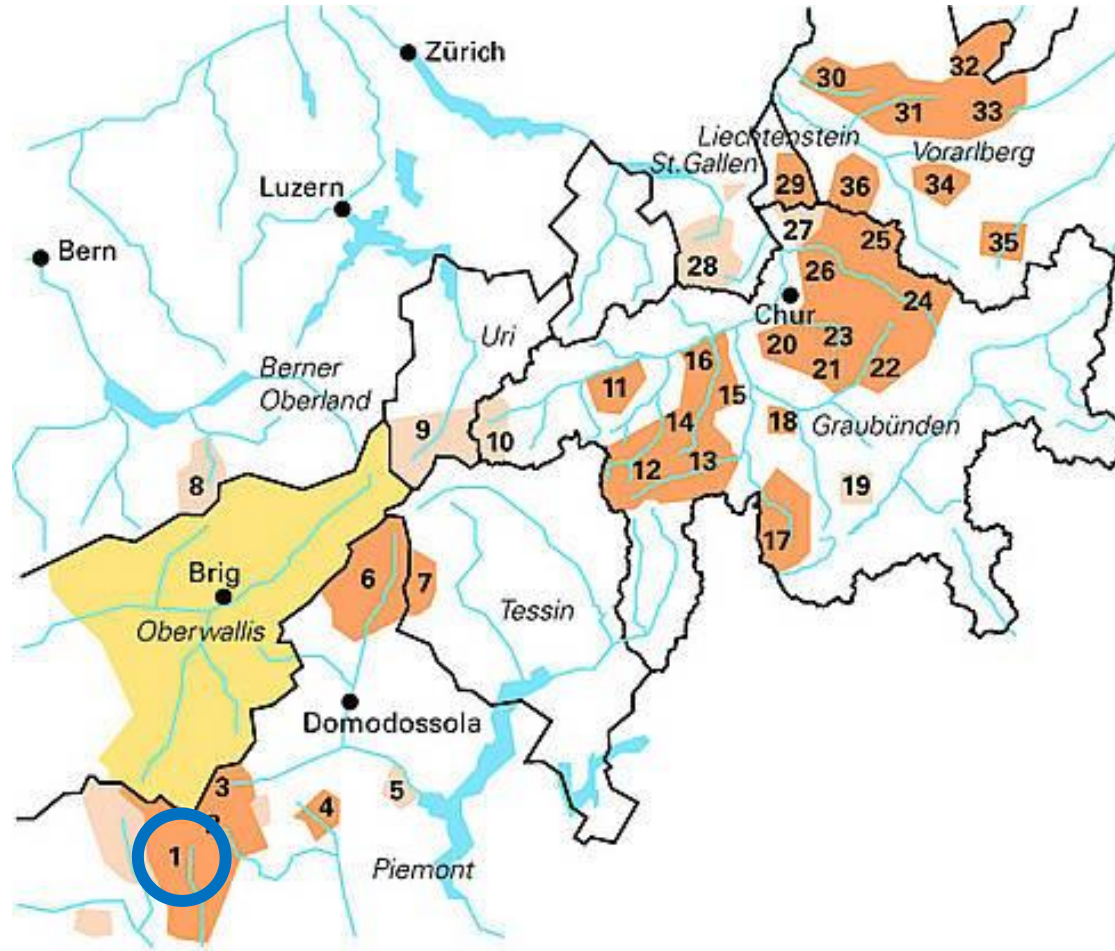(Maxwell & Hughes 2006, Gaeta et al. 2022)
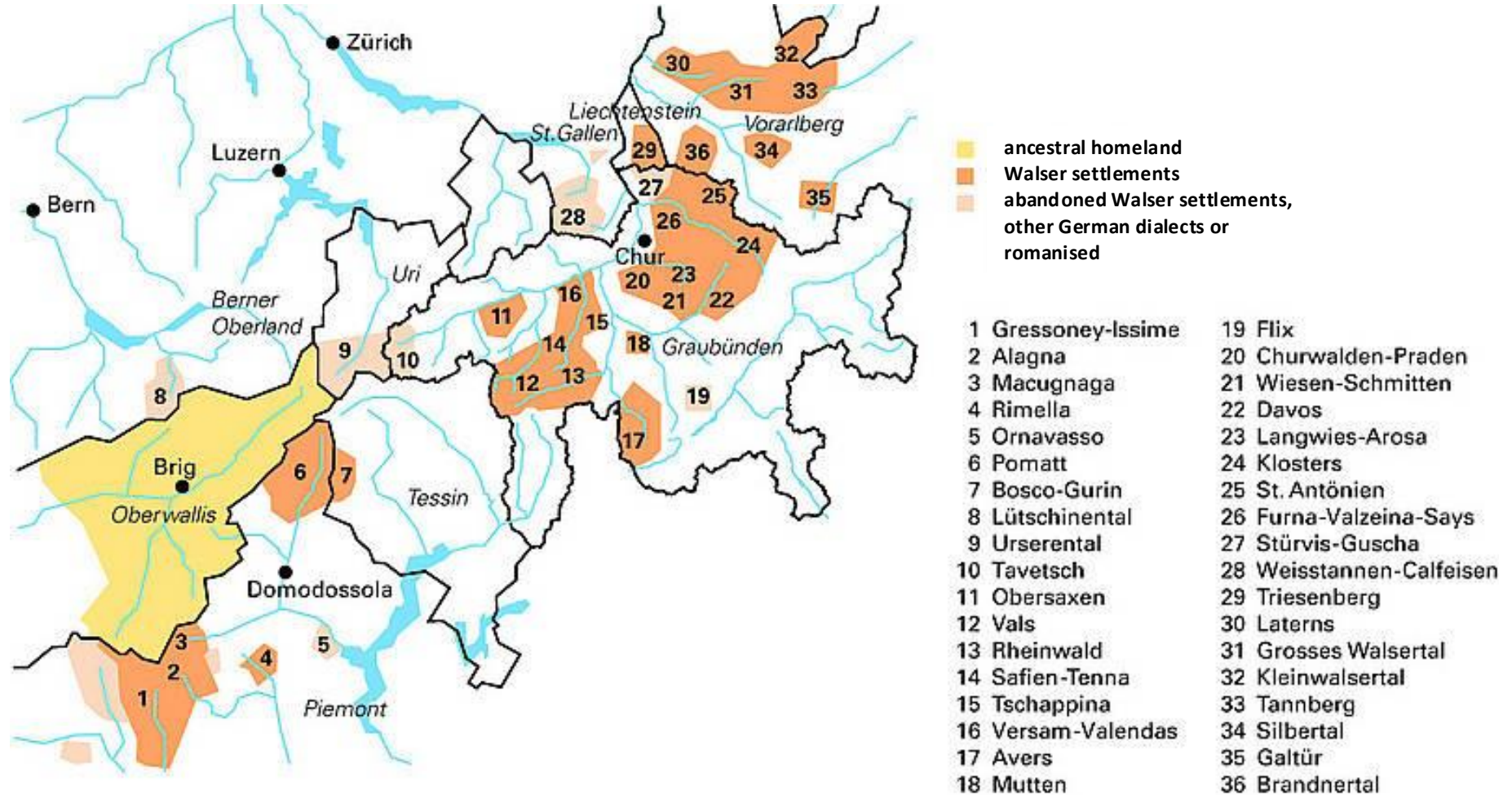
The Walser area – Highest Alemannic

(Bohnenberger 1913, Zinsli 1991, Zürrer
1982, 1999, 2009, Dal Negro 2004)

The Walser area – Highest Alemannic

ancestral homeland
Walser settlements
abandoned Walser settlements, other German dialects or romanised

1 Gressoney-Issime
2 Alagna
3 Macugnaga
4 Rimella
5 Ornavasso
6 Pomatt
7 Bosco-Gurin
8 Lütschinental
9 Urserental
10 Tavetsch
11 Obersaxen
12 Vals
13 Rheinwald
14 Safien-Tenna
15 Tschappina
16 Versam-Valendas
17 Avers
18 Mutten
19 Flix
20 Churwalden-Praden
21 Wiesen-Schmitten
22 Davos
23 Langwies-Arosa
24 Klosters
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27 Stürvis-Guscha
28 Weisstannen-Calfeisen
29 Triesenberg
30 Laterns
31 Grosses Walsertal
32 Kleinwalsertal
33 Tannberg
34 Silbertal
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The Walser villages in the Lys Valley

- Foundation: Second half of the 13th century
- Constant contacts and commercial exchanges with the German-speaking areas of Switzerland and southwestern Germany (in particular in the c. 14th-19th)
- 1861-1914: decreasing and subsequently interrupted contacts
- 1922-1945: total repression by the fascist regime
- After 1945: scarce contact with Switzerland/Germany
  - language decay; total eclipse of German as *Dachsprache*; widespread multilingualism: Walser / Piedmontese / Italian / French

	1901		1978		2001		
	P	S	P	S	P	S (Sigg)	S (CELE)
Gressoney Saint-Jean	949	882 (93%)	581	397 (68%)	789	430 (54%)	631 (80%)
Gressoney La Trinité	170	170 (100%)	193	102 (53%)	297	–	202 (68%)
Issime	1617	909 (56%)	407	310 (76%)	403	230 (57%)	322 (80%)

- The Alpine Minority projects in Turin:
  - DiWaC (2015-2017)
  - ArchiWals (2017-2020)
  - CLiMAlp (2020-2024)
    - www.climalp.org
  - Walser German
    - Aosta Valley:
      - Gressoney / Greschoney
      - Issime / Eischeme
    - Piedmont:
      - Formazza / Pomatt
      - Rimella / Remmalju
      - Alagna / Im Lande
  - Galloromance
    - Occitan
    - Franco-Provençal

- The **CLiMAlp Archive** consists of two components (Gaeta et al. 2022):
  - A dictionary which for Walser German basically results from the digitalization of the dictionaries.
  - A corpus which is coindexed with the dictionary and displays the corpus occurrences of the dictionary entries.

	Texts	Types	Tokens
Titsch (Gressoney)	659	12320	92580
Töitschu (Issime)	368	7606	111829

The effects of language contact

- It has also been observed that extra-linguistic factors like language contact may start dramatic processes of simplification leading to intrinsically less complex languages like pidgins and creoles (McWhorter 2005, Trudgill 2009, 2011).

- In addition, contact in context of language attrition can be treated as a step towards the reduction of the multilingual repertoire, namely language decay and death (Riehl 2009: 191).

The reductive effect of contact in English

- Notoriously, English shows a long impact of contact and has been claimed to stand apart from the rest of the Germanic family for a number of features (McWhorter 2005: 279-284):
  - loss of verb prefixes / rise of phrasal verbs
    - *oberstan > to break apart, inlædan > to bring in*, etc.
  - loss of the infinitive marker *-en*, and generalization of the markers *to* and *-ing* for signaling verbal non-finiteness
  - loss of verb-marking suffixes that served derivationally as word-building devices:
    - "*-sian, -ettan*, and *-læcan* served to make nouns and adjectives into verbs (*ricsian* "to reign," *licettan* "to pretend," *geanlæcan* "to unite" …) … were flushed away"
  - loss of derivational pairs of directional adverbs (allative / ablative):
    - *her, hider, heonan > here, herefrom*
  - loss of sentence bracket / verb-final position

Contact-induced generalization of conversion?

- The widespread diffusion of verbal conversion in English is likely to be due to massive reductive changes resulting from the overwhelming processes of contact which have characterized its history (Vogel 2000).
    - "As a great **many native nouns and verbs had thus come to be identical in form** … and as **the same thing happened with numerous originally French words** … it was quite natural that the speech-instinct should take it as a matter of course that **whenever the need of a verb arose, the corresponding noun might be used unchanged**, and vice versa". (Jespersen 1912: 164-5)
- Disruption of lexical strata in the English lexicon with the effect of combining native and non-native morphemes:
    - *doable, starvation, womanize, prettify*, etc.

The conservative effect of language contact

On the other hand, the therapeutic role of contact has been observed ever since, especially in isolated communities:

Schott (1842: 176)

Moulton (1941: 46)

Gegen die annahme daß jene vollen silvischen endsylben ein erbstück germanischer vorzeit seien, sprechen übrigens zwei thatsachen: die unordnung in ihrem gebrauch, und die nachbarschaft romanischer mundarten welche die endsylben auf gleiche weise behandeln. Das leztre scheint um so wichtiger, da sich gerade Rima, Rimella, Issime in dieser hinsicht auszeichnen, und gleichfalls dem Cimbr. die formen mâno, ocso, prunno, acsala, güllanar, sbestar, teldar, leban (mond, ochse, brunnen, achsel, goldener, schwester, thäler, leben), geläufig sind. Die

Predicate adjectives are also inflected in most of the Upper Bernese dialects,[58] and in the cantons of Uri[59] and Glarus.[60] Like the use of *kommen* as the auxiliary of the passive, this phenomenon therefore occurs in a group of dialects that lie along the language border, next to Romance languages in which predicate adjectives are always inflected. This need not necessarily be a result of Romance influence, since predicate adjectives were often inflected in OHG.[61] Yet it is a striking fact that the Alemannic dialects to the north use the uninflected form exclusively in predicate use. This makes it seem very probable that in the south the inflected form was kept and generalized because of Romance influence.

The effects of language contact

- How can we reconcile these two views?
  - "[S]mall and isolated linguistic communities ... tend to strongly preserve inherited linguistic structures, which may be regarded as a reflex of conservatism in many respects, e. g. an attempt to express their genuine local identity and their personal ties to the region". (Braunmüller 2016: 58)
  - "The speakers of small and isolated languages use different languages for internal and external communication. Therefore bi- or trilingualism is quite ubiquitous in these societies. But **functional multilingualism or diglossia** prevent simplifications of their internal language ... there are no L2-learners of these vernaculars, which has the effect that L2-simplifications (i. e. decline of structural complexity) are unlikely to occur". (ib.)

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Gressoney and Issime

- Lys Valley in Aosta Valley (French as co-official language)
  - Gressoney:
    - Border minority (*Grenzminderheit*) with Switzerland
    - Long German-speaking tradition (German / Italian as H-Code)
  - Issime:
    - Surrounded by Romance communities
    - Strict connection with Francophony (French as H-Code)
  - The territorial continuity between the communities (which are 15 km distant) is interrupted by the Franco-Provençal community of Gaby.

Two different islands…

Table 1: Linguistic uses in Gressoney and Issime in the 19th century (Zürrer 2009: §52).

Gressoney	H variety	German written language	
	L variety	German dialect	
Issime	H variety	Ø	French written language
	L variety	German dialect	Franco-Provençal dialect

- Gressoney qualifies as a canonical language island in which the relation with the ancestral region is accompanied by the crucial role of German as *Dachsprache*.
- Issime testifies of a very different history in which German never played such a role while a Franco-Provençal variety was part of the repertoire ever since.

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The strange case of Issime
[Schott 1842: 135, Zinsli 1991: 278, Zürrer 2009: 96]

- Since its foundation Issime displays a radically distinct picture in which the contact with the surrounding landscape has always been quite strict.

- Before the Alemannic colonization the place was an old settlement with an autochthonous population speaking a Franco-Provençal variety.

- When the Walser German immigrants settled the area, the two linguistic groups gave rise to a linguistically mixed place, in which Walser German and Franco-Provençal speakers lived side by side for centuries, although in separate communities.

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- This resulted into a variety that in the 19th century presented peculiar features, as witnessed by Albert Schott who during his visit of Issime did not understand a single syllable and had to speak French with the local population, in contrast to Gressoney where he suddenly found himself in the middle of Germany.

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Issime as a perturbed island
[Angster & Gaeta 2021, Gaeta in press]

- In contrast to the canonical language island of Gressoney, Issime qualifies as a **perturbed island** in which bilingual adults with different mother tongues live together for a certain time also contracting mixed marriages.
  - "[I]ncomplete second language acquisition (as is typical of adult language learners) evidently … leads to less complexity, i. e. to more simplification and regularity in grammatical structures." (Braunmüller 2016: 67)
- This may have led to the development of a process of **creoloidization** – i.e., a process consisting of **admixture** and **simplification** – that generally results from the presence within a community of a high number of immigrated adults who acquires and uses the local variety as a lingua franca in transregional communication (Trudgill 2009: 109).

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Word-formation in Walser German

- The different contact situation and its consequences will be tested on the ground of the three main areas of word-formation:
  - Verb-forming patterns
  - Adjective-forming patterns
  - Noun-forming patterns
- In particular:
  - Generalization of conversion, pointing to lexical multifunctionality
  - Disruption of lexical strata with regard to the native/non-native distinction

Verb-forming patterns

Titsch, Gressoney	Tot.
[... *-iere*]$_V$ *dat-iere* 'to date' *spion* 'spy' → *spioniere* 'to spy'	93 28%
[N/Adj-*rò*]$_V$ *chälb* 'calf' → *chälbrò* 'to calve' *chòrz* 'short' → *chòrzrò* 'to shorten'	45 13%
Conversion N → V-*ò* *bluet* 'blood' → *bluetò* 'to bleed' *flaschter* 'plaster' → *flaschtrò* 'to plaster'	163 48%
Conversion Adj/N → V-*e* *top* 'dark' → *toppe* 'to darken' *wässer* 'water' → *wässre* 'to water'	36 11%
Tot.	337 100%

Töitschu, Issime	Tot.
[... *-urun*]$_V$ *datt-urun* 'to date' *part-urun* 'to leave' *packet* 'packet' → *packuturun* 'to wrap' *schlecht* 'straight' → *schlechturun* 'to straighten' *chalb* 'calf' → *chalburun* 'to calve'	296 58%
Conversion N → V-*un* *dib* 'thief' → *dibun* 'to steal' *hous* 'house' → *housun* 'to edify'	173 34%
Conversion Adj/N → V-*en* *tup* 'dark' → *tuppen* 'to darken' *nacht* 'night' → *nachten* 'to get dark'	38 7%
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Adjective-forming patterns

Titsch, Gressoney	Tot.
[V-*bar*]_{Adj} *foare* 'to drive' → *foarbar* 'drivable'	26 6%
[V/X-*sam*]_{Adj} *biege* 'to bend' → *biegsam* 'flexible'	15 3%
[N/V/X-*léch*]_{Adj} *ér* 'honor' → *érléch* 'honorable' *erpe* 'to inerit' → *erpléch* 'hereditary'	88 20%
[N/V/X-*ég*]_{Adj} *isch* 'ice' → *ischég* 'icy' *siede* 'to boil' → *siedég* 'boiling, hot'	223 50%
[N/Adv-*en*]_{Adj} *bli* 'lead' → *bli-en* 'leaded'	33 7%
[N/X-*ésch*]_{Adj} *hémmel* 'sky' → *hémmlésch* 'celestial'	61 14%
Tot.	446 /100%

Töitschu, Issime	Tot.
[N/V/X-*lljig*]_{Adj} *gift* 'poison' → *giftlljig* 'poisonous' *handeln* 'to deal' → *handlljig* 'able'	28 18%
[N/X/V-*ig*]_{Adj} *vöir* 'fire' → *vöirig* 'fiery' *droalig* 'weird'	99 65%
[N/Adv-*en*]_{Adj} *zin* 'tin' → *zin-en* 'stannous'	25 16%
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Noun-forming patterns

Abstract nouns – Titsch, Gressoney	Tot.	Abstract nouns – Töitschu, Issime	Tot.
[V-*òng*]$_N$ *fiere* 'to lead' → *fieròng* 'direction' *usstelle* 'to exhibit' → *usstellòng* 'exhibition'	146 34%	[V-*unh*]$_N$ *housun* 'to edify' → *housunh* 'apartment' *rechtnun* 'to count' → *rechtnunh* 'count'	6 3%
Conversion V → N *loufe* 'to run' → *louf* 'run' *redò* 'to talk' → *red* 'talk'	72 17%	Conversion V → N *chrigen* 'to fight' → *chrig* 'fight' *trommun* 'to cut' → *trom* 'cut'	28 12%
Apophonic alternation *bisse* 'to bite' → *bés* 'bite' *sprenge* 'to jump' → *spròng* jump'	93 21%	Apophonic alternation *helfun* 'to help' → *hilf* 'help' *sprinnhen* 'to jump' → *sprunh* jump'	11 5%
Semelfactive abstracts [V/N-*età*]$_N$ *ròtschò* 'to slip' → *ròtschetò* 'slip' *oug* 'eye' → *ougetò* 'glance'	85 20%	Semelfactive abstracts [V/N-*etu*]$_N$ *lachen* 'to laugh' → *lachetu* 'laugh' *reche* 'rake' → *rechetu* 'raking'	160 68%
Other V+Suff *dienò* 'to serve' → *dientscht* 'service' *toufe* 'to baptize' → *toufé* 'baptism'	36 8%	Other V+suff *gschwellen* 'to blow' → *gschwulscht* 'bulge' *taufen* 'to baptize' → *taufi* 'baptism'	29 12%
Tot.	432 / 100%	Tot.	234 / 100%

Noun-forming patterns

Abstract nouns – Titsch, Gressoney	Tot.	Abstract nouns – Töitschu, Issime	Tot.
[V-*òng*]$_N$ *fiere* 'to lead' → *fieròng* 'direction' *usstelle* 'to exhibit' → *usstellòng* 'exhibition'	146 34%	[V-*unh*]$_N$ *housun* 'to edify' → *housunh* 'apartment' *rechtnun* 'to count' → *rechtnunh* 'count'	6 3%
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Tot.	432 / 100%	Tot.	234 / 100%

Noun-forming patterns

Deverbal nouns – Titsch, Gressoney	Tot.	Deverbal nouns – Töitschu, Issime	Tot.
[V-*òng*]$_N$ *fiere* 'to lead' → *fieròng* 'direction' *usstelle* 'to exhibit' → *usstellòng* 'exhibition'	146 34%	[V-*unh*]$_N$ *housun* 'to edify' → *housunh* 'apartment' *rechtnun* 'to count' → *rechtnunh* 'count'	6 3%
Conversion V → N *loufe* 'to run' → *louf* 'run' *redò* 'to talk' → *red* 'talk'	72 17%	Conversion V → N *chrigen* 'to fight' → *chrig* 'fight' *trommun* 'to cut' → *trom* 'cut'	28 12%
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Tot.	432 / 100%	Tot.	234 / 100%

Semelfactive constructions with light verbs

(1) a. *òn déewe en familiò noa der andra* **hät dschin ofnetò** *bròt* **gmacht**
and while a family after the other has his batch bread made
'and while a family after the other made its batch of bread'

b. *Vòm leifer en gròsse eihòre ...* **hätt en ougòtò kät**
from.the slider a big squirrel has a glance given
'From the sliding window a big squirrel cast a glance'

(2) a. *Ich bin kanhen* **machun a spazirutu** *mit Lueisi*
I am gone make a walk with L.
'I went for a walk with Lueisi.'

b. *Dar oaltu* **het** *wol* **keen an rawutu** *wa déi hen sicher nöit khüart*
the old has well given a scream but they have sure not heared
'The old man let out a cry, but they did not hear it.'

Noun-forming patterns

Agent nouns – Titsch, Gressoney	Tot.
[V-*er*]$_N$ $\leftrightarrow$ |AGENT| *moalò* 'to paint' → *moaler* 'painter'	91 37%
[V-*er*]$_N$ $\leftrightarrow$ |INSTRUMENT| *chleffe* 'to beat' → *chelffer* 'egg whisk'	31 13%
[N-*er*]$_N$ $\leftrightarrow$ |AGENT| *chole* 'coal' → *choller* 'coalman'	30 12%
[X-*er*]$_N$ $\leftrightarrow$ |AGENT| *reib-er* 'robber'	25 10%
[X-*er*]$_N$ $\leftrightarrow$ |INSTRUMENT| *chlòpper* 'clothespin'	6 2%
[[Adj/N]$_i$ V-*er*]$_N$ $\leftrightarrow$ |AGENT REL ADJ/N$_i$| *chemmò-fäger* 'chimney sweeper'	52 22%
[N$_{[country]}$ -*er*]$_N$ $\leftrightarrow$ |ETHNIC NOUN| *Goaby* 'Gaby' → *goaben-er* 'inhabitant of G.'	10 4%
Tot.	245 / 100%

Agent nouns – Töitschu, Issime	Tot.
[V-*er*]$_N$ $\leftrightarrow$ |AGENT| *sinhen* 'to sing' → *sinher* 'singer'	67 56%
[V-*er*]$_N$ $\leftrightarrow$ |INSTRUMENT| *bischtun* 'to rush' → *bischter* 'pestle'	9 8%
[N-*er*]$_N$ $\leftrightarrow$ |AGENT| *vojedŝche* 'journey' → *vojedŝcher* 'traveller'	11 9%
[X-*er*]$_N$ $\leftrightarrow$ |AGENT| *chriem-er* 'merchant'	4 3%
[X-*er*]$_N$ $\leftrightarrow$ |INSTRUMENT| *déckh-er* 'cover'	6 5%
[[N]$_i$ V-*er*]$_N$ $\leftrightarrow$ |AGENT REL ADJ/N$_i$| *zéit-esser* 'time-waster'	7 6%
[N$_{[country]}$ -*er*]$_N$ $\leftrightarrow$ |ETHNIC NOUN| *Élljini* 'Lillianes' → *élljen-er* 'inhabitant of L.'	15 13%
Tot.	119 / 100%

Noun-forming patterns

Agent nouns – Titsch, Gressoney	Tot.	Agent nouns – Töitschu, Issime	Tot.
$[V\text{-}er]_N \leftrightarrow$ |AGENT| *moalò* 'to paint' → *moaler* 'painter'	91 37%	$[V\text{-}er]_N \leftrightarrow$ |AGENT| *sinhen* 'to sing' → *sinher* 'singer'	67 56%
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Conclusion

- Low-density languages have much to offer.
- In contrast to the canonical language island of Gressoney, the perturbed island of Issime shows:
  - disruption of lexical strata
  - generalization of one verb-forming suffix in contrast to the stability of highly complex conversion (showing two different patterns)
  - loss of verb-based adjective-forming patterns in contrast to the stability of noun-based patterns
  - loss of regular abstract-forming patterns and reduction of irregular (apophonic) ones in contrast to the generalization of semelfactives
  - reduction of base-less agent nouns and of synthetic compounds
- The simplification found in perturbed islands stands against the maintenance of complexity in canonical islands.

Many thanks!

Tank vél mòal!

Gottsch erganhs!

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