2.3 Swabian Relatives

Variation in the Use of the *wo*-relativiser

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2.3.1 Introduction

Numerous studies have found that grammatical variables are not as socially stratified as phonological ones, causing some sociolinguists to theorise that they lie outside the range of the sociolinguistic monitor (Labov 1993; see Levon, Buchstaller and Mearns 2020; Labov et al. 2011; Lavandera 1978; Scherre and Naro 1992; Walker 2020). Cheshire (2003:245) contends, however, that morphosyntactic variation is merely "different" from phonological variation and, indeed, is often "intricately involved in the construction of social meaning" (see Moore and Carter 2015; Moore, this volume) or in the conveyance of semantic and pragmatic information (see Cheshire, Adger, and Fox 2013; Meyerhoff et al. 2020).[1]

To investigate these claims, this chapter aims to explore one type of grammatical variation common in several southern German varieties: variation between traditional relative pronoun usage prescribed in standard German (e.g., *der, die, das, dem, den, dessen, deren*) (henceforth referred to as *d*-relatives) and the use of *wo* 'where' as a relativiser common in the spoken language. Some linguists have proposed that *wo*-relatives spread from referring to notions of place to a broader set of linguistic environments (Brandner and Bräuning 2013). Many have argued that pronouns originally used as interrogatives are logical candidates for relativisers due to their close relationship with indirect questions: both involve phrases with declarative illocutionary force and exhibit a high level of referentiality (Keenan and Hull 1973; Matos and Brito 2013; Sankoff and Brown 1976). There is also considerable evidence that locative adverbs have evolved into generalised relative markers from other languages (e.g., Brook 2011; Katis and Nikiforidou 2010; Krapova 2010). To date, no sociolinguistic variation analysis has been conducted on the use of *wo*-relatives in German dialects. Thus, this chapter aims to answer three questions: (1) what are the internal and external factors influencing the use of *wo* as a relative marker in Swabian German, (2) is the usage of the *wo*-relativiser stable or changing and, if changing, (3) what are the drivers and/or inhibitors of the change?

2.3.2 Theoretical Background

2.3.2.1 English Relatives

The system of relativisation has been extensively researched in many varieties of English by both sociolinguists and formal syntacticians (e.g., Cheshire 1996; Cheshire, Adger, and Fox 2013; Tagliamonte, Smith, and Lawrence 2005; Meyerhoff et al. 2020), from a socio-historical perspective (e.g., Ball 1996; Hendery 2012; Romaine 1982, 1992), in spoken and written genres (e.g., Guy and Bayley 1995; Hinrichs, Szmrecsanyi, and Bohmann 2015; Jankowski 2009, 2013), and in vernacular speech (e.g., Cheshire et al. 2013; D'Arcy and Tagliamonte 2010; Jankowski 2009, 2013; Levey 2006, 2014; Tagliamonte et al. 2005).

Much early sociolinguistic work has suggested that relative pronoun usage is a 'covert variable' not readily available for social evaluation (Tottie and Rey 1997:245). However, researchers in the 1980s and 1990s working within the variationist framework began to find that variation in relative pronoun usage was not only constrained by linguistic conditioning and syntactic position but was also correlated with various social factors, such as genre, style, education, and socio-economic status. Romaine (1982) observed that *wh-* pronouns are generally restricted to written texts and to specific groups of speakers, that is, educated individuals with middle-class aspirations. Quirk (1957), and later Tottie (1995), found that *zero* relatives are strongly favoured with personal pronouns that are the subject of the relative clause, while *wh*-relatives are correlated with speakers' educational level. Guy and Bayley (1995) established that the channel of communication (spoken or written), the animacy of the antecedent, the syntactic position of the relativiser, and the distance between the antecedent and the relativiser all have significant effects on speakers' choice of relative pronouns. Cheshire's (1996) investigation of the lexical item *that* revealed that relative pronouns can serve as a linguistic 'sign-post' in communication, reflecting "general social principles of cooperative activity between individuals" (Cheshire 1996:392).

Recently, research on relative pronoun usage has focussed on the differences between changes imposed from above (such as social status, education, prescriptivism, and language ideologies) and those that arise from within (such as grammatical and structural constraints). Investigating relative pronoun usage in three varieties of English, Tagliamonte, Smith, and Lawrence (2005) uncovered both universal constraints (e.g., clause length, clause complexity, level of education and local involvement) as well as dialect-specific factors. D'Arcy and Tagliamonte (2010:384) argued that speakers' use of relative pronouns "evince their social position within the community and indicate accommodation to their interlocutors") (see also Meyerhoff et al. 2020). Cheshire, Adger, and Fox (2013)

observed that the emergence of relative *who* has developed into a 'topic-marking strategy' in Hackney London English linked to the multiethnicity of the friendship network. Investigating lexical density and information status, Jankowski (2013) uncovered "changing stylistic notions" in relative usage brought on by prescriptivist conventions and literacy ('change from above'). Hinrichs, Szmrecsanyi and Bohmann (2015) adopted a machine-learning-based method to automatically retrieve *zero* relative clauses and evaluate 22 language-internal, language-external, stylistic, and prescriptivism-related predictors. Their multivariate analysis exposed a complex set of factors driving relativiser choice, principal among them genre and prescriptivism. Notably, a dominant standard language ideology is prevalent in varieties of English, suggesting that "prescriptive norms and ideologies of standard speech are determinants of variation among relative pronoun choice" (D'Arcy and Tagliamonte 2010:384). These works and many others have firmly established that both intra- and extra-linguistic factors play significant roles in speakers' choice of grammatical variables, such as relative pronouns.

2.3.2.2 German Relatives

The wealth of research on relatives in various English varieties leads to the question: which of these factors and findings are relevant for varieties of German? We start first with a description of the German system of relativisation. Modern standard German provides three[2] primary ways to introduce a relative clause (Duden 2016:1045–1055): (a) inflected *d*-pronouns (e.g., *der, die, das, den, dem, deren, dessen*), (b) inflected *w*-pronouns (e.g., *welcher, welche, welches, welchen, welchem*), and (c) non-inflected complementisers (e.g., *wo* 'where'; *wie* 'how'; 'as'; *was* 'what'; *wer* 'who'; and *als* 'as', 'than', 'when', 'while') which are common in many southern German varieties. The inflected *w*-pronouns are generally restricted to written language or to highly stylised spoken varieties; hence, the primary variation in relative pronoun usage in south-western Germany is between the case-marked *d*-relative pronouns and the invariant complementiser, *wo,* as demonstrated in example (1):

(1) Angela-1982:[3]
es gibt erfolgreiche Mensche ***wo*** *Karriere gmacht hen*
'there are successful people **who** have made their careers'

und jetzt en Haufe Geld verdienet
'and now earn a ton of money'

es gibt au andere die vielleicht gar net so viel Geld hen
'there are also others **who** perhaps don't have nearly so much money'

Pittner (2004) provides a functional typology for the particle *wo*. First, and most common, *wo* is used as an interrogative adverb, as in (2):

(2) Herbert-1982
wo warn mr dabei?
'**where** were we in the process?'

Second, *wo* is commonly used as a locative adverb, as in (3):

(3) Angela-2017
Schwââbe bleibet gern dâ wo se gebore sin
'Swabians like to stay there **where** they are born'

Less commonly, and only in spoken language Pittner says, *wo* can be used as a temporal adverb, as in (4):

(4) Jurgen-1982
am Ãfang wo se sich kenneglernt
'in the beginning **where/when** they met'

Pittner considers (4) to be non-standard usage; in standard German, the conjunction *als* 'as' or 'when' would typically be used.

Also considered non-standard, Pittner states that invariant *wo* can be used as a relative pronoun, as in (5):

(5) Angela-1982
ds beschte Daitsch wo s gib
'the best German **where/that** there is'

The standard German equivalent for example (5) requires the nominative neuter pronoun, *das,* as is: *das beste Deutsch, das es gibt*. Duden (2016:1050–1052) clearly declares examples (1), (4) and (5), in which *wo* refers to a person or thing, to be *landschaftlich salopp* 'country slang' (Duden Online 2018) and *nicht standardsprachlich* 'not standard language' (Duden 2016:1052).

Previous analyses of relative pronouns in German have focussed solely on formal, linguistic constraints (i.e., syntactic structure, semantic content, prosodic realisation, and functional role) (Bayer 1984; Bidese, Padovan, and Tomaselli 2012; Brandner and Bräuning 2013; Fleischer 2006, 2004, 2005; Pittner 1995, 2004; van Riemsdijk 1989; Salzmann and Seiler 2010; Schaffranietz 1999; Schubö et al. 2015; de Vries 2002; Weise 1916). Salzmann and Seiler's (2010) analysis of variation in relative clauses in Swiss German showed that, while the use of resumptive pronouns is obligatory for obliques and impossible for subjects and direct object clauses, it is optional with datives, influenced by the morphosyntactic environment, in particular, case matching and the semantics of the head noun (Salzmann and Seiler 2010:79–80). Günthner (2002) investigated the polyfunctional use of *wo* (temporal, causal, and conjunctive) in spontaneous conversations

across several middle and southern Germany varieties. She opined that the *wo*-construction is "ambiguous", interpretable solely from the pragmatics of the situation (i.e., context and performance):

> *Die jeweilige Interpretation scheint also nicht am Konnektor ‚wo' selbst festmachbar zu sein, vielmehr markiert ‚wo' einen Zusammenhang zwischen zwei Syntagmen, wobei das eine dem anderen untergeordnet ist und die im syntaktisch untergeordneten Teilsatz präsentierte Information zugleich als evident und nicht weiter fraglich gilt (Günthner 2002:25).*
>
> The particular interpretation thus does not seem to be fixed on the 'wo' connector itself, rather 'wo' marks a relationship between two syntagmas, in which one is subordinate to the other, and the information in the syntactically subordinate clause is simultaneously presented as evident and no longer questionable (my translation).

Despite the considerable descriptive and pragmatic investigations of *wo*-relatives, no studies have conferred any consideration to extralinguistic factors, such as speaker age, sex, education, occupation, community, orientation/identity. Hence, the dire need for the current socio-grammatical investigation.

2.3.3 Data and Methods

The current investigation follows the quantitative variationist sociolinguistic framework (Labov 1963, 1966, 1972, 1984) in analysing the use of *wo*-relatives in Central Swabian, a high Alemannic dialect spoken in south-western Germany by around 820,000 people or 1% of the German population. This section describes the speech communities, the study participants, the data collection methods, the linguistic variable, and the internal and external predictors evaluated.

2.3.3.1 The Speech Communities

Two communities were selected for this research: the large international city of Stuttgart and its surrounding suburbs and the mid-sized town of Schwäbisch Gmünd and its surrounding rural villages. Stuttgart is the heart of Swabia. It is a large urban centre with over one million inhabitants and is home to many well-known global firms, such as Daimler-Mercedes-Benz, Porsche, Bosch, and Siemens. Schwäbisch Gmünd lies 100 kilometres east of Stuttgart. With 60,000 inhabitants, it is a typical mid-sized, semi-rural town, surrounded by small villages with 77% of the land dedicated to woodland and agriculture.

2.3.3.2 The Study Participants

The data were drawn from a real-time panel study of 20 native Swabian speakers, who were recorded in 1982 and again in 2017 (see Table 2.3.1).

Table 2.3.1 Corpus of 20 Swabian panel speakers, in Stuttgart and Schwäbisch Gmünd, recorded in 1982 and 2017

		Schwäbisch Gmünd		*Stuttgart*		*Total*
		Hi Edu	*Lo Ed*	*Hi Ed*	*Lo Ed*	
1982	Men	0	1	0	0	1
31–60 years	Women	0	2	0	1	3
1982	Men	6	0	4	0	10
18–30 years	Women	3	1	1	1	6
2017	Men	0	1	0	0	1
61–90 years	Women	0	2	0	1	3
2017	Men	6	0	4	0	10
31–60 years	Women	3	1	1	1	6
Totals		18	8	10	4	
		26		14		40

Sixteen of the 20 speakers are of the same age group (i.e., 18–25 in 1982 and 53–60 in 2017), and 14 have post-secondary education (i.e., completed the *Abitur* 'German college preparatory exam') and are of similar socio-economic status (i.e., middle class). The participants are balanced for two sexes (as self-reported in the demographic questionnaire completed at the end of the interview). The speakers come from two different social networks: 13 from the semi-rural township of Schwäbisch Gmünd and seven from the large urban centre of Stuttgart. In 1982 all participants were family members and close friends of the interviewers with 'strong ties' in closed, tight-knit communities (Milroy 1987). By 2017, many speakers had moved away and grown apart, and both communities had evolved into more open and dispersed social networks with 'weak ties' (Milroy 1987). This diversified sample provides the opportunity to investigate real-time change in relative pronoun usage in different communities (urban versus semi-rural), speaker sexes (men versus women), and levels of education (high versus low) across a 35-year timespan (1982 versus 2017).

2.3.3.3 The Interviews

The data were collected via Labovian-style sociolinguistic interviews (Labov 1984), covering topics about the speakers' childhood games, hobbies, neighbourhood, friends and family, and attitudes towards the Swabian language and culture. In order to increase compatibility across years, the same survey instrument was used in both years. All interviews were conducted by native Swabian speakers matched for key social

characteristics (e.g., same age, gender, education level), with the principal investigator in attendance in the role of a friend-of-a-friend (Milroy and Milroy 1985). Interviews were conducted in the speakers' homes, typically over coffee and cake, with goal of replicating the two recording periods as closely as possible. Transcriptions were completed by native German speakers, university students at the University of Tübingen, using ELAN (Nagy and Meyerhoff 2015; Wittenburg et al. 2006) following a structured orthography developed specifically for Swabian. The 40 interviews comprise 42.1 hours: 17.9 hours (1075 minutes) from 1982 and 24.2 hours (1451 minutes) from 2017.

2.3.3.4 The Linguistic Variable

In defining syntactic variables, Cheshire (1987:269) points out several methodological challenges, chief among them is finding a method to determine whether different variants constitute different ways of saying 'the same thing' (Cheshire 2016:264). Although some linguists propose identifying relative clauses semantically (including any type of clause that modifies a nominal phrase (e.g., Keenan and Comrie 1977:63; Lehman 1984:47), the current analysis is based on a strict syntactic definition of (grammatical) functional equivalency (Fleischer 2004; de Vries 2002). This avoids the issue of 'semantic equivalence', which is subjective and likely a function of differing discourse strategies than to the specific syntactic choice of a relative pronoun. Hence, this investigation follows de Vries (2002:14–15) who offers two 'defining' properties and one 'essential' property for identifying relative clauses in German. Consequently, a relative clause is one that is:

1. conveniently disambiguated in German by a finite verb-final syntactic structure;
2. connected to the matrix clause by a 'semantically shared' pivot constituent or relative clause introducer, i.e., either a *d*-relative or a *wo*-relative;
3. independent from the matrix clause in its semantic and syntactic roles.

Thus, it follows that other relative-like structures such as the following, all of which are quite rare in spoken German, have been excluded from the analysis:

a. participial constructions, e.g., *der in seinem Büro arbeitende Mann* 'who in his office working man' (Keenan and Comrie 1977:64);
b. pronominalisation, in which a personal pronoun is used as an anaphoric marker in place of a relative pronoun, e.g., *she teaches young people, they [who] have not finished school yet*;

c. reduced relatives and appositive structures, e.g., *the man, he [who] drove a blue car;*
d. unmarked relative clauses, in which only prosodic cues designate the presence of a relative.

2.3.3.5 The Corpus

Relative clauses are not very common in speech: less than 5% of all clauses in the current corpus are relatives. Following the criteria outlined above, relative clauses were manually extracted, hand-coded, and loaded into R Project for analysis (R Core Team 2014). This resulted in a total of 1446 relative clauses: 691 from 1982 and 755 from 2017. Overall relative usage shows 53% (n = 767) for *d*-relatives and 47% (n = 679) for *wo*-relatives, with the use of *wo* significantly more frequent in Schwäbisch Gmünd (41%, n = 456) than in Stuttgart (30%, n = 223) (p = 0.0004). Further detail on the numbers and types of relatives is provided in the ensuing analysis and results section.

2.3.3.5.1 Restrictiveness

When analysing relatives in English varieties, most researchers have typically excluded non-restrictive relative clauses because they tend to have different semantic and discourse functions, as well as different prosodic cues (Tagliamonte, Smith, and Lawrence 2005:85). In addition, non-restrictive relative clauses in English are "supposedly" categorically introduced by the pronoun *which* (Bohmann and Schultz 2011; Pullum 2009; Quirk 1957). However, in English, this distinction can be "fuzzy" (see Meyerhoff et al. 2020) and, in German, it is definitely questionable. For example, in a relative clause extraposition production experiment, Poschmann and Wagner (2016:36) ascertained that both restrictive and appositive clauses were "equally natural", when distance, temporal, and anaphoric elements were controlled for. However, to ensure that there is indeed no discernible or noteworthy restrictiveness difference with Swabian relatives, all relatives in the dataset were included in the analysis.

2.3.3.5.2 Locatives and Temporals

As previously discussed, a typical use of *wo* is when the antecedent noun is a physical place (locative) or a notion time (temporal), and indeed these clauses are a 'knock-out' condition in the Swabian corpus, showing 100% (n = 242) usage of *wo* as the relativiser. Hence, following standard variationist convention, these clauses were eliminated from the dataset, leaving a total of 1204 relative clauses for further analysis.

2.3.3.5.3 Resumptives

Before delving deeper into the analysis, it is important to point out that Swabian also has a resumptive relative, the doubly-filled complementiser: *der wo* 'he who' or *da wo* 'there that', for example,

(6) Ema-1982:
des seid die Faule-Weiber-Spätzle, ***die wo*** *durch Press dorchdricket*
'they are the lazy-wife-noodles, **those that** they put through the press'

(7) Louise-2017:
wie alt war dn der, ***der wo*** *Pfarrer worre isch*
'how old was he then, **he who** became [a] preacher'

This variant is considered characteristic of Swabian *von der Alb* 'from the countryside', reflective of rural and uneducated speech (cf. Labov (1972) 'sociolinguistic stereotype') and is highly stigmatised. Likely due to this stigmatisation and to increasing levels of education ('change from above'), this variant is in stark decline across both communities, from 9% and 11% of all relatives in 1982 to 2% and 3% in 2017. There were only 13 tokens in all 20 interviews in 2017, and those occurred exclusively with the older or less educated speakers.

2.3.3.6 The Predictors

Cheshire (1998:65) points out that "in variationist analyses we are limited in what we discover by what we set out to look for". Hence, since no sociolinguistic investigation has previously been conducted on *wo*-relatives, it is important to cast our net wide with the goal of uncovering the critical constraints influencing the choice of *wo* or *d*-relativisers in Swabian.

2.3.3.6.1 Internal Linguistic Predictors

Drawn from findings from other research on relative constructions, 16 previously attested internal constraints were selected for exploratory analysis in Swabian. In the following, each predictor is described, references to other relevant studies are cited, and the hypotheses of the current study are stated.

1. Restrictiveness: relative clauses with defining, essential, specifying, and/or propositional information were coded as 'restrictive', whereas those with non-essential, amplifying, supplementary, and/or parenthetical information were coded as 'non-restrictive' (Cheshire et al. 2013; Quirk 1957; Tagliamonte 2002).

- Hypothesis: based on findings from previous studies of German relatives, there will be no significant difference between restrictive and non-restrictive relatives in Swabian.

2. Place: antecedents were coded for referring to a specific physical place or location, to an abstract notion of place (e.g., "in a situation"), or not to any notion of place (Brandner and Bräuning 2013; Pittner 2004).
   - Hypothesis: since physical notions of place favour *wo* usage, abstract notions of place will also favour the use of *wo*.
3. Time: antecedents were coded for referring to a specific date or time, to an abstract notion of time (e.g., "before", "later", "at that moment"), or no reference to any notion of time (Pittner 2004).
   - Hypothesis: since specific notions of time favour *wo* usage, abstract notions of time will also favour the use of *wo*.
4. Antecedent Category: antecedents were coded for different grammatical categories, e.g., noun, pronoun, adverbial, etc. (Fleischer 2006; Hinrichs et al. 2015).
   - Hypothesis: due to their non-specificity with respect to grammatical gender, *wo*-relatives will more likely be favoured with adverbial antecedents.
5. Antecedent Case: antecedents were coded for case, i.e., nominative, accusative, dative, or genitive (Fleischer 2006; Hinrichs et al. 2015).
   - Hypothesis: following the *Accessibility Hierarchy* (Keenan and Comrie 1977), less explicit *wo*-relatives will be more common with antecedents in the more accessible positions, e.g., first nominatives, then accusatives, then datives.
6. Relative Case: relative pronouns were coded for case, i.e., nominative, accusative, dative, or genitive (Cheshire et al. 2013; Fleischer 2006; Hinrichs et al. 2015; Levey 2001; Rohdenburg 1996; Salzmann and Seiler 2010; Tottie and Rey 1997).
   - Hypothesis: following the *Accessibility Hierarchy* (Keenan and Comrie 1977), less explicit *wo*-relatives will be more common with relativisers in the more accessible positions, e.g., first nominatives, then accusatives, then datives.
7. Case Matching: relative pronouns were coded for whether the case between the antecedent and the relativiser were the 'same' or 'not' (Fleischer 2006; Salzmann and Seiler 2010).
   - Hypothesis: because *wo*-relatives are less explicit, they will more likely be favoured when the cases between the relativiser and antecedent head do not match.

8. Resumptive: relative clauses were coded for the presence or absence of the double complementiser, i.e., *der wo* 'that where' (Pittner 2004; Salzmann and Seiler 2010).
    - Hypothesis: due to their more explicit and direct nature, resumptive relatives will more likely be favoured with definite and human antecedents.
9. Animacy: antecedents were coded for 'animate', i.e., living, ambulatory things such as humans, animals, robots, or 'inanimate', i.e., non-living, immobile things, such as plants and concepts[4] (Cheshire et al. 2013; D'Arcy and Tagliamonte 2010; Levey 2006; Quirk 1957; Zaenen et al. 2004).
    - Hypothesis: as *wo* retains some of its original semantics, inanimate antecedents will more likely favour *wo*-relatives.
10. Definiteness: antecedents were coded for 'definite', i.e., containing a definite article, demonstrative or possessive pronoun, numeral, proper name or 'indefinite' (Hinrichs et al. 2015; Levey 2006; Tagliamonte et al. 2005; Meyerhoff et al. 2020).
    - Hypothesis: as indefinite antecedents are less explicit, they will more likely favour less explicit *wo*-relatives.
11. Topic Persistence: relative clauses were coded for whether the 'same' or a 'different' topic is talked about over consecutive clauses – without intervening material – up to a maximum of ten clauses (Cheshire et al. 2013; Wright and Givón 1987).
    - Hypothesis: as topics that persist over a greater number of clauses are non-marked, they will more likely favour less explicit *wo*-relatives.
12. Structural Persistence: relative clauses were coded for the 'same' or 'different' relativiser used previously to the current one (Hinrichs et al. 2015).
    - Hypothesis: for reasons of parallelism, consistency, and priming, the same relativiser will more likely be used as the previous one (up to a maximum of ten intervening clauses).
13. Structural Count: relative clauses were coded for the number of non-relative clauses occurring in between relativisers (up to a maximum of 10 intervening clauses).
    - Hypothesis: due to limitations on cognitive processing, succeeding relativisers will more likely be the same when they occur relatively close to one another (i.e., three or fewer intervening clauses).
14. Relative Clause Length: a continuous measure of the number of words in the relative clause, including the relativiser and its antecedent (Hinrichs et al. 2015; Quirk 1957; Tagliamonte et al. 2005).

- Hypothesis: following the *Complexity Principle* (Rohdenburg 1996), more cognitively complex noun phrases (i.e., longer antecedents) will likely favour more explicit *d*-relative pronouns.

15. Antecedent Length: a continuous measure of the number of words in the antecedent, excluding the relativiser itself (Guy and Bayley 1995; Hinrichs et al. 2015; Rohdenburg 1996).
    - Hypothesis: following the *Complexity Principle*, longer antecedents are more complex and hence will more likely favour an explicit *d*-relative pronoun.
16. Antecedent Distance: also called adjacency, a continuous measure of the number of words between the antecedent head and the relativiser (Guy and Bayley 1995; Hinrichs et al. 2015; Lopes Câmara 2018; Poschmann and Wagner 2016; Rohdenburg 1996; Tagliamonte et al. 2005).
    - Hypothesis: following the *Complexity Principle*, more distant antecedents will more likely favour the more explicit *d*-relative pronouns to help in clarifying ambiguities.

2.3.3.6.2 External Social Predictors

Eight external social predictors were evaluated:

1. Recording year: relative clauses were coded for which recording year they were used, i.e., 1982 or 2017.
    - Hypothesis: as a result of increasing education, standard language convergence, and pervasive prescriptivism, overall use of *wo*-relatives is decreasing and will, therefore, be less frequent in 2017 than in 1982.
2. Speech community: relative clauses were coded for community, i.e., Stuttgart or Schwäbisch Gmünd.
    - Hypothesis: *wo*-relatives will likely be more frequent in the semi-rural town of Schwäbisch Gmünd, where more dialect features are typically used, versus the urban centre of Stuttgart, where a more standardised, supralocalised variety is spoken (i.e., 'change from above' (Labov 1966)).
3. Speaker education: speakers were coded for whether they have a university degree or not.
    - Hypothesis: *wo*-relatives will be favoured by the less educated who have not been as heavily influenced by prescriptivism in the schools (i.e., 'change from above').
4. Speaker occupation: speakers were coded for whether they are currently in a managerial or a non-managerial role.

- Hypothesis: as with education, *wo*-relatives will be favoured by speakers in non-managerial roles who have been less influenced by education and prescriptivism (i.e., 'change from above').

5. Speaker age: speakers' age was coded as a continuous variable from 18 to 88.
   - Hypothesis: assuming age is an indicator of change, younger speakers will likely use fewer *wo*-relatives than older speakers.
6. Speaker sex: speakers' sex was coded as 'male' or 'female' as self-reported in the demographic survey.
   - Hypothesis: as many studies have shown that men use more dialect features than women, the men in this study will be more likely to use more *wo*-relatives.
7. Sex of speaker and interviewer: relative clauses were coded for whether the speaker and the interviewer were of the 'same' or 'different' sex.
   - Hypothesis: based on prior studies that show more informal speech styles are typical when the speaker and interviewer are of the same sex, 'same' sex will favour *wo*-relatives.
8. Swabian orientation: speakers were coded for their level of "Swabianness", a continuous variable from 1 to 5 based on an evaluation of 16 questions asked during the interview covering topics such as the speakers' knowledge of Swabian culture and icons, their affinity with and perceptions of the Swabian language, and their self-reported use of Swabian with friends and family (Beaman 2018).
   - Hypothesis: based on prior studies that show high levels of local orientation correlate with greater dialect density, speakers with high Swabian orientation scores will likely use more *wo*-relatives.

2.3.4 Analysis and Results

This section presents the analysis and results of the investigation into Swabian *wo*-relatives. First, a summary of the predictors that turned out to be significant and not significant in the multivariate modelling are listed; second, an overall analysis of *wo* and *d*-relatives by speech community and recording year is described; third, a frequency analysis of *wo* versus *d*-relatives with respect to case is provided; and fourth, a multivariate analysis showing the significant predictors and interaction effects is presented.

2.3.4.1 Analysis of Predictors

Concerning the 16 internal linguistic predictors discussed in Section 2.3.3.6, as previously mentioned, place and time were eliminated as

knock-out constraints. As a result of the multivariate modelling (see Section 2.3.4.4), ten other internal predictors showed no significant effects on the choice of relativiser, either singly or in interaction with other predictors, and hence have been eliminated from further discussion:

1. Restrictiveness
4. Antecedent Category
5. Antecedent Case
7. Case Matching
8. Resumptive
11. Topic Persistence
12. Structural Persistence
13. Structural Count
14. Relative Clause Length
15. Antecedent Length

Through multivariate modelling (see Section 2.3.4.4 for full details), four internal predictors showed significant results and will be discussed further in the subsequent sections:

6. Relative Case
9. Animacy
10. Definiteness
16. Antecedent Distance

In addition, four of the eight social predictors from Section 2.3.3.6 proved to be significant and will also be discussed in the following sections:

1. Recording year
2. Speech Community
3. Speaker Education
4. Speaker Occupation[5]

Contrary to expectations, Swabian orientation showed no significant effect on speakers' choice of relative pronouns. Although prior research on Swabian has shown that dialect features index Swabian identity (Beaman 2018), surprisingly *wo*-relatives do not appear to be one of them. Similarly, speaker sex, a strong predictor of linguistic variation in many highly stratified environments, shows no significant effect on the use of *wo* versus a *d*-relative pronoun (cf. Meyerhoff et al. 2020). Finegan and Biber (2001:3145) claim that

> most linguistic features do *not* achieve sufficient salience to index either speaker or situation identity.... For example, the frequency of relative clause types and other particular aspects of relative clauses have been shown to

correlate with social groups, but that frequency is not sufficiently salient for relative clauses to index social identity.

As we will see, the Swabian panel speakers support this claim, exposing education to be a much stronger predictor of relative pronoun usage than other aspects of social identity.

2.3.4.2 Community Change

One of the strongest factors influencing the choice of relativisers in Swabian is the urban/rural divide. Figure 2.3.1 presents frequency counts of relative clauses by community and recording year. Overall, traditional *d*-relatives (in light grey) are favoured at 64% (*n* = 765/1204) over invariant *wo*-relatives (in dark grey) at 36% (*n* = 439/1204) (combined percentages not shown in the figure). While *wo*-relative usage has remained constant in Schwäbisch Gmund over the two recording periods, 41% in 1982 and 39% in 2017, we see a decline in usage in Stuttgart from 41% in 1982 to 24% in 2017. These results partially support two of the hypotheses from Section 2.3.3.6: use of *wo*-relatives is decreasing over time (external social prediction 1), but only in the urban variety of Stuttgart (external social prediction 2), likely a result of the considerable standard language convergence and supralocalisation that has been occurring over the 35-year timeframe of this study.

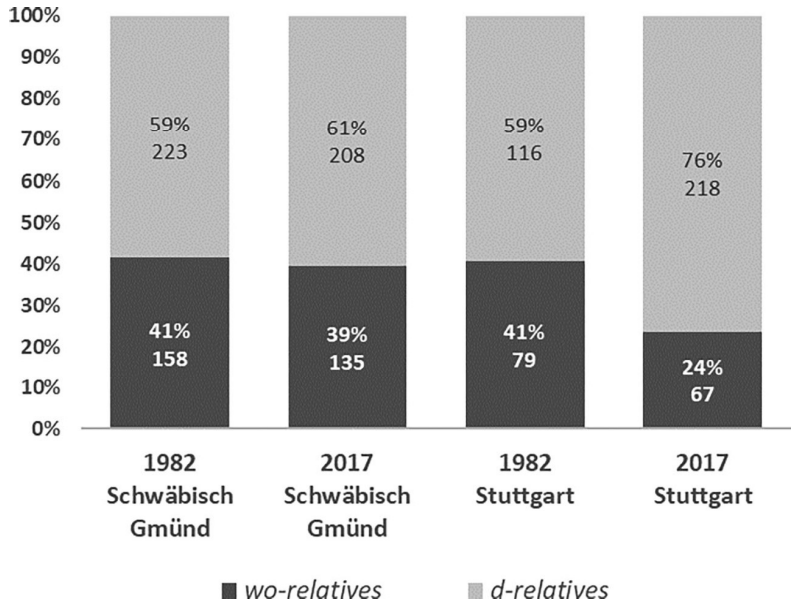

Figure 2.3.1 Frequency of *wo*-relatives and *d*-relatives in Swabian by community and recording year.

2.3.4.3 Relative Marker Case

A second major factor constraining variation in the use of *wo*-relativisers in Swabian is the case of the relative. Figure 2.3.2 shows the distribution of relativisers from the 20 Swabian panel speakers by community, recording year, and case. As expected, use of *d*-relative pronouns follows the Keenan and Comrie (1977:66) *Accessibility Hierarchy* (AH), demonstrating that linguistic constraints on relative clause formation pattern in an implicational hierarchy based on the grammatical function of the relativiser and hence the ease with which noun phrases can be relativised. Specifically, AH predicts that relatives are most common in subject position (nominative), followed by direct object (accusative), indirect object (dative), oblique (dative), genitive, and object of comparison.[6] Figure 2.3.2 confirms that, for both years and both communities, relative clauses in Swabian are most common in the nominative case (60%, *n* = 725/1200), followed by the accusative (19%, *n* = 222/1200) and dative cases (21%, *n* = 253/1200) which show similar frequencies.

However, contrary to our prediction, Figure 2.3.2 clearly reveals that *wo*-relatives are considerably more frequent in the dative case for both communities and in both years (internal linguistic prediction 6). Dative *wo*-relatives increased in Schwäbisch Gmünd from 60% (*n* = 81) in 1982 to 90% (*n* = 78) in 2017, although they decreased somewhat in Stuttgart, from 82% (*n* = 44) to 74% (*n* = 50). As for the nominative case, both communities were fairly similar in 1982: 33% (*n* = 233) in Schwäbisch Gmünd and 28% (*n* = 130) in Stuttgart. However, we see a sharp decline in the use of subject *wo*-relatives in 2017, from 33% (*n* = 233) to 19% (*n* = 170) in Schwäbisch Gmünd and from 28% (*n* = 130) to 7% (*n* = 192) Stuttgart. The implications of these findings will be discussed further in the following sections.

2.3.4.4 Multivariate Analysis

In order to glean the full picture of *wo*-relativiser use in Swabian, we turn to the results of the multivariate analysis. Table 2.3.2 shows the summary results of the best-fit linear mixed-effects regression model (*glmer* function from the R package *lme4*, version 1.1 (Bates et al. 2015; R Core Team 2014)), evaluated with Akaike's Information Criterium (AIC), a standard metric for assessing the quality of a statistical model taking into consideration the trade-off between complexity and goodness of fit. Linear modelling was performed with the full dataset to avoid any type of *post hoc* analysis. Note that positive estimates favour the use of *wo*-relatives, while negative estimates favour *d*-relatives. The predicted values for each of the factors (generated by the *predict* function from the R package *stats,* version 3.5.3, obtained by evaluating the

1982 Schwäbisch Gmünd

Case	*wo*	*dxx*	*Total*	*%wo*
Nominative	78	155	233	33%
Accusative	31	35	66	47%
Dative	49	32	81	60%
TOTAL	158	222	380	42%

2017 Schwäbisch Gmünd

Case	*wo*	*dxx*	*Total*	*%wo*
Nominative	33	137	170	19%
Accusative	32	63	95	34%
Dative	70	8	78	90%
TOTAL	135	208	343	39%

1982 Stuttgart

Case	*wo*	*dxx*	*Total*	*%wo*
Nominative	36	94	130	28%
Accusative	7	14	21	33%
Dative	36	8	44	82%
TOTAL	79	116	195	41%

2017 Stuttgart

Case	*wo*	*dxx*	*Total*	*%wo*
Nominative	14	178	192	7%
Accusative	16	24	40	40%
Dative	37	13	50	74%
TOTAL	67	215	282	24%

Figure 2.3.2 Frequency of *wo*-relatives and *d*-relatives in Swabian by case, community and recording year.

regression function from Table 2.3.2) are shown in Table 2.3.3, broken down by community.

We look first at the main internal constraints and see that the strongest internal constraints favouring *wo* is an abstract notion of place

Table 2.3.2 Multivariate analysis relative pronoun usage in 20 Swabian panel speakers across two points in time (1982 and 2017)

Predictors	*Values*	*Estimate*	*Std. Error*	*z-Value*	*p-Value*	*Sig*
Model intercept		–0.370	0.476	–7.790	0.436	
Main effects:						
Recording year	2017	0.066	0.383	0.173	0.862	
Community	Stuttgart	0.088	0.720	0.122	0.903	
Education level	university	–1.357	0.356	–3.808	0.000	***
Animacy	animate	–0.302	0.255	–1.185	0.236	
Definiteness	definite	0.593	0.178	3.342	0.001	***
Antecedent distance	less	–0.454	0.124	–3.658	0.000	***
Place	abstract	2.013	0.609	3.306	0.001	***
Relativiser case	dative	2.817	0.386	7.303	0.000	***
Interaction effects:						
Animate + Relative Case	dative	–1.582	0.453	–3.490	0.000	***
2017 + Relative Case	dative	2.170	0.468	4.460	0.000	***
2017 + Place	abstract	–1.954	0.806	–2.424	0.015	*
2017 + Community	Stuttgart	–0.160	0.449	–0.355	0.722	
2017 + Community + Animate	Gmund	–0.308	0.408	–0.754	0.451	
2017 + Community + Animate	Stuttgart	–1.288	0.484	–2.663	0.008	**
Random effects:						
Speaker		2.049				
Summary statistics:						
of relatives (n)	1204					
of speakers	20					
% correctly predicted	83.5%					
baseline %	64.0%					
concordance index	0.899					

Positive estimates (high probabilities) favour and negative estimates (low probabilities) disfavour the use of *wo*-relatives; significance levels: *** 0.001, ** 0.01, * 0.05.

(87.3% in Schwäbisch Gmünd and 93.8% in Stuttgart, Table 2.3.3). As previously mentioned, this likely results through analogy with physical notions of place that exhibit categorical use of *wo* and hence have been eliminated as a knock-out condition. The next strongest predictor favouring the use of *wo*-relativisers is the dative case[7] (74.8% in Schwäbisch Gmünd and 77.7% in Stuttgart, Table 2.3.3). *Wo*-relatives are also favoured with inanimate antecedents (51.4% in Schwäbisch Gmünd and 49.5% in Stuttgart, Table 2.3.3) and with definite articles (44.7% in Schwäbisch Gmünd and 40.3% in Stuttgart, Table 2.3.3). Greater distance between the antecedent head and the relativiser is also

Table 2.3.3 Summary of predictors influencing the use of *wo*-relatives; obtained with the R *predict* function through the regression function shown in Table 2.3.2, which takes into account random effects by speaker; significance levels: *** 0.001, ** 0.01, * 0.05.

	Schwäbisch Gmünd					*Stuttgart*				
Predictor name	*Estimate*	*Prob.*	*% wo*	*n*	*Sig*	*Estimate*	*Prob.*	*% wo*	*n*	*Sig*
Main effects:										
Year: 1982	–0.432	0.394	41.5%	381		–0.467	0.385	40.5%	195	
Year: 2017	–0.729	0.325	39.4%	343		–1.989	0.120	23.5%	285	
Education: no university	–0.322	0.420	43.3%	503		–0.433	0.394	39.3%	305	
Education: university	–1.144	0.242	33.9%	221		–3.004	0.047	14.9%	175	*
Relativiser case: nominative	–1.393	0.199	27.5%	403		–2.283	0.093	15.5%	322	
Relativiser case: accusative	–1.017	0.266	39.1%	161		–1.604	0.167	37.7%	61	.
Relativiser case: dative	1.966	0.877	74.8%	159	***	1.991	0.880	77.7%	94	***
Animacy: animate	–1.182	0.235	31.6%	399		–2.362	0.086	17.7%	288	
Animacy: inanimate	0.175	0.544	51.4%	325	*	0.117	0.529	49.5%	192	***
Definiteness: definite	–0.283	0.430	44.7%	235		–0.571	0.361	40.3%	176	
Definiteness: indefinite	–0.713	0.329	38.4%	489	*	–1.833	0.138	24.7%	304	***
Place: abstract	2.495	0.924	87.3%	63		2.773	0.941	93.8%	32	
Place: no	–0.865	0.296	36.0%	661	***	–1.666	0.159	25.9%	448	***
Antecedent distance: < = 1 word	–0.529	0.371	42.1%	392		–1.374	0.202	28.6%	262	
Antecedent distance: 2–3 words	–0.047	0.488	44.4%	153	***	–0.570	0.167	37.0%	108	.
Antecedent distance: > = 4 words	–1.120	0.246	33.5%	179	***	–2.147	0.105	28.2%	110	***

	Schwäbisch Gmünd					*Stuttgart*				
Predictor name	*Estimate*	*Prob.*	*% wo*	*n*	*Sig*	*Estimate*	*Prob.*	*% wo*	*n*	*Sig*
Interaction effects:										
1982 + Nominative case	–1.030	0.263	33.5%	233		–1.086	0.252	27.7%	130	
1982 + Accusative case	–0.419	0.397	47.0%	66		–1.252	0.222	33.3%	21	
1982 + Dative case	1.297	0.785	60.5%	81		1.736	0.850	81.8%	44	
2017 + Nominative case	–1.891	0.131	19.4%	170		–3.093	0.043	7.3%	192	*
2017 + Accusative case	–1.433	0.193	33.7%	95		–1.789	0.143	40.0%	40	
2017 + Dative case	2.660	0.935	89.7%	78		2.216	0.902	74.0%	50	
1982 + Abstract place	3.146	0.959	88.5%	26		3.127	0.958	100.0%	18	
1982 + Non-place	–0.694	0.333	38.0%	355	**	–0.832	0.303	34.5%	177	**
2017 + Abstract place	2.038	0.885	86.5%	37		2.319	0.910	85.7%	14	
2017 + Non-place	–1.064	0.257	33.7%	306	**	–2.211	0.099	20.3%	271	***
1982 + Animate	–0.882	0.293	35.6%	225		–1.086	0.252	28.7%	115	
1982 + Inanimate	0.217	0.554	50.0%	156		0.424	0.604	57.5%	80	
2017 + Animate	–1.571	0.172	26.4%	174		–3.210	0.039	10.4%	173	
2017 + Inanimate	0.137	0.534	52.7%	169		–0.102	0.475	43.8%	112	*
Animate + Nominative case	–1.485	0.185	28.8%	292		–2.558	0.072	14.3%	245	
Animate + Accusative case	–1.301	0.214	25.5%	47		–2.665	0.065	21.1%	19	
Animate + Dative case	0.426	0.605	50.8%	59	**	0.212	0.553	54.5%	22	***
Inanimate + Nominative case	–1.152	0.240	24.3%	111		–1.405	0.197	19.5%	77	
Inanimate + Accusative case	–0.900	0.289	44.7%	114		–1.124	0.245	45.2%	42	
Inanimate + Dative case	2.874	0.947	89.0%	100	***	2.535	0.927	84.7%	72	***

a significant constraint disfavouring *wo*; that is, the greater the distance between the antecedent and the relative pronoun, the more likely a traditional *d*-relative will be used. This likely results from psycholinguistic processing demands in that greater distances between the referent and its object could potentially cause processing and communication difficulties, which the *d*-relative with its case, number, and gender markings helps to clarify.

Turning to the main external effects, as expected, a university degree is a significant factor disfavouring the use of *wo*, most notably in Stuttgart (14.9% for those with a university degree versus 39.3% for those without a degree, Table 2.3.3), confirming external linguistic prediction 3. Labov (2001:60) maintains that education is the single best predictor for assessing the social evaluation of a feature, with higher levels of education correlating with features of higher prestige, specifically, those features taught in schools. Not surprisingly, the influence of prescriptivism in the educational system can arrest a change in progress, and, in the case of Swabian, slowing and restricting variation in the use of *wo*-relatives.

We next look at the interaction effects between the different predictors. One of the strongest interaction effects is animacy and case, with *wo* being favoured with inanimate referents in the dative case (89.0% in Schwäbisch Gmünd and 84.7% in Stuttgart, Table 2.3.3), indicating that *d*-relatives, with their case-markings and greater specificity in singling out the object of reference, are the preferred marker for animate antecedents in the nominative and accusative cases. We also see that the use of *wo* with animate referents has declined over the 35 years, somewhat in Schwäbisch Gmünd (35.6% in 1982 to 26.4% in 2017, Table 2.3.3) and substantially in Stuttgart (28.7% in 1982 to 10.4% in 2017, Table 2.3.3), which is likely attributable to greater teacher prescriptivism and standard language convergence in the urban centre of Stuttgart (cf. Duden's comment from above that using *wo* to refer to a person or thing is *landschaftlich salopp* 'country slang' (Duden Online 2018)).

The results of the multivariate analysis also reveal that, over the 35 years, *wo*-relatives in the dative case have significantly increased in Schwäbisch Gmünd (60.5% in 1982 to 89.7% in 2017, Table 2.3.3) and, at the same time, somewhat decreased in Stuttgart (81.8% in 1982 to 74.0% in 2017, Table 2.3.3). At the same time, an abstract notion of place, which categorically favoured *wo* Stuttgart in 1982 (100.0%) has slackened off in 2017 (85.7%). These findings point to the possibility that *wo* may be going through a process of grammaticalisation and semantic bleaching (Matisoff 1991), a topic we explore further in the discussion section.

With a concordance index of .899 and a percent correctly predicted of 83.5% (see Table 2.3.2), this model can be considered pretty good at

explaining the variability in the use of *wo* versus a *d*-relative in Swabian (Hinrichs, Szmrecsanyi and Bohmann 2015). However, the random effects for speaker are quite high (estimate = 2.049), which can indicate considerable inter-speaker variability, sparsity of data, and/or collinearity between social and linguistic factors. Indeed, there are some speakers who simply use more relatives (such as Manni and Markus) than other speakers (such as Elke and Louise). There are also speakers who predominately use *d*-relatives (such as Helmut and Herbert) and those who mostly use *wo*-relatives (such as Siegfried and Rachael). Such individual variability draws into question whether there are some interactional, stance-taking or other indexicalities at play, a potential topic for future analysis.

2.3.5 Discussion

The preceding analysis has exposed a complex set of interacting factors affecting speakers' choice of relative pronouns in Swabian, involving both internal linguistic constraints – in particular, case, definiteness, animacy, and distance from the antecedent – and external social factors, specifically speech community, level of education, and recording year. The results show considerable change in relative pronoun usage across the 35-year timeframe for these two communities, most notably movement away from nominative *wo* in both communities, most markedly in Stuttgart (from 27.7% in 1982 to 7.3% in 2017, Table 2.3.3), and advancement toward dative *wo,* particularly in Schwäbisch Gmünd (60.5% in 1982 to 89.7% in 2017, Table 2.3.3).

2.3.5.1 The Demise of the Dative

For *wo*-relatives to be favoured in the dative case is not a surprising revelation considering the fact that the dative (like the genitive) has a different structure in German than the nominative and accusative paradigms.[8] Could this distinctive, "more complicated" structure be driving the dative the way of the genitive, which has completely died out in modern spoken German? Could Swabian be moving toward a two-case system as with many of the low German dialects, at least with respect to relative pronouns? One insight can be drawn from Google Books Ngram Viewer (Jean-Baptiste et al. 2011), which shows that use of the dative article and relative pronoun *dem* is in stark decline, from a high of 0.7% in 1860 to 0.6% in 1940 to 0.4% today (see Figure 2.3.3). Whether all dative case markings in German are in decline is clearly beyond the scope of the current analysis; however, it is evident from the current dataset that *wo* is preferred over *dem* and *der* for marking dative relative clauses in Swabian.

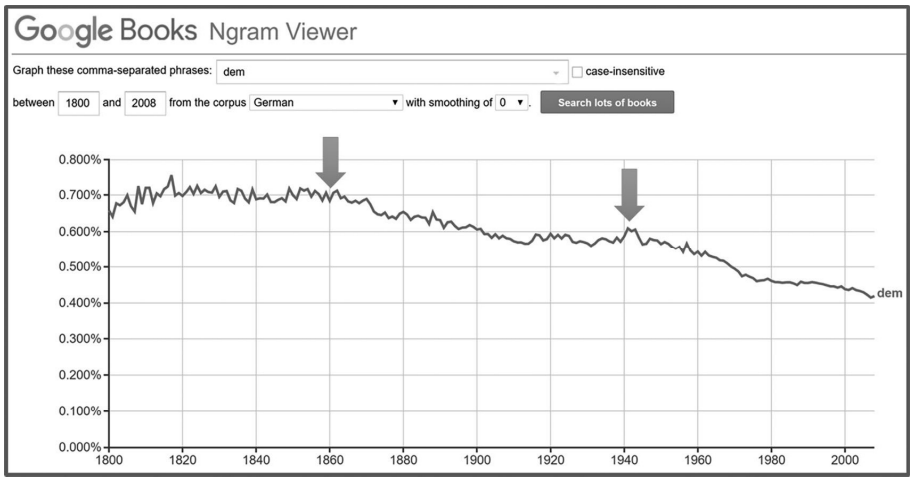

Figure 2.3.3 Google Books Ngram Viewer for German *dem*.

2.3.5.2 Evidence from the Socio-Historical Context

In unravelling the use of *wo* as a relative pronoun, it is essential to consider the socio-historical context and its evolution. Use of *wo* as a relativiser in German is not a new phenomenon. Hermann Paul (1897) along with the Grimm Brothers' fairy tales confirm frequent use of *wo* in conditional, temporal, causal, and conjunctive phrases. Some linguists contend that *wo*-relatives evolved from the locative use of *wo,* meaning 'where'. Indeed, the results of the current study show that *wo*-relatives are highly favoured with both physical and abstract notions of place. However, there is some controversy over this interpretation. Brandner and Bräuning (2013) argue quite convincingly that, despite its homophony with the locative adverb *wo*, the *wo*-relative originates from the Middle High German equative particle *so/som,* which was widely used as a complementiser in Early New High German and southern Alemannic dialects. Their claim is supported by the semantics of *wo* and through a historical and comparative analysis based on four arguments:

1. *so*-relatives were widespread in the Early New High German period in the same areas where we see the *wo*-relatives today, precisely the Upper German dialect areas, e.g., Swabian and Bavarian (Paul 1920:238) and Swiss German;
2. *wo*-relatives started appearing in the literature about the same time when the equative particle *als* changed to the *w*-series and became *wie* (Jäger 2010);
3. use of the equative particle *som* to introduce a relative clause is also found in other Germanic languages, specifically various Scandinavian varieties; and,

4. interpreting *wo* as an equative particle provides an explanation for its use in both restrictive and non-restrictive relative clauses and well as for the resumptive or the doubly filled complementiser, *der wo,* which is common in the southern German dialects, Bavarian as well as Swabian (Bayer 1984).

If indeed *wo*-relatives developed from the Early New High German complementiser *so,* this could provide some explanation for the differing levels of usage found in Stuttgart and Schwäbisch Gmünd: *wo*-relatives in the more conservative dialect of Schwäbisch Gmünd may simply be reflecting a more traditional, historical usage.

2.3.5.3 The Effects of Grammaticalisation

As discussed, many linguists have assumed that *wo* has evolved from denoting a physical place and to referring to an abstract notion of place. The results from the multivariate analysis show that an abstract meaning of place has slackened off in 2017. One explanation for the changing role of *wo* may be that it has become "semantically bleached" and hence is losing its traditional meaning of 'where' (Cheshire, personal communication). According to Hopper and Traugott (2003:85), grammaticalistion of relative pronouns through spatiotemporal metaphoric extensions is not uncommon. It appears that Swabian *wo* may be going through a process of grammaticalisation (Brook 2011; Bybee and Pagliuca 1985; Cheshire 2007; Hopper and Traugott 2003), specifically, decategorisation, losing the semantic and syntactic characteristics of an adverbial pronoun and taking on the full properties of a relative pronoun. "[H]uman language users have a natural propensity for making metaphorical extensions that lead to the increased use of certain items" (Bybee and Pagliuca 1985:75). Support for this claim is also found in Bavarian, which uses the doubled-filled complementiser with both a relative pronoun and the complementiser *wo* in forming relative clauses (Bayer 1984).

2.3.5.4 The Widening Urban-Rural Divide

The findings from this study demonstrate that the German urban/rural divide is ever present. The Stuttgart dialect is becoming more standardised – a developing *regiolect* (Auer 2018) – while the dialect of Schwäbisch Gmünd has retained more of its traditional features. The emerging ethnolect in Stuttgart might provide some insights into *wo*-relative usage. Auer (2020) cites Stuttgart as one of the cities with the highest number of foreigners in all of Germany: 46% of the population have at least one parent not from the region, twice as many as in the rest of Germany overall. His research on the developing ethnolect of immigrants in Stuttgart shows exceptionally high use of *wo*-relatives, to the complete exclusion

of *d*-relative pronouns with some speakers. *Wo*-relatives' lack of gender, number, and case markings make them an ideal candidate for *koinéisation*, a process by which "new varieties of a language are brought about as a result of contact between speakers of mutually intelligible varieties of that language" (Kerswill 2004:669). Certainly, Stuttgart today comprises a broad amalgam of standard German speakers, Swabian speakers, and multiethnolectal speakers. However, education and prescriptivism play a critical counter-role in language usage. As we have also seen, higher levels of education suppress speakers' choice for *wo* variants. These findings point to the fact that education and intractable teacher prescriptivism can obstruct the natural trajectory of language change.

2.3.5.5 The Role of Prescriptivism

While the constraints on *wo*-relative usage between the two communities appear to be the same, the difference lies in the rate of change. In 2017, *wo*-relatives have become more disfavoured in Stuttgart (40.5% in 1982 to 23.5% in 2017, Table 2.3.3), while their use in Schwäbisch Gmünd has stayed largely the same (41.5% in 1982 to 39.4% in 2017, Table 2.3.3). And, as we have seen, this decrease is particularly strong in Stuttgart for the nominative case (27.7% in 1982 to 7.3% in 2017, Table 2.3.3), with non-place antecedents (from 34.5% in 1982 to 20.3% in 2017), and with inanimate antecedents (from 57.5% in 1982 to 43.8% in 2017). Stuttgart is moving away from *wo*-relatives to standard German *d*-relatives, which are becoming an integral part of the supra-regional dialect in south-western Germany. It seems likely that increased dialect contact in Stuttgart, resulting from swelling numbers of non-dialect-speaking, ethnically German migrants, as well the influx of foreign-born immigrants, along with rampant prescriptivism and increasing education ('change from above'), are stemming the use of *wo* as a relative pronoun, certainly among the more educated speakers.

2.3.6 Conclusions

This exploratory investigation of relative markers in 20-panel speakers of Swabian across a 35-year time period has highlighted the intricate interaction between intra- and extra-linguistic factors and the role they play in morphosyntactic change. Returning to the three questions asked at the outset of this chapter, we found that *wo*-relatives are favoured with definite, animate referents in the dative case, influenced by community and education (question 1). We have also seen that the use of *wo* as a relativiser is changing, potentially going through a process of semantic bleaching and decategorisation as a result of metaphoric processes and *koinéisation* (question 2). Yet we also see a counter-force at play in the movement away from *wo*-relatives in Stuttgart, a change that appears

primarily driven by growing regionalisation (i.e., supralocalisation) and persistent prescriptivism (i.e., 'change from above') (question 3). Expanding this panel study investigation to a broader multi-generational trend study may unveil how broadly these changes are spreading or receding in the Swabian system of relativisation.

Notes

1 This research is dedicated to Jenny Cheshire whose ground-breaking academic scholarship and personal and professional munificence have been an inspiration to me and many others. I would like to extend my sincerest thanks to Jenny for encouraging me to look into morphosyntactic variation and to Isabelle Buchstaller for making me aware of the *wo*-relative marker in Swabian. I also wish to thank Jenny, as well as Peter Auer, James Garrett, Gregory Guy, the co-editors of this volume, and two anonymous reviewers for their commentary on earlier versions of this research. Of course, any deficiencies remaining are entirely my own.

2 Duden also describes three other types of relatives: (1) free relatives with *wer/was* 'who/what' (also called 'headless relatives' because they do not appear to have an accompanying noun phrase), (2) relative adverbs such as *als/wie* 'as/how', and (3) *Gradpartikeln* 'correlative conjunctions' *je…desto* 'the…the'; however, since these relatives do not vary with *wo*, they have been excluded from the current analysis.

3 All names used are pseudonyms in order to protect the privacy of the speakers. The four digits after the speakers' name specify the year of the recording: 1982 or 2017.

4 Humanness and collectivities of humans were initially coded separately; however, due to an insufficient number of tokens for analysis, all are combined in the animacy predictor.

5 The education and occupation factors provided similar results, hence to avoid issues of collinearity, the decision was made to keep only education predictor as it more closely represents the prescriptivism effect which appears to have a strong influence on relativiser choice.

6 Subject and direct object equate in German to nominative and accusative, respectively. The indirect object and oblique relations are both encoded by the dative case in German. There were only four genitives in the entire data set and no examples for object of comparison.

7 The precedence of the dative (over nominative and accusative) case was tested via Akaike's Information Criterium (AIC).

8 The paradigms for the nominative and accusative pronouns in standard German are similar (nominative = *der/die/das*; accusative = *den/die/das*) in stark contrast to the paradigms for the dative and genitive paradigms (dative = *dem/der/dem*; genitive = *des/der/dem*), which are more similar to each other, but different from the nominative and accusative paradigms.

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