Lars Bülow* and Philip C. Vergeiner

Explaining morpho-syntactic variation and change: the case of subjunctive II in the Bavarian dialects of Austria

https://doi.org/10.1515/zfs-2024-2005

Abstract: This paper aims to explain recent empirical findings on subjunctive II formation in the Bavarian dialects of Austria from both functional and formal perspectives. For this purpose, the explanatory power of the functional principles of natural morphology (NM) is compared with the formal framework of constructional morphology (CxM). It is argued that the two approaches complement each other. Thus, it is shown that the key concepts of NM (constructional iconicity, uniformity and transparency) can easily be adapted in terms of CxM. These adjustments are needed to explain the ongoing changes in subjunctive II formation in the Bavarian dialects of Austria. This is due to the well-documented shift towards the use of periphrastic constructions (with the *täte*- and *würde*-auxiliary) that are located at the interface between morphology and syntax.

Keywords: constructional morphology; natural morphology; subjunctive II; Bavarian dialects in Austria; iconicity

1 Introduction

German dialectology has increasingly addressed morpho-syntactic variation since the 1980s (e.g. Fleischer 2004; Scheutz 2005; Weiß 1998, 2004; Weiß and Strobel 2018), and a particular focus in recent dialectological research has been on the formation of subjunctive II in the Bavarian dialects of Austria. Several empirical studies have been carried out on this topic, finding not only significant linguistic but also social and spatial factors of variation and change of this phenomenon (e.g. Breuer and Wittibschlager 2020; Edler and Oberdorfer 2022; Niehaus et al. 2022; Stöckle 2020; Stöckle and Wittibschlager 2022; Vergeiner and Bülow 2022). However, despite these research efforts, the available studies are predominantly descriptive. Consequently,

***Corresponding author: Lars Bülow**, University of Munich, Munich, Germany,
E-mail: Lars.Buelow@germanistik.uni-muenchen.de
Philip C. Vergeiner, University of Munich, Munich, Germany,
E-mail: philip.vergeiner@germanistik.uni-muenchen.de

there are hardly any formal and very few functional accounts (Bittner and Köpcke 2010; Vergeiner and Bülow 2022) connecting the empirical findings on subjunctive II in Bavarian dialects with a more general theoretical framework. Such an endeavour, however, would be desirable in many respects. Not only would it increase the understanding of ongoing change in the respective dialects, but, more so, authentic dialect data are also the ideal "testing ground" to examine and review the claims of any particular grammatical theory (e.g. Weiß 1998).

The aim of this paper is to address this desideratum by explaining comprehensive findings on subjunctive II formation in the Bavarian dialects of Austria from both functional and formal perspectives. To this end, we selected two morphological theories *claimed* to be suitable to account for actual language variation and change: the well-established theory of natural morphology (NM; e.g. Dressler 1987; Mayerthaler 1981; Wurzel 1984) and the more recently developed theory of construction morphology (CxM; e.g. Booij 2010a; Masini and Audring 2018; van der Spuy 2017).

In this paper, we will demonstrate that the functional explanations of NM alone are not sufficient to account for the variation and change of subjunctive II in the Bavarian dialects of Austria. As will be argued in greater detail, this is due to the rigid concept of morphology presumed by NM. Therefore, we examine whether bringing together functional explanations of NM with formal explanations of CxM provides a better understanding of recent data and findings. To avoid any misunderstandings, we must briefly clarify what we mean by "formal" and "functional". We refer to Newmeyer (2003, 2016), who convincingly argues that the hypothetical division between functional and formal linguistics is above all a "rhetorical conflict" (Newmeyer 2016: 129). There are neither purely functional nor formal theories but only theories drawing more or less heavily on functional and formal explanations. Based on this understanding, a formal explanation is an explanation "in which principles governing the organisation of grammars are said to play a central role", whereas a functional explanation "refers crucially to properties of language users, in particular to their interest in producing and comprehending language rapidly, to their states of consciousness, or to aspects of their behaviour" (Newmeyer 2003: 18). We will use the terms "formal" and "functional" in this exact sense (i.e. a formal explanation is not required to draw on a theory generally considered as formal, such as generative grammar; Newmeyer 2016: 134). Accordingly, formal explanations can also be found in theories that are usually understood as functional.

In what follows, it is argued that the functional explanations of NM, which ultimately draw on speaker and listener psychology (Mayerthaler 1981; Wurzel 1984), fail to fully explain language change regarding subjunctive II formation in the Bavarian dialects of Austria, i.e. the recent shift from synthetic to analytic forms (Vergeiner and Bülow 2022). This is because of NM's narrow understanding of morphology. Thus, a different model of the organisation of grammar is needed to adequately account for the change. More specifically, it is necessary to clarify how morphology and syntax are

linked to explain how synthetic structures can be replaced by analytic structures. At this point, CxM comes into play; we argue that the *formal* assumptions of CxM[1] on the organisation of grammar, along with the *functional* principles of NM, allow for a better understanding of the phenomenon under consideration.

In what follows, we first present the current state of research on subjunctive II formation in the Bavarian dialects of Austria by reviewing the findings of recent empirical studies (Section 2). Subsequently, we introduce NM and examine whether it can explain these findings (Section 3). In the next step, we address CxM and consider its formal modelling of the research outcomes (Section 4). Finally, we discuss whether CxM is compatible with NM and whether a complementary approach allows for a better explanation of recent research outcomes (Section 5).

2 Subjunctive II in the Bavarian dialects of Austria

Although subjunctive II formation, such as morpho-syntactic variables in general, has been largely neglected by traditional dialectology in Austria for a long time, there has been increased interest in this phenomenon since the 2000s. Evidence for this increased interest is found in numerous studies dealing with subjunctive II formation in the Bavarian dialects in Austria (e.g. Breuer and Wittibschlager 2020; Edler and Oberdorfer 2022; Lenzhofer 2017; Niehaus et al. 2022; Quehenberger et al. 2022; Stöckle 2020; Stöckle and Wittibschlager 2022; Vergeiner and Bülow 2022). These studies focus particularly on the variation of different formal variants for expressing subjunctive II. The manifold functions of subjunctive II in Bavarian dialects are demonstrated in detail in Donhauser (1992) and Glauninger (2008, 2010). In this article, we focus primarily on variation and change in the use of the various subjunctive II variants against the background of functional and formal explanations – a key desideratum, as has already been shown above (see Section 1). Therefore, we will first explain the different variants that are used in the Bavarian dialects of Austria to express subjunctive II (Section 2.1), and then we briefly summarise the most important findings from recent empirical studies to provide insights into key trends of ongoing change (Section 2.2).

2.1 The formation of subjunctive II in Bavarian

Despite the loss of the preterite in the Upper German dialects (cf. Fischer 2018), which potentially withdraws the preterite basis of subjunctive II formation (cf. Bittner and

1 However, this does not mean that we consider CxM a formal theory.

Köpcke 2010; Nübling 1997), Bavarian dialects are characterised by a particular richness of variants to form subjunctive II compared to other German dialects (cf. Saltveit 1983; Stöckle 2020). The inventory of forms consists of synthetic forms (1), which operate on the word-internal level, and periphrastic forms (2), which operate on the phrasal level.

The synthetic variants can be either strong, weak or mixed in their formation (Merkle 1993: 71–72): strong by using the preterite stem (usually with ablaut and/or umlaut) (1a), weak by means of the suffix *-at* attached to the present stem (1b) and mixed with the *-at*-suffix attached to the preterite stem (1c).

(1) a. *Wonn's des ned do olle wieder tatn!*
'If they would not do that again!'
(DiÖ, PP02 corpus)[2]

b. *Wonn i's do ned so oft brauchat!*
'If only I would not need it so often!'
(DiÖ, PP02 corpus)

c. *Wonn a's moi nahmat.*
'If he would take it.'
(DiÖ, PP02 corpus)

The suffix *-at*, which does not appear in Standard German, is a characteristic of Bavarian dialects. It has developed from the weak Old High German preterite suffix *-ôt*(*a*) (Schönbach 1899: 236) and was later – probably in connection with the decline of the preterite in Middle High German and Early New High German (cf. Pickl 2022) – reanalysed as a subjunctive II marker in the Bavarian dialects. The subjunctive II suffix *-at* is placed between the stem and the inflectional suffix for person and number (Wiesinger 1989: 60). Table 1 shows the prototypical

Table 1: Inflection paradigms for synthetic subjunctive II forms in (Central) Bavarian dialects.

Ps. num.	Weak verb (weak inflection) ***sagen*** 'to say'	Strong verb (mixed inflection) ***kommen*** 'to come'	Strong verb (strong inflection) ***kommen*** 'to come'
1. sg.	*sōg-at-ø*	*kam-at-ø*	*kam-ø*
2. sg.	*sōg-at-st*	*kam-at-st*	*kam-st*
3. sg.	*sōg-at-ø*	*kam-at-ø*	*kam-ø*
1. pl.	*sōg-at-n*	*kam-at-n*	*kam-an*
2. pl.	*sōg-at-s*	*kam-at-s*	*kam-ts*
3. pl.	*sōg-at-n*	*kam-at-n*	*kam-an*

2 For detailed information on the corpus see Vergeiner and Bülow (2022: 15–18).

inflectional paradigms (weak, mixed and strong) for the synthetic subjunctive II forms in the Bavarian dialects for both a weak verb (*sagen* 'to say') and a strong verb (*kommen* 'to come').

Regarding the periphrastic variants, a distinction must be made between those with the *täte*-auxiliary (2a)/(2b) and those with the *würde*-auxiliary (2c)/(2d). Both auxiliaries can also be formed with the *-at*-suffix (2b)/(2d):

(2) a. *Wenn a wos eftas sogn tat!*
'If he would say something more often!'
(DiÖ, PP02 corpus)
b. *Wonn a ma's amoi glaum tatat!*
'If he would believe me!'
(DiÖ, PP02 corpus)
c. *Wenn i des net so gonz oft brauchen wiad!*
'If I would not need that so very often!'
(DiÖ, PP02 corpus)
d. *Ja, da wuata[t] i scho d'Lehrering a weng segieren.*
'Yes, I would tease the teacher a little bit.'
(example taken from Breuer and Wittibschlager 2020: 145)

It is important to note that while the *würde*-auxiliary is also widely used in Standard German, the *täte*-auxiliary is not. The *täte*-auxiliary – although widespread in the dialects – is stigmatised in Standard German (e.g. Langer 2001; Lotze and Gallmann 2009: 235; Schwarz 2009).

Recent studies on the formation of subjunctive II in Bavarian dialects of Austria suggest ongoing changes affecting both synthetic and periphrastic variants (Breuer and Wittibschlager 2020; Edler and Oberdorfer 2022; Niehaus et al. 2022; Stöckle and Wittibschlager 2022; Vergeiner and Bülow 2022). The most important findings of these studies are summarised in the following section.

2.2 Recent findings

Drawing on different datasets and various apparent-time studies, it can be said that the most important change is the decrease of synthetic variants in favour of periphrastic variants. This change is affected by geographical, linguistic and social factors.

In what follows, the results from four studies with different methodological approaches are presented and compared: 1) a study by Stöckle (2020), who analysed data of the *Wörterbuch der bairischen Mundarten in Österreich* (WBÖ, 'Dictionary of the Bavarian Dialects in Austria') from the first half of the 20th century; 2) an

apparent-time study by Vergeiner and Bülow (2022), who used a traditional dialect survey to investigate rural dialects; 3) an apparent-time study by Breuer and Wittibschlager (2020), who used language production experiments to investigate subjunctive II formation in the city of Vienna and eleven rural locations, and 4) an apparent-time study by Edler and Oberdorfer (2022), who examined conversational data from the cities of Vienna and Graz. In contrast to the study by Stöckle (2020), which is based on data from the first half of the 20th century, the apparent-time studies analysed more recent data collected between 2017 and 2019 as part of the SFB project (FWF F060) "German in Austria".

1) Making use of historical data, Stöckle (2020: 157–161) shows that synthetic forms predominate in the dialects (90 % of 1,987 occurrences), with greater differences depending on the verb class. For example, the *-at*-suffix prevails especially with weak verbs (97 % of 820 occurrences) but also occurs frequently with strong verbs (61 % of 472 occurrences). With highly irregular verbs (for example, *sein* 'to be', *haben* 'to have' and *gehen* 'to go'), however, it occurs only in about 23 % of cases (158 of 689 occurrences). Regarding the few periphrastic variants (198 occurrences), the *täte*-auxiliary clearly predominates at 77 %, while the *würde*-auxiliary is only used in 19 % of cases at the beginning of the 20th century.[3]
2) In a study by Vergeiner and Bülow (2022), 163 participants from 40 rural locations throughout Austria were interviewed using a traditional dialect survey. The results show that the ratio between synthetic and periphrastic variants is more or less balanced.[4] Synthetic variants are used in 47 % of the cases (1,573 of 3,350 occurrences), of which variants with *-at*-suffix prevail, with 64 % (1,007 of 1,573 occurrences). Strong synthetic variants appear in 36 % of the cases (566 of 1,573 occurrences). Among the periphrastic constructions, which are used in 53 % of all instances (1,777 of 3,350 occurrences), the *täte*-auxiliary clearly predominates with 95 % (1,689 of 1,777 occurrences), whereas the *würde*-auxiliary is only used in 5 % of the periphrastic variants (88 of 1,777 occurrences). In addition to geographical differences – the synthetic forms with *-at*-suffix are predominantly used in conservative dialect regions in a broader region between Linz and Innsbruck (see Figure 12 in Vergeiner and Bülow 2022: 30) – verb-specific differences are particularly evident. Highly irregular verbs, such as *sein* 'to be', *haben* 'to have' and *tun* 'to do', are formed most frequently with strong synthetic forms. For most weak and strong verbs, such as *kaufen* 'to buy' or *lesen* 'to read',

3 The remaining 4 % of cases are classified by Stöckle (2020: 162) as special cases, which we will not discuss here.

4 Note that multiple responses of participants were weighted accordingly so that the percentages given (Vergeiner and Bülow 2022: 20) refer to n = 3,350 cases out of a total of 3,430 coded cases.

however, periphrastic variants with the *täte*-auxiliary prevail (Vergeiner and Bülow 2022: 22).

3) Using language production experiments (see for this method Breuer and Bülow 2019; Lenz et al. 2019) in eleven rural locations and Vienna, Breuer and Wittibschlager (2020) found that periphrastic variants (68 %, 768 of 1,124 occurrences) significantly outnumbered synthetic variants (32 %, 356 of 1,124 occurrences). Among the synthetic variants, the *-at*-suffix is used only in 37 % of cases (133 occurrences), while strong synthetic forms account for 63 % (223 occurrences). Among the periphrastic variants, the *würde*-auxiliary appears in 48 % of cases (367 of 768 occurrences). Accordingly, the *täte*-auxiliary accounts for 52 % of periphrastic variants (401 occurrences).
4) A clear distribution in favour of periphrastic variants (especially with the *würde*-auxiliary) is shown in the study by Edler and Oberdorfer (2022). Here, conversations in formal and informal settings were analysed for the cities of Vienna and Graz, as well as their surrounding areas. In contrast to the participants from rural Austria, where speakers use the entire range of variants (see Section 2.1), "urban speakers exhibit a much narrower range" (Edler and Oberdorfer 2022: 67). Only subjunctive II of the verbs *haben* 'to have' and *sein* 'to be' is formed almost exclusively with strong synthetic forms. In contrast, weak and strong verbs form subjunctive II in the vast majority of cases with the *würde*-auxiliary.

In all three apparent-time studies, an older generation (60+ years) of participants was compared with a younger generation (18–35 years). For these studies, it is remarkable that a similar apparent-time effect is found, although the setting (rural vs. urban) varies and different methods have been used. Compared to the older participants, the younger participants not only used more periphrastic variants but also more *würde*-auxiliaries. Note, however, that the proportion of the *würde*-auxiliary compared to the *täte*-auxiliary is still very low in the study by Vergeiner and Bülow (2022), almost balanced in the study by Breuer and Wittibschlager (2020) and dominant in the study by Edler and Oberdorfer (2022).

To sum up, in comparison with the data from the first half of the 20th century (Stöckle 2020), the three apparent-time studies outlined above indicate a change concerning the reduction of synthetic variants in favour of periphrastic variants, with the *täte*-auxiliary still dominating in the rural areas and the *würde*-auxiliary prevailing in the cities of Vienna and Graz. Since the cities, especially Vienna, have a special impact on further dialect change, it can be predicted that the *würde*-auxiliary will also continue to expand in rural areas (see also findings in Breuer and Wittibschlager 2020). In what follows, we link the empirical findings with two theoretical

frameworks: first, with the functional explanations of NM (Section 3) and second, with the formalism of CxM (Section 4).

3 Natural morphology

Variation and change in subjunctive II in Upper German dialects, such as Bavarian and Alemannic, have already been discussed a couple of times regarding the fundamental principles of the theory of NM (e.g. Bittner and Köpcke 2010; Nübling 1997; Vergeiner and Bülow 2022; Wilde 2015). These principles include constructional iconicity, uniformity, transparency, word length, token frequency and type frequency. In the following sections, the key assumptions of NM will be explained in more detail (Section 3.1) before the findings presented in Section 2.2 will be discussed against the background of these assumptions (Section 3.2).

3.1 Key assumptions

NM explains and predicts the development of linguistic structure on the basis of fundamental insights into speaker and listener psychology (cf. Dressler 1987; Mayerthaler 1981; Wurzel 1984). According to these insights, certain linguistic structures are easier for speakers and listeners to produce and decode than others. Degrees of simplicity are equated with degrees of (un-)markedness and naturalness. Consequently, the more natural a morphological phenomenon is, the less marked it is, and the less natural it is, the more marked it is. Markedness/naturalness form a scale from maximally marked/minimally natural to minimally marked/maximally natural (cf. Wurzel 1984: 21). According to Mayerthaler (1981: 22), morphological structures are maximally natural when they are constructionally iconic, uniform and transparent; otherwise, they are more or less unnatural.

Linguistic structures are transparent if they are constituted by monofunctional operations (Mayerthaler 1981: 35), i.e. if one function corresponds to one morpheme. They are uniform if exactly one form can be assigned to one function. Consequently, uniform linguistic structures form paradigms that are free of allomorphy and syncretism (Mayerthaler 1981: 34–35). Linguistic structures are constructionally iconic if out of (at least) two related phenomena, the semantically more complex one is also formally encoded with more distinctive features. For example, the grammatical categories plural, preterite and subjunctive II are semantically more complex than the categories singular, present and indicative, which is why, according to NM, they should also be encoded with more distinctive features on the form side. Morphological change should lead to the reduction of

markedness and the optimal – i.e. maximally iconic, uniform and transparent – symbolisation of morphological structures.

However, despite thousands of years of morphological changes, marked morphological structures are present in German varieties. The morphology of German is neither completely transparent nor uniform nor maximally iconic. Quite the contrary, we can observe a great deal of allomorphy and syncretism in the paradigms. This is explained by the fact that the principles of NM and natural phonology are diametrically opposed as forces of language change. Naturalness in phonology is often equated with ease of articulation and the concomitant reduction of morphological material. Thus, naturalness in phonology is primarily due to speaker needs, whereas naturalness in morphology is constrained by listeners' needs for perceptual ease (Wurzel 1984: 33). Furthermore, we must acknowledge that German does not only mark grammatical information morphologically. Many categories, such as passive voice, are encoded purely syntactically; others, such as grammatical tense or mood, are encoded both morphologically and syntactically, as can be seen in the synthetic and periphrastic formation of subjunctive II.

In a more modern conception of NM, notably coined by Wurzel (1984), morphological change is also explained by preferences or frequent types of inflectional classes within a language system. Wurzel (1984: 72) points out that inflectional classes can have a different status for speakers within individual languages. Thus, measured by type frequency, they can have different degrees of normality (Wurzel 1984: 73). This means, for example, that the weak inflection in German would be more normal than the strong inflection because the class of weak verbs has significantly more members. In this sense, normality is a criterion for explaining morphological change within a language system because inflectional classes that have a higher degree of normality in a language system are preferred over other inflectional classes in language change. In terms of type frequency, larger inflectional classes thus seem to expand at the expense of smaller ones.

However, in view of the numerous examples of irregularity in German, NM was subsequently complemented by arguments that explain irregularity. This includes, for example, the notion of token frequency in explaining morphological change: High-frequency verbs, which are also usually shorter, seem to be more resistant to changing inflectional classes. Thus, token frequency is an important factor in explaining morphological developments, especially when it comes to more irregularity or suppletion (e.g. Nübling 1997, 2000; Werner 1987).

In addition to the criticism that NM is too much oriented towards the type frequency of morphological patterns and the reduction of markedness (Nübling 1997, 2000; Werner 1987), it has also been emphasised that processes of change that require syntactic encoding are neglected. For the typological development of German, for example, a decrease in morphological marking in favour of a syntactically organised

coding of (certain) grammatical categories has been noted (e.g. Nübling et al. 2017: 331; Roelcke 2011: 129). However, this does not mean that German is generally developing into an analytical language (see Nübling et al. 2017: 354; Roelcke 2011: 267), and, in principle, change can also go in the opposite direction. One can observe, for instance, that auxiliaries frequently become bound affixes through grammaticalisation – one prominent example is the grammaticalisation of the weak preterite suffix *-te* based on the preterite of the (West-)Germanic auxiliary **dōn* 'to do' (see Szczepaniak 2011: 112–116). Depending on the degree of grammaticalisation, such constructions can be more or less transparent in the sense of NM (for a detailed discussion, see Bülow 2017). In the following section, we will discuss how the fundamental principles of NM, such as constructional iconicity, uniformity, transparency, word length, token frequency and type frequency, might affect the development of subjunctive II formation in the Bavarian dialects of Austria.

3.2 Applicability of the data

As pointed out in Section 2.2, for the formation of subjunctive II in the Bavarian dialects of Austria, three aspects of change have to be discussed with regard to the premises of NM: a) Which verbs and verb classes prefer which variant(s) and why? b) Why do periphrastic variants displace synthetic variants? c) Does the *würde-* or the *täte*-auxiliary prevail for periphrastic subjunctive II formation and why?

If we first look at the synthetic variants, we see that they are formed either weakly with the *-at*-suffix attached to the present stem, strongly with the preterite stem or mixed with the *-at*-suffix attached to the preterite stem (see Table 1). In the course of the change, the *-at*-suffix, which was originally restricted to the class of weak verbs, was extended to both the class of strong and irregular verbs. The use of the *-at*-suffix for all verb classes is, for instance, evident in the early 20th century data analysed be Stöckle (2020) and is still present in recent rural dialect data, as Vergeiner and Bülow (2022) show (see Section 2.2). Thus, the *-at*-suffix extended its scope and is not restricted to use within a particular verb class today (Bittner and Köpcke 2010: 40). Therefore, Vergeiner and Bülow (2020) argue that the strong–weak distinction in subjunctive II has become more or less obsolete in Bavarian dialects of Austria.

Considering the premises of NM, synthetic variants with the *-at*-suffix have clear advantages over the variants formed with ablaut or umlaut. The *-at*-suffix is a transparent and uniform subjunctive II marker that is short but easy to distinguish and does not compete with other suffixes. It is also constructionally iconic since the more complex category (subjunctive II) is marked additively (*-at*-suffix). Furthermore, the use of the *-at*-suffix is very regular and therefore easy to acquire and learn,

and it does not result in syncretism. Thus, according to the principles of NM, the *-at*-suffix seems to be the optimal symbolisation strategy for at least the weak and strong verbs that have no high token frequency (which would allow for more irregularity; see Section 3.1). Consequently, according to NM, Bittner and Köpcke (2010: 41) predict that the *-at*-suffix clearly outperforms the other variants in the long run.

However, even if the *-at*-suffix is still well-established in the rural Bavarian dialects, the real-time comparison and apparent-time effects shown in Section 2.2 indicate a decrease in the degree of normality for the *-at*-suffix. Thus, the assumptions of Bittner and Köpcke (2010) do not fit the empirical findings. Rather, the more recent dialect data indicate a decrease in synthetic variants (both with and without *-at*-suffix) in favour of periphrastic variants for both weak and strong verbs, which aligns well with the development of subjunctive formation in Standard German, where we also see a shift towards periphrastic variants (Roelcke 2011: 129). It is very likely that the decrease in strong synthetic forms and the increase in periphrastic variants are interdependent, as the increase in periphrastic variants fosters the levelling of the inflectional class distinction (Dammel 2011: 173). This, in turn, results in weaker lexical anchoring of the strong and irregular subjunctive II forms, which cannot be predicted from other forms because of possible vowel changes by ablaut and/or umlaut. Consequently, if the subjunctive II forms of these verbs can no longer be accessed (or are no longer acquired from the input during language acquisition), it is quite likely and comprehensible that speakers will use the more type-frequent and regular *-at*-suffix or choose a periphrastic variant. Nevertheless, it is significant that the strong synthetic forms still dominate among the irregular verbs *sein* 'to be', *haben* 'to have' and *tun* 'to do', which have high token frequencies.

While NM, which is essentially a morphological theory of change, can explain the spread of the *-at*-suffix nicely, it cannot explain its decline in favour of periphrastic variants that follow a syntactic principle. Since NM allows only very limited predictions about the development of periphrastic phenomena, it is also only of marginal use in explaining or predicting the competition between the two periphrastic variants (*täte-* vs. *würde*-auxiliary). In the following section, we will examine and discuss whether the framework of CxM is helpful in dealing with phenomena that are located between morphology and syntax, such as subjunctive II formation.

4 Construction morphology

In this section, we discuss the concept of morphology presumed by CxM. In doing so, we focus on the formal framework provided by CxM, i.e. the theory's understanding of the form of basic morphological units and processes. Although CxM might not be

considered a "formal theory" (which is a problematic notion anyway; see Section 1 and Newmeyer 2016), its formal conceptions and explanations are highly relevant to account for phenomena that are located in between morphology and syntax. We illustrate this, first, by introducing the key assumptions of CxM (Section 4.1), and second, by showing their applicability to our data (Section 4.2).

4.1 Key assumptions

CxM is based on the general framework of construction grammar (CxG), a family of interrelated theories centred around the view that language structure consists of constructions (cf., e.g. the different theoretical approaches in Hoffmann and Trousdale 2013). Following Goldberg's (1995: 4) influential definition, a construction can be understood as "a form-meaning pair" whose form and/or meaning is not predictable from either its components or other constructions. In addition, one can assume that "patterns are stored as constructions even if they are fully predictable as long as they occur with sufficient frequency" and thus become conventionalised (Goldberg 2006: 5; for discussion cf., e.g. Hilpert 2019: 12–14).

Constructions may have different levels of abstraction (Hoffmann and Trousdale 2013: 2). Some are fully specified (e.g. idioms like *Hang on!*),[5] while others are either partially or fully schematic (e.g. idioms such as *The X-er the Y-er*, with X and Y being open slots, or the ditransitive construction consisting of just four open slots: *Subj V Obj$_1$ Obj$_2$*). Constructions are stored in the so-called "constructicon" (Fillmore 1988), which is a structured network of interconnected constructions (Hilpert 2019: 57–68). Another key idea shared by most constructional approaches is that "it is constructions all the way down" (Goldberg 2006: 18). This is to say that constructions are found on all structural levels (i.e. in the lexicon, in morphology and in syntax) with no clear boundaries between these levels ("lexicon-grammar continuum"; cf. Booij and Audring 2017; Goldberg 2006: 220; Jackendoff 2008: 15). For this reason, CxG and CxM are "particularly useful for modelling phenomena that straddle the boundary between syntax and morphology" (Masini and Audring 2018: 365).

CxM has been developed by Geert Booij and others (e.g. Booij 2010a, 2010b, 2013, 2016; Booij and Audring 2017; Masini and Audring 2018; van der Spuy 2017). Its main focus has been on word formation (Masini and Audring 2018: 365), but there are some accounts of inflection as well (e.g. Booij 2010a, 2013: 265–268, 2016: 439–444; Masini and Audring 2018: 384–385; van der Spuy 2017). Unlike NM, CxM is not morpheme-based but word-based. Hence, words are taken as starting points of

5 Sometimes only schematic constructions are counted as constructions, while specific structures (e.g. idioms and words) are labelled as constructs (cf., e.g. van der Spuy 2017: 61).

morphological analysis (resulting in a word-and-paradigm approach to inflection; cf., e.g. Blevins et al. 2018). Proponents of CxM argue that morphemes are not in themselves meaningful but only within larger structures (Booij 2010a: 15, 2016: 428) – either within concrete word forms (3) or within abstract schemas (4) (the formalisation is based on Booij 2010a; van der Spuy 2017: 61). Only within these structures does CxM "recognize morphemes as secondarily derived units of analysis" (Masini and Audring 2018: 368).

(3) /mɔx-ɐt/$_{[V\ 1/3.P.Sg.\ Sbj.]}$ ↔ '[1/3. pers. sg.] [sbj] DO'

(4) /X_i-ɐt/$_{[V\ 1/3.P.Sg.\ Sbj.]}$ ↔ '[1/3. pers. sg.] [sbj] X_i'

The example in (4) represents an abstract schema for subjunctive II formation with *-at*. The formal side of the construction is displayed on the left side of the arrow and the semantic side on the right. Regarding its form, the schema consists of a variable (X, which is a variable for a verb stem) and a constant (/ɐt/); thus, it is a constructional idiom, "a (syntactic or morphological) schema in which at least one position is lexically fixed, and at least one position is variable" (Booij 2013: 258). A schema is built up as a generalisation from fully specified constructions, such as (3) for *mochat* ('would make'), which are said to instantiate the schema. Schemas have two main functions: First, they motivate existing word forms, and second, they are used as templates for conjoining new word forms (e.g. Booij 2016: 427): "Schemas are the generative engine in word formation and inflection, whereas fully specified constructions tell us which words are actually instantiated […]. Both words and schemas are pieces of linguistic knowledge stored in the constructicon" (Masini and Audring 2018: 372; see also Booij 2016: 430, 440).[6]

As already mentioned, the constructicon is conceptualised as a structured network of interrelated constructions. It consists, for example, of (vertical) "inheritance links", connecting high-level schemas with low-level instantiations (and sometimes subschemas in-between). Via inheritance links, instantiations can inherit predictable properties from their dominating schema; for example, (3) inherits its properties from (4). However, there is only a "default inheritance", and low-level constructions can have non-predictable properties if this is specified in the lexical entry. CxM also allows for multiple inheritance, connecting, for example, one word form to several schemas (Booij 2016: 440; Masini and Audring 2018: 373–374).

6 This is not to say that for every word all inflected forms are listed in memory since this is "not realistic" for "languages with rich inflectional systems" (Masini and Audring 2018: 384). It is, however, realistic that some regularly inflected forms are stored in memory, in particular "principal parts" (e.g. Blevins et al. 2018: 269, 278–282), which allow to identify the inflectional class and to compute the other forms of the paradigm (e.g. Masini and Audring 2018: 384–385; Booij 2013: 267).

Another important part of the constructicon comprises (horizontal) links connecting same-level constructions, for example, word forms within the same paradigm (e.g. Booij 2010a: 31–36; Hilpert 2019: 84–86; Masini and Audring 2018: 384–385). Paradigmatic relationships can be symbolised with ≈ as in (5) or (6). While (5) links two fully specified constructions (accounting for the suppletion with regard to *san* 'to be'), (6) is an example of what Booij (2010a: 31–36) calls a "second order schema", which means that it links different schemas ((6) connects the schemas for subjunctive II formation with *-at* in the 2nd person singular and the 2nd person plural).

(5) /san/$_{[V\ Inf.]}$ ↔ 'BE' ≈ /va:/$_{[V\ 1/3.P.Sg.\ Sbj.]}$ ↔ '[1/3. pers. sg.] [sbj] BE'

(6) /X_i-ɐt-st/$_{[V\ 2.P.Sg.\ Sbj.]}$ ↔ '[2. pers. sg.] [sbj] X_i' ≈ /X_i-ɐt-s/$_{[V\ 2.P.\ Pl.\ Sbj.]}$ ↔ '[2. pers. pl.] [sbj] X_i'

An important advantage of CxM is that "the model requires no special machinery" to account for periphrastic constructions because "stored forms in a paradigm are constructions and constructions can be morphological as well as phrasal" (Masini and Audring 2018: 385). Consequently, periphrastic constructions can be modelled as constructional idioms. The schema in (7) shows this for periphrastic subjunctive II formation with the *täte*-auxiliary.[7] As displayed, in periphrastic constructions, the auxiliary is lexically fixed, and the non-finite form, in (7) the infinitive, is a variable (e.g. Booij 2016: 443–444).

(7) /ta:t X_i-n$_{[V\ Inf]}$/$_{[V\ 1/3.P.Sg.\ Sbj.]}$ ↔ '[1/3. pers. sg.] [sbj] X_i'

Notably, periphrastic constructions are constructions par excellence because of their non-compositionality (Booij 2010b: 553, 2013: 267–268, 2016: 443–444). In (7), the verb form *tat* does not express the meaning 'to do' but a grammatical meaning of modality in combination with the infinitive. The grammatical meaning is a property of the whole construction, not of its individual parts.

4.2 Applicability of the data

Based on the key assumptions of Section 4.1, the different variants of subjunctive II in Bavarian can be modelled. With regards to strong synthetic forms, one has to remember that these variants are highly irregular (e.g. when it comes to ablaut patterns, see, e.g. Vergeiner 2022a). Consequently, there is no uniform constructional schema for strong synthetic forms, and most individual forms must be captured by

7 With regard to the infinitive ending, we ignore allomorphic variation between /n/, /ɐ/ and Ø in different Bavarian dialects (e.g. Vergeiner and Wallner 2022 for this allomorphic variation). For the treatment of allomorphy in CxM cf. e.g. Booij (2010a).

fully specified constructions, such as (8) (for *kena – kant* 'can') or (9) (for *tuan – tat* 'do').

(8) /kɛn-ɐ/$_{[V\ Inf.]}$ ↔ 'CAN' ≈ /kant/$_{[V\ 1/3.P.Sg.\ Sbj.]}$ ↔ '[1/3. pers. sg.] [sbj] CAN'

(9) /tuɐ-n/$_{[V\ Inf.]}$ ↔ 'DO' ≈ /ta:t/$_{[V\ 1/3.P.Sg.\ Sbj.]}$ ↔ '[1/3. pers. sg.] [sbj] DO'

Only in some cases is it possible to assume low-level schemas for strong synthetic forms. For example, (10) models the strong synthetic forms without ablaut in verbs like *woin – woit* 'want' or *soin – soit* 'should'.

(10) /X_i-n/$_{[V\ Inf]}$ ↔ 'X_i' ≈ /X_i-t/$_{[V\ 1/3.P.Sg.\ Sbj.]}$ ↔ '[1/3. pers. sg.] [sbj] X_i', where /X-n/ = {*woin*, *soin* …}

The schema in (10) states that /n/ in the infinitive form is replaced by /t/ in subjunctive II form within verbs, such as *woin* or *soin*.

To capture subjunctive II formation with a weak synthetic ending, the situation is less complicated. The second-order schema in (11) simply states that subjunctive II is formed by replacing the infinitive ending *-n* with *-at* (e.g. *moch-n – moch-at* 'make').

(11) /X_i-n/$_{[V\ Inf]}$ ↔ 'X_i' ≈ /X_i-ɐt/$_{[V\ 1/3.P.Sg.\ Sbj.]}$ ↔ '[1/3. pers. sg.] [sbj] X_i'

To account for mixed synthetic forms, it is crucial to remember that CxM allows for multiple inheritance, for example, via unification, a "binatory mechanism that merges a construction with another construction" (Masini and Audring 2018: 374). For example, to account for subjunctive forms, such as *woin – woitat* 'want' or *soin – soitat* 'should', the schemas in (10) and (11) can be unified into (12).

(12) /X_i-n/$_{[V\ Inf]}$ ↔ 'X_i' ≈ /X_i-t-ɐt/$_{[V\ 1/3.P.Sg.\ Sbj.]}$ ↔ '[1/3. pers. sg.] [sbj] X_i', where /X-n/ = {*woin*, *soin* …}

As already noted in Section 4.1, periphrastic variants can be modelled as constructional idioms in which the auxiliary is lexically fixed and the infinitive is a variable. The schema in (13) shows this for the periphrastic variant with *täte*, and the schema in (14) shows this for the periphrastic variant with *würde*.

(13) /X_i-n/$_{[V\ Inf]}$ ↔ 'X_i' ≈ /ta:t X_i-n$_{[V\ Inf]}$/$_{[V\ 1/3.P.Sg.\ Sbj.]}$ ↔ '[1/3. pers. sg.] [sbj] X_i'

(14) /X_i-n/$_{[V\ Inf]}$ ↔ 'X_i' ≈ /vʊɐt X_i-n$_{[V\ Inf]}$/$_{[V\ 1/3.P.Sg.\ Sbj.]}$ ↔ '[1/3. pers. sg.] [sbj] X_i'

In sum, this section has shown that the formal framework of the CxM allows accounting for the different subjunctive II variants in the Bavarian dialects of Austria, in both synthetic and periphrastic forms. However, the formalism of CxM does not explain why there is a change from synthetic to periphrastic forms. In what follows,

we discuss whether CxM is complementary to NM and whether this complementary approach allows us to explain this change.

5 Bringing together natural morphology and construction morphology

Recent studies on variation and change in the use of subjunctive II variants have revealed two major developments in the Bavarian dialects of Austria (see Section 2). In particular, the *-at*-suffix, which was originally restricted to the class of weak verbs, has been extended to the class of strong and irregular verbs. This process was already well advanced in the first half of the 20th century (Stöckle 2020). Since then, however, the *-at*-suffix has been largely replaced by periphrastic variants that dominate present day's dialects (Breuer and Wittibschlager 2020; Edler and Oberdorfer 2022; Vergeiner and Bülow 2022).

Section 3 indicates that NM can account for the first process, but due to its narrow understanding of morphology, NM allows for only very limited predictions about the development of periphrastic phenomena. To account for such phenomena, a more flexible and formal framework of morphology is needed. CxM provides such a framework (Masini and Audring 2018: 365). In what follows, we discuss, first, whether the fundamental principles of NM can be integrated into the framework of CxM and, second, how to explain the change from synthetic to periphrastic variants.

NM is a morpheme-based theory, while CxM is word-based. Consequently, the fundamental principles of NM relate to morphemes, whereas CxM recognises morphemes only within word forms or constructional schemas (Masini and Audring 2018: 368). Therefore, the fundamental principles of NM, such as constructional iconicity, uniformity and transparency (Mayerthaler 1981), need to be reformulated in a way in which they relate to constructional schemas. This is possible because the principles of NM concern the relationship between form and meaning, and constructions are defined as form-meaning pairs as well (Goldberg 1995: 4). Iconicity[8] thus refers to the form-meaning ratio of two related constructions. The construction with the more complex meaning also needs to be encoded in a more distinctive way on the form side (i.e. that the formal side of the construction consists of more phonological material). The principles of uniformity and transparency can also be reformulated very simply. A construction is uniform if there are no homonymous constructions and one form corresponds to just one meaning. In turn, a construction

8 Our notion here is based on Mayerthaler (1981), but there are other definitions of iconicity as well (e.g. Haiman 2000); notably, the very concept itself is sometimes disputed (e.g. Haspelmath 2008).

is transparent if there are no synonymous constructions and one meaning corresponds to just one form.[9] Other principles such as length, token frequency and type frequency can be used without significant modifications. As a result, all relevant NM principles are consistent with the CxM framework.

While this complementary approach obviously allows us to explain the extension of the *-at*-variant, the question remains as to why the *-at*-construction will be replaced by periphrastic constructions. The main difference between the *-at*-construction and the periphrastic constructions, besides the fact that only the former operates at the word-internal level, is the more complex or rather longer form of the latter. Consequently, based purely on the principle of length, periphrastic constructions would not be ideal, since their symbolisation strategy entails longer cognitive processing time compared with the *-at*-construction. In addition, formal complexity also relates to the principle of iconicity. Based on the definition above, complex meanings such as subjunctive mood should be encoded to be more complex than basic meanings such as indicative mood. Importantly, the *-at*-construction already fulfils this principle, and in comparison, the periphrastic constructions, in a certain way, even overfulfil it, given the existence of the formally more ideal *-at*-construction. Consequently, regarding the periphrastic constructions, one must deal with their 'extra-iconicity', i.e. their overabundance of iconicity that is organised on a phrasal level, to explain its spread. Especially in language and variety contact situations, extra-iconicity is a factor in explaining change. This needs to be elaborated.

For this purpose, some background information on the linguistic situation in Austria might be helpful. The most important direction of change in today's Austrian dialects is convergence due to variety contact, both with standard varieties and among the dialects themselves (e.g. Auer 2018; Bülow 2019; Bülow et al. 2019). This is particularly evident in the East-Central Bavarian dialects of Austria, where periphrastic constructions are the most widespread (Vergeiner and Bülow 2022). In several studies, the East-Central Bavarian dialect region has been shown to be strongly affected by levelling processes, which are presumably induced by the urban varieties of Vienna. In addition, there is a high dynamic of change in the Southeast, where the traditional South (or South-Central) Bavarian dialects tend to adopt East-Central Bavarian dialect features in the course of a broader restructuring process (cf. Vergeiner 2022b). In contrast, synthetic forms are most strongly preserved in those (rather remote and mountainous) areas in the west where variety contact has less of an impact on dialects (cf. Vergeiner and Bülow 2022).

9 Notably, some proponents of CxG have already formulated similar principles for syntactic structures (e.g. Welke 2020: 36).

These facts relate to the observation that extra-iconicity is a factor in a variety of contact situations and that "analyticization is favoured by language contact" (Haspelmath and Michaelis 2017: 15). Haspelmath and Michaelis (2017: 16) explain this tendency with their "Extra-Transparency Hypothesis", suggesting that

> [i]n social situations with many (or even mostly) adult second-language speakers, people need to make an extra effort to make themselves understood – they need to add extra transparency. This naturally leads to the overuse of content items for grammatical meanings, which may become fixed when more and more speakers adopt the innovative uses.

The term "transparency" in the quote must not be confused with its definition above. Instead, it relates to the notion of "extra-iconicity" we used before. Periphrastic constructions are overly iconic because they employ a comparatively longer constructional schema with an auxiliary that is connected to the free lexeme it originated from via a "subpart link".[10] Given the intense dialect-standard contact within Austria,[11] this constructional schema might be a better symbolisation strategy because only its rather "extra-iconic" form might be sufficient to symbolise the more complex meaning of subjunctive mood. Eventually, although the *-at*-construction is the unmarked (most natural) variant among L1 speakers, it is marked in today's high-contact scenario since its form is too inconspicuous to be recognised as a subjunctive construction (for the situation in Vienna, see Glauninger 2008, 2010).

While this interpretation mainly concerns ease of perception, the word-based framework of CxM suggests that periphrastic constructions have some advantages for speakers with imperfect dialect competence. While the *-at*-construction requires speakers to identify the verb stem (for example, by decomposing the infinitive form),[12] periphrastic constructions do not require this condition (see the constructional schemas in Section 4.2). Therefore, periphrastic constructions, such as those presented in examples (13) and (14) (see Section 4.2), have the advantage of being easy to use, learn and remember, in particular with less frequent verbs (cf. also Wilde 2015: 199). Speakers only have to know the infinitive of a given verb and combine it with the auxiliary, whose subjunctive forms are stored holistically in the constructicon. Only the subjunctive forms of some other frequent verbs, such as *sein* 'be'

10 Subpart links "relate constructions that show either formal or semantic overlap but which do not allow the classification of one construction as an instance of the other" (Hilpert 2019: 62). Thus, for example, the construction with the *täte*-auxiliary is linked with the lexeme *tun* 'do'.

11 Note that there is also language contact in some regions such as Carinthia and Burgenland with regional minority languages (most importantly Slovenian, Hungarian and Croatian). In addition, there is contact with immigrant minority languages such as Turkish in more urban communities. However, the impact of this language contact on traditional dialects has hardly been researched.

12 This might be a problem because of allomorphic variation, for example, with regards to the infinitive ending (e.g. Vergeiner and Wallner 2022).

or *haben* 'have', should also be memorised as a whole and thus be less affected by analyticisation, which is exactly what we observe (Vergeiner and Bülow 2022: 22).

Although other factors might play a role as well – for example, the general tendency to consolidate the analytical principle within German (e.g. Roelcke 2011: 129) – intense variety contact and the related problems for language users are most probably the main causes for the spread of the periphrastic variants during the last decades. The finding that the *würde*-auxiliary prevails over the *täte*-auxiliary among younger speakers in urban areas (see Section 2.2) can also be explained by variety contact. Especially in cities like Vienna and Graz, the influence of the standard, in which subjunctive II formation with the *würde*-auxiliary for weak and strong verbs predominates today (Edler and Oberdorfer 2022: 80), is particularly strong. In a nutshell, dialect-standard contact favours the spread of periphrastic constructions. They have the disadvantage of length but the advantage of being much easier to produce and comprehend. As shown in this section, merging the functional explanations of NM and the formalism of CxM allows for a better and complementary understanding of this process.

6 Conclusions

The aim of this study was to explain the empirical findings on subjunctive II formation in the Bavarian dialects of Austria from both functional and formal perspectives. For this purpose, we compared the explanatory power of the functional and widely established principles of natural morphology (NM) with the more recent formal framework of constructional morphology (CxM). As argued in this paper, the two approaches relate well to each other, with key ideas of NM (constructional iconicity, uniformity and transparency) being easily adaptable in terms of CxM. These adjustments in the spirit of a word-based CxM framework allow us to explain the well-documented shift towards the use of periphrastic constructions, which is, regarding subjunctive II formation in the Bavarian dialects of Austria, located at the interface between morphology and syntax.

References

Auer, Peter. 2018. Dialect change in Europe: Leveling and convergence. In Charles Boberg, John Nerbonne & Dominic Watt (eds.), *The handbook of dialectology*, 159–176. Oxford: Wiley.

Bittner, Andreas & Klaus-Michael Köpcke. 2010. *Ich würde, wenn ich wüsste, dass ich könnte …*: Der Konjunktiv zwischen Synthese und Analyse. In Dagmar Bittner & Livio Gaeta (eds.),

Kodierungstechniken im Wandel: Das Zusammenspiel von Analytik und Synthese im Gegenwartsdeutschen, 23–46. Berlin & New York: De Gruyter.

Blevins, James P., Farrell Ackerman & Robert Malouf. 2018. Word and paradigm morphology. In Audring Jenny & Francesca Masini (eds.), *The Oxford handbook of morphological theory*, 265–284. Oxford: Oxford University Press.

Booij, Geert. 2010a. *Construction morphology*. Oxford: Oxford University Press.

Booij, Geert. 2010b. Construction morphology. *Language & Linguistics Compass* 4(7). 543–555.

Booij, Geert. 2013. Morphology in construction grammar. In Thomas Hoffmann & Graeme Trousdale (eds.), *The Oxford handbook of construction grammar*, 255–273. Oxford: Oxford University Press.

Booij, Geert. 2016. Construction morphology. In Andrew Hippisley & Gregory Stump (eds.), *The Cambridge handbook of morphological theory*, 424–448. Cambridge: Cambridge University Press.

Booij, Geert & Jenny Audring. 2017. Construction morphology and the parallel architecture of grammar. *Cognitive Science* 41(2). 277–302.

Breuer, Ludwig M. & Lars Bülow. 2019. Experimental approaches in the realm of language variation: How language production tests can help us to better understand language variation. In Lars Bülow, Kristina Herbert & Ann-Kathrin Fischer (eds.), *Dimensionen des sprachlichen Raums: Variation – Mehrsprachigkeit – Konzeptualisierung* (Schriften zur deutschen Sprache in Österreich 45), 251–269. Wien: Peter Lang.

Breuer, Ludwig M. & Anja Wittibschlager. 2020. The variation of the subjunctive II in Austria: Evidence from urban and rural analyses. *Linguistic Variation* 20(1). 136–171.

Bülow, Lars. 2017. *Sprachdynamik im Lichte der Evolutionstheorie: Für ein integratives Sprachwandelmodell* (Zeitschrift für Dialektologie und Linguistik Beihefte 166). Stuttgart: Franz Steiner.

Bülow, Lars. 2019. Variation und Wandel der Pluralformen von *sein* in den Dialekten Salzburgs. *JournaLIPP* 7. 18–38.

Bülow, Lars, Philip C. Vergeiner, Hannes Scheutz, Dominik Wallner & Stephan Elspaß. 2019. Wie regelhaft ist Lautwandel? Grundsätzliche Überlegungen anhand einer Fallstudie zu mhd. *ô* in den bairischen Dialekten Österreichs und Südtirols. *Zeitschrift für Dialektologie und Linguistik* 86(1). 5–50.

Dammel, Antje. 2011. *Konjugationsklassenwandel: Prinzipien des Ab-, Um- und Ausbaus verbalflexivischer Allomorphie in germanischen Sprachen*. Berlin & New York: De Gruyter.

Donhauser, Karin. 1992. Der Konjunktiv im Bairischen. In Andreas Weiss (ed.), *Dialekte im Wandel: Referate der 4. Tagung zur bayerisch-österreichischen Dialektologie (Salzburg, 5.–7. Oktober 1989)*, 226–242. Göppingen: Kümmerle.

Dressler, Wolfgang U. 1987. *Leitmotifs in natural morphology*. Amsterdam: Benjamins.

Edler, Stefanie & Georg Oberdorfer. 2022. Konjunktiv-II-Variation im urbanen Sprachgebrauch in Österreich. *Linguistik Online* 114(2). 67–98.

Fillmore, Charles J. 1988. The mechanisms of “construction grammar”. *Berkeley Linguistics Society* 14. 35–55.

Fischer, Hanna. 2018. *Präteritumschwund im Deutschen: Dokumentation und Erklärung eines Verdrängungsprozesses* (Studia Linguistica Germanica 132). Berlin & Boston: De Gruyter.

Fleischer, Jürg. 2004. A typology of relative clauses in German dialects. In Bernd Kortmann (ed.), *Dialectology meets typology: Dialect grammar from a cross-linguistic perspective* (Trends in Linguistics Studies and Monographs 153), 211–243. Berlin & New York: De Gruyter.

Glauninger, Manfred. 2008. Synthetische und analytische „Konjunktiv 2“-Formen im Wiener Nonstandard-Deutsch. In Franz Patocka & Guido Seiler (eds.), *Dialektale Morphologie, dialektale Syntax: Beiträge zum 2. Kongress der Internationalen Gesellschaft für Dialektologie des Deutschen (Wien, 20.–23. September 2006)*, 233–247. Wien: Praesens.

Glauninger, Manfred. 2010. Zur „(Morpho-)Pragmatik“ von „Konjunktiv 2“-Formen im Wiener Nonstandard-Deutsch. In Heinz Dieter Pohl (ed.), *Akten der 10. Arbeitstagung für bayerisch-österreichische Dialektologie (Klagenfurt, September 2007)*, 98–107. Wien: Praesens.

Goldberg, Adele. 1995. *A construction grammar approach to argument structure*. Chicago: University of Chicago Press.

Goldberg, Adele. 2006. *Constructions at work: The nature of generalizations in language*. Oxford: Oxford University Press.

Haiman, John. 2000. Iconicity. In Geert Booij, Christian Lehmann & Joachim Mugdan (eds.), *Morphology: An international handbook on inflection and word-formation*, vol. 1, 281–288. Berlin & New York: De Gruyter.

Haspelmath, Martin. 2008. Frequency vs. iconicity in explaining grammatical asymmetries. *Cognitive Linguistics* 19(1). 1–33.

Haspelmath, Martin & Susanne M. Michaelis. 2017. Analytic and synthetic: Typological change in varieties of European languages. In Isabelle Buchstaller & Beat Siebenhaar (eds.), *Language variation – European perspectives VI: Selected papers from the 8th international conference on language variation in Europe, Leipzig, May 2015*, 3–22. Amsterdam: Benjamins.

Hilpert, Martin. 2019. *Construction grammar and its application to English*, 2nd edn. Edinburgh: Edinburgh University Press.

Hoffmann, Thomas & Graeme Trousdale. 2013. Construction grammar: Introduction. In Thomas Hoffmann & Graeme Trousdale (eds.), *The Oxford handbook of construction grammar*, 1–12. Oxford: Oxford University Press.

Jackendoff, Ray. 2008. Construction after construction and its theoretical challenges. *Language* 84(1). 8–28.

Langer, Nils. 2001. *Linguistic purism in action: How auxiliary tun was stigmatized in early new high German*. Berlin & New York: De Gruyter.

Lenz, Alexandra N., Ludwig M. Breuer, Matthias Fingerhuth, Anja Wittibschlager & Melanie Seltmann. 2019. Exploring syntactic variation by means of “language production experiments”: Methods from and analyses on German in Austria. *Journal of Linguistic Geography* 7(2). 63–81.

Lenzhofer, Melanie. 2017. *Jugendkommunikation und Dialekt: Syntax gesprochener Sprache bei Jugendlichen in Osttirol* (Empirische Linguistik 6). Berlin & Boston: De Gruyter.

Lotze, Stefan & Peter Gallmann. 2009. Norm und Variation beim Konjunktiv II. In Marek Konopka & Bruno Strecker (eds.), *Deutsche Grammatik: Regeln, Normen, Sprachgebrauch* (Institut für deutsche Sprache Jahrbuch 2008), 222–239. Berlin & New York: De Gruyter.

Masini, Francesca & Jenny Audring. 2018. Construction morphology. In Audring Jenny & Francesca Masini (eds.), *The Oxford handbook of morphological theory*, 365–389. Oxford: Oxford University Press.

Mayerthaler, Willi. 1981. *Morphologische Natürlichkeit*. Wiesbaden: Athenaion.

Merkle, Ludwig. 1993. *Bairische Grammatik*. München: Hugendubel.

Newmeyer, Frederick J. 2003. Formal and functional motivation for language change. In Raymond Hickey (ed.), *Motives for language change*, 18–36. Cambridge: Cambridge University Press.

Newmeyer, Frederick J. 2016. Formal and functional explanation. In Ian Roberts (ed.), *The Oxford handbook of universal grammar*, 129–152. Oxford: Oxford University Press.

Niehaus, Konstantin, Irmtraud Kaiser & Peter Mauser. 2022. Der Konjunktiv II in Salzburger Varietäten: Grammatik, Gebrauch, soziale Faktoren. *Linguistik Online* 114(2). 99–128.

Nübling, Damaris. 1997. Der alemannische Konjunktiv II zwischen Morphologie und Syntax: Zur Neuordnung des Konjunktivsystems nach dem Präteritumschwund. In Arno Ruoff & Peter Löffelad (eds.), *Syntax und Stilistik der Alltagssprache: Beiträge der 12. Arbeitstagung zur alemannischen Dialektologie*, 107–121. Niemeyer: Tübingen.

Nübling, Damaris. 2000. *Prinzipien der Irregularisierung: Eine kontrastive Analyse von zehn Verben in zehn germanischen Sprachen*. Tübingen: Niemeyer.

Nübling, Damaris, Antje Dammel, Janet Duke & Renata Szczepaniak. 2017. *Historische Sprachwissenschaft des Deutschen: Eine Einführung in die Prinzipien des Sprachwandels*, 5th edn. Tübingen: Narr.

Pickl, Simon. 2022. Formen und Funktionen des Konjunktivs II in historischen ostoberdeutschen Predigten: Eine Langzeit-Perspektive. *Linguistik Online* 114(2). 157–192.

Quehenberger, Sonja, Lars Bülow & Philip C. Vergeiner. 2022. Die Konjunktiv-II-Bildung im Kontext von Partikelverben in den Basisdialekten Salzburgs. *Linguistik Online* 114(2). 129–155.

Roelcke, Thorsten. 2011. *Typologische Variation im Deutschen: Grundlagen – Modelle – Tendenzen*. Berlin: Erich Schmidt Verlag.

Saltveit, Laurits. 1983. Anlage der Modussysteme in den deutschen Dialekten. In Werner Besch, Ulrich Knoop, Wolfgang Putschke & Herbert E. Wiegand (eds.), *Dialektologie: Ein Handbuch zur deutschen und allgemeinen Dialektforschung.* Half-Volume 2 (Handbücher zur Sprach- und Kommunikationswissenschaft 1.2), 1220–1232. Berlin & New York: De Gruyter.

Scheutz, Hannes. 2005. Perspektiven einer neuen Dialekt-Syntax. In Eckhard Eggers, Jürgen Erich Schmidt & Dieter Stellmacher (eds.), *Moderne Dialekte – Neue Dialektologie: Akten des 1. Kongresses der Internationalen Gesellschaft für Dialektologie des Deutschen (IGDD) am Forschungsinstitut für deutsche Sprache „Deutscher Sprachatlas" der Philipps-Universität Marburg vom 5.–8. März 2003* (Zeitschrift für Dialektologie und Linguistik Beihefte 130), 291–312. Stuttgart: Steiner.

Schönbach, Anton E. 1899. Ueber den conjunctiv praeteriti im bairisch-österreichischen. *Beiträge zur Geschichte der deutschen Sprache und Literatur* 24. 232–238.

Schwarz, Christian. 2009. *Die ‚tun'-Periphrase im Deutschen: Gebrauch und Funktion*. Saarbrücken: Dr. Müller.

Spuy, Andrew van der. 2017. Construction morphology and inflection. *Lingua* 199. 60–71.

Stöckle, Philipp. 2020. Dialektvariation an der Schnittstelle von Syntax, Morphologie und Lexik: Der Konjunktiv II in den bairischen Dialekten Österreichs und Südtirols. In Helen Christen, Brigitte Ganswindt, Joachim Herrgen & Jürgen E. Schmidt (eds.), *Regiolekt: Der neue Dialekt?* (Zeitschrift für Dialektologie und Linguistik Beihefte 182), 149–173. Stuttgart: Steiner.

Stöckle, Philipp & Anja Wittibschlager. 2022. Zur Sprachdynamik des Konjunktivs im Bairischen in Österreich. *Linguistik Online* 114(2). 43–66.

Szczepaniak, Renata. 2011. *Grammatikalisierung im Deutschen: Eine Einführung*. Tübingen: Narr.

Vergeiner, Philip C. 2022a. Flexionsklassenstabilität oder -wandel? Über starke und schwache Verben in den österreichischen Dialekten. *Sprachwissenschaft* 47(2). 103–131.

Vergeiner, Philip C. 2022b. Variation und Wandel des postvokalischen *r*: Zum intra- und interdialektalen Levelling in Österreich. *Taal en Tongval* 74(2). 215–246.

Vergeiner, Philip C. & Lars Bülow. 2022. Der Konjunktiv II in den ruralen Basisdialekten Österreichs: Quantitative und qualitative Befunde. *Linguistik Online* 114(2). 3–42.

Vergeiner, Philip C. & Dominik Wallner. 2022. On explaining stable dialect features: A real- and apparent-time study on the word-final syllable *-en* in Austrian base dialects. *Open Linguistics* 8(1). 65–86.

Weiß, Helmut. 1998. *Syntax des Bairischen: Studien zur Grammatik einer natürlichen Sprache*. Tübingen: Niemeyer.

Weiß, Helmut. 2004. Vom Nutzen der Dialektsyntax. In Franz Patocka & Peter Wiesinger (eds.), *Morphologie und Syntax deutscher Dialekte und Historische Dialektologie des Deutschen*, 21–41. Wien: Edition Praesens.

Weiß, Helmut & Thomas Strobel. 2018. Neuere Entwicklungen in der Dialektsyntax. *Linguistische Berichte* 253. 3–35.

Welke, Klaus. 2020. *Konstruktionsgrammatik des Deutschen: Ein sprachgebrauchsbezogener Ansatz*. Berlin & Boston: De Gruyter.

Werner, Otmar. 1987. Natürlichkeit und Nutzen morphologischer Irregularität. In Norbert Boretzky, Werner Enninger & Thomas Stolz (eds.), *Beiträge zum 3. Essener Kolloquium über Sprachwandel und seine bestimmenden Faktoren: Vom 30.09.–02.10.1987 an der Universität Essen*, 289–316. Bochum: Brockmeyer.

Wiesinger, Peter. 1989. *Die Flexionsmorphologie des Verbums im Bairischen*. Wien: Verlag der Österreichischen Akademie der Wissenschaften.

Wilde, Michael. 2015. *Der Konjunktiv im Schweizerdeutschen: Empirische Studien zu Stabilität und Wandel im deutschen Modussystem*. Lang: Bern.

Wurzel, Wolfgang U. 1984. *Flexionsmorphologie und Natürlichkeit: Ein Beitrag zur morphologischen Theoriebildung*. Berlin: Akademie.