

A sociolinguistic analysis of the German alternation between *bis an* and *bis zu* constructions

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1. Alternative constructions and conceptual variation

Linguistic variation characterizes German constructions with a complex prepositional group introduced by the preposition *bis* ('until', 'up to', 'as long as') followed by a nominal phrase [NP] itself introduced by another preposition [PREP2], as in

- (1) Der Weg *bis an* die Grenze ist gleich gefunden (DWDS corpus);
'The way *to* the border will soon be found'
- (2) Große Spieler sitzen spät *bis in* die Nacht (Cosmas II: I00/DEZ.75273);
'Great card players play *until* late *into* the night'
- (3) Ich werde dich lieben *bis in* den Tod (DWDS corpus);
'I will love you *into* death [= 'until I die']'
- (4) Die Wut steht ihm *bis über* den Kopf (DWDS corpus);
'He is in anger *up over* his head' [= 'He is overwhelmed with anger/rage']
- (5) Rot wurde sie *bis hinter* die Ohren (DWDS corpus);
'She went red *up past* her ears' [= 'She blushed furiously']
- (6) Unser Auto ist schon *bis unters* Dach voll mit Wein (Cosmas II: I00/DEZ.71933);
'Our car is already full with wine *up to under* the roof' [= 'Our car is already packed up to the top with wine']

As can be noticed from these few examples a variety of different prepositions that introduce the nominal phrase can be used after *bis*: *an* ('at'), *in* ('in'), *über* ('over'), *hinter* ('behind'), *unter* ('under'), and so forth. Variation also characterizes the constructions themselves in which the complex prepositional group appears; compare for instance examples (1) and (2). In (1) the prepositional group introduced by *bis an* depends on a noun (*Weg*); in (2) it depends on an adverb (*spät*). At the semantic level, too, the prepositional group can convey different meanings: *bis in die Nacht* in (2) expresses time, whereas *bis an die Grenze* in (1) illustrates a location/motion (for a detailed survey of the linguistic variation see De Knop 2010).

Interestingly, *bis* can be used in the same construction with different prepositions, e.g.

- (7) Deet ging zur Tür. Marc begleitete ihn *bis zum* Gartentor (Cosmas II: DIV/DSP.00001);
'Deet went to the door. Marc accompanied him *to* the garden gate'
- (8) Auch der Steuermann, der den gebrechlichen Alten noch *bis ans* Gartentor gebracht hatte, war fortgegangen (Cosmas II: DIV/URH.00001);
'The helmsman who had brought the fragile old man *as far as* the garden gate had also gone away'
- (9) Sie begleitete die Mädchen *bis an* die Tür und blieb dort, bis der Zug wieder abfuhr... (Cosmas II: RHZ03/FEB.03426);
'She accompanied the girls *up to* the door and stayed there until the train left...'

The question which arises here is whether the alternation is a purely arbitrary one or whether it corresponds to a conceptual and semantic distinction. A look at the English translations of examples (7) to (9) seems to suggest that the examples convey a different meaning. This assumption is sustained by the claim in Cognitive Linguistics (CL) that where there is alternation of constructions one has to postulate different constructions (Goldberg 1995, 2002; Gries & Stefanowitsch 2004; Langacker 1991). In CL terms this means that there is a difference at the conceptual level, and further at the semantic level of the constructions¹: "If two constructions are syntactically distinct, they must be semantically or pragmatically distinct" (Goldberg 1995: 67). Let us have a closer look at examples (7) to (9). The conceptual and semantic difference is conveyed by [PREP2], i.e., the selection of the second preposition reflects diversity in construal. All three examples express a motion event as defined by Talmy (2000: 21). A motion event consists of the following elements: a figure, which is the "thing" or person moving; the motion itself, which is often expressed by the

verb; and the ground, which consists of the path, the source and the goal. Additionally, the manner of motion can also be expressed. In the examples under discussion the path of motion is expressed by *bis*. The preposition *zu* ('to') highlights the endpoint or the goal of motion and thus expresses telicity². With *an* ('up to') it is the contact with the concept designated by the following noun – e.g. in examples (7) to (9) the gate or the door – which is focussed upon. The interpretation of this semantic difference seems to be a subtle one and is not necessarily perceived as such by all German speakers.

Starting from written examples from the German and Austrian press in the German corpora of the Digitales Wörterbuch der Deutschen Sprache (DWDS) and the Institut für Deutsche Sprache (IDS³) in Mannheim, this study will describe the semantic and conceptual differences between the alternating constructions as illustrated in (7) to (9) in more detail (see Section 2). A collostructional analysis (Stefanowitsch & Gries 2003; Gries 2003a, 2003b, 2003c; Stefanowitsch 2003) will allow us to show that the alternation is not a purely arbitrary or stylistic one, but that it reflects diversity at the conceptual level. Section 3 will explain how the conceptual variation and the meaning differences implied are supported by German morphosyntactic case-marking. Section 4 will further deal with sociolinguistic issues and ask whether the alternative constructions are indeed perceived as a conceptually and semantically motivated alternation by German speakers, or whether the perception of the alternation is dependent on the level of education of different speaker groups. How strongly is the conceptual and semantic difference entrenched in different groups? Do language-external factors like education have an influence on the selection of *an* or *zu*? In order to answer these questions empirical tests were conducted among different social groups. The results of these tests will be presented in Section 4.

2. Collostructional analysis of the variation

Before we can deal with the question of the perception of the alternation by different groups we have to describe in detail the differences between the two constructions as exemplified by (7) to (9). Following Stefanowitsch & Gries (2003) I will suggest conducting a 'collostructional analysis' of the examples, starting from particular constructions as found in the two German corpora and investigating "which lexemes are strongly attracted or repelled by a particular slot in the construction (i.e., occur more frequently or less frequently than expected)" (Stefanowitsch & Gries 2003: 214).

2.1 The noun after [*bis* + PREP2]

The first slot that will be analyzed is the one occupied by the noun used after [*bis* + PREP2], since the selection of [PREP2] seems to depend on the semantics of the following noun. In order to specify the type of noun used after the one or the other preposition, all occurrences of nominal phrases introduced by *bis zu* and *bis an* were extracted from the IDS corpus and compared. A first important observation could be made: there are many more examples of constructions with *zu* (840,529) than with *an* (10,598). It seems more important, though, to look at the distribution of both prepositions, i.e. at the semantics of the nominal ‘collocates’ (Gries & Stefanowitsch 2004: 100) these prepositions are used with.

2.1.1 *Bis zu*

The majority of examples containing a *bis zu* construction, i.e. 85.7% out of 840,529 occurrences, express time, e.g.

- (10) *Bis zu diesem Tag* der Entscheidung müssten sich beide Parteien noch bewegen... (Cosmas II: N00/JAN.00311);
‘Up to the day of the decision both parties would still need to change their positions...’
- (11) *Bis zum Sommer* soll der Spielplatz auf der Schulanlage [...] realisiert werden (Cosmas II: A00/JAN.00288);
‘The playground on the school grounds should be ready by the beginning of summer’

A particular expression of time is the expression of a specific step or an event in one’s life (death, retirement, school enrolment, graduation, etc.); these examples constitute 7.4% of all occurrences with *bis zu*:

- (12) Die Jahre *bis zu seinem Tod* am 8. Januar 1642 verbrachte er unter Hausarrest (Cosmas II: N00/JAN.00493);
‘He spent the years up to his death on January 8, 1642 under house arrest’

- (13) *Bis zu seiner Pensionierung* 1977 war er an „seiner“ Schule tätig (Cosmas II: V00/FEB.10028);
‘Up to his retirement in 1977 he was employed at “his” school’
- (14) Ab sofort können in einem Alter von drei Jahren *bis zum Schuleintritt* Interessierte in die „Minis“ aufgenommen werden (Cosmas II: RHZ01/JAN.07916);
‘Starting immediately, interested children from three to school age are welcome in the “Minis”’

In these temporal uses *bis zu* expresses the meaning of ‘up to’. It frequently occurs with ‘von ... bis zu...’ (‘from ... up to...’) and then expresses a gradation:

- (15) Der Sonntag wird *vom Morgen bis zum frühen Abend* ganz im Zeichen der Blasmusik stehen (Cosmas II: RHZ97/MAI.03166);
‘From morning until early evening, Sundays will be devoted to brass band music’

Bis zu is also used to express a quantifiable value or measure (1.2% of all occurrences), in which cases it is often followed by a numeral preceding the noun, i.e.

- a period of time (number of years, months, days, ...):
- (16) Die Ermittlungen werden *bis zu drei Monate* in Anspruch nehmen (Cosmas II: N00/JAN.00022);
‘The investigations will take up to three months’
- (17) *Bis zu zwei Stunden* trainiert die Weltelite täglich;
‘The world elite train for up to two hours every day’ (Cosmas II: R98/JUN.44064)
- a temperature:
- (18) Der Texaner überlebte *bis zu 30 Grad* Kälte (Cosmas II: E00/JAN.00287);
‘The Texan survived temperatures up to 30 degrees below zero [= ‘as low as 30 degrees below zero’]’

- an amount:
- (19) Berechnungen ergaben, dass *bis zu 270 Millionen* Bäume durch die orkanartigen Stürme am 26. und 27. Dezember umgeknickt wurden (Cosmas II: N00/JAN.00348);
 ‘It was estimated that *up to 270 million* trees snapped because of hurricane-force winds on December 26 and 27’
- a measure (centimeter, meter, miles, kilogram,...):
- (20) Den Hund mussten wir über eine *bis zu fünf Meter* hohe Felswand abseilen (Cosmas II: N00/JAN.00444);
 ‘We had to let the dog down on a rope along a rock face *up to five meters* high’
- (21) Viele Arzneien würden dort *bis zu 60 Prozent* billiger angeboten (Cosmas II: NUN00/DEZ.01254);
 ‘Many drugs were sold there *up to 60 percent* cheaper’

In 2.7% of the occurrences *bis zu* was used for the expression of a concrete location with nouns such as *Straße* ‘street’, *Grenze* ‘border’, *Sohle* ‘bottom’, *Decke* ‘ceiling’, *Talstation* ‘valley station’, *Brücke* ‘bridge’, *See* ‘lake’, ... :

- (22) In der Stadt kann geparkt werden: an der Wellmicher Straße (B 42) vom Bahnhof *bis zum Ortsausgang* Richtung Koblenz... (Cosmas II: RHZ96/SEP.10338);
 ‘Parking is available in town: at Wellmicher Straße (B42) from the station *up to the town exit* in the direction of Koblenz...’
- (23) Wir sind ja schon *bis zum Bodensee* gefahren (Cosmas II: RHZ00/JUN.11480);
 ‘We have already gone *as far as* Lake Constance’
- (24) Der Vater und seine Tochter sind da schon zu Fuß *bis zur Talstation* hinuntergegangen (Cosmas II: N00/NOV.52556);
 ‘The father and his daughter have already gone down on foot *as far as* the valley station’

In few examples the noun after *bis zu* refers to a body part (0.5%):

- (25) Einmal stand ich *bis zum Bauch* im Wasser (Cosmas II: RHZ00/JAN.10413);
'Once I was standing in water *up to my stomach*'
- (26) Er trägt eine blaue Schürze, die *bis zu den Knöcheln* reicht (Cosmas II: R98/JUL.57444);
'He is wearing a blue apron which extends *down to his ankles*'

The relevant body parts are prominent and are viewed as a sort of limit or border by the speaker. Nouns for body parts are sometimes used metaphorically, e.g.

- (27) Dem Verlierer steht das Wasser *bis zum Hals* (Cosmas II: 000/APR. 38964);
'The loser is in water *up to his neck*' [= 'The loser is in big trouble']

This metaphorical extension is used to express a degree or a measure; in these cases the nominal group introduced by [*bis* + PREP2] is an answer to a question of the kind "how much/how strongly/how intensively" (see also De Knop 2010).

The preposition *zu* is also used with nouns that express a more abstract meaning (2.3%), e.g. *Vollendung* ('completion'), *Realisierung* ('realisation'), *Fertigstellung* ('finalization'), *Eröffnung* ('inauguration'), ...

- (28) Wir kämpfen *bis zum Sieg!* (Cosmas II: K00/OKT.78443);
'We will fight *till victory* [= 'till we win']'
- (29) ... trinken diese Gäste oft *bis zum Exzess* Alkohol (Cosmas II: RHZ05/JUL.25288);
'...these guests often drink alcohol *to excess*'
- (30) Die Klischees werden *bis zum Überdruß* wiederholt (Cosmas II: O00/APR.45800);
'The clichés are repeated *until weariness sets in*'
- (31) Das geplante Infozentrum kann *bis zur endgültigen Fertigstellung* provisorisch in Zelt oder Container [...] untergebracht werden (Cosmas II: RHZ05/JUN.01712);
'*Up to its final completion* the planned info center can be provisionally installed in a tent or a container'

- (32) Besonders eine höchstens Fünfjährige hüpfte *bis zur völligen Erschöpfung* euphorisch vor der Bühne herum (Cosmas II: RHZ02/SEP.01129);
 ‘Especially one five-year-old hopped euphorically around in front of the stage *to the point of complete exhaustion*’
- (33) Dort wurde sie *bis zur Bewusstlosigkeit* geschlagen (Cosmas II: O00/MAR.26979);
 ‘There she was beaten *to unconsciousness*’

2.1.2 *Bis an*

Bis an is used in similar contexts and with similar collocates as *bis zu*, but the distribution between the categories is different. The majority of occurrences (86.8%) with *bis an* collocates with concrete nouns for the expression of a location, e.g. with nouns like *Haustür* ‘front door’, *Schwelle* ‘threshold’, *Strand* ‘beach’, *Autobahn* ‘motorway’, *Meer* ‘sea’, *Küste* ‘coast’, ...:

- (34) Am häufigsten bringt das Wetter in der Winterzeit bei uns gegen Ende November erstmals Schnee *bis an den See* hinunter (Cosmas II: A00/MAR.16690);
 ‘Most often it is in late November that the winter weather in our area brings us snow *as far down as the lake*’
- (35) Zum Atlantik hin ist die Bucht mit einem knapp 300 Meter langen Netz *bis an den Meeresgrund* gesichert (Cosmas II: V00/MAR.11540);
 ‘Facing the Atlantic the cove is secured with a 300-meter-long net reaching *to the ocean floor*’
- (36) Er durchwanderte den Tunnel *bis an die Tür* (Cosmas II: DIV/PWM.000000);
 ‘He went through the tunnel *up to the door*’
- (37) Ein Schimmer von Natur geriet [...] *bis an die Fenster* der Schulen (Cosmas II: N92/SEP.33963);
 ‘A shimmer of nature came *up to the windows* of the school-houses’
- (38) Die Heckklappe ist derart riesig, dass sie *bis an die Decke* reicht (Cosmas II: N92/DEZ.45371);
 ‘The tailgate is so huge that it goes right *up to the ceiling*’

The noun *Grenze* is often found after *bis an*, but also in a variety of compounds: *Landesgrenze/ Waldgrenze/ Obergrenze/ Baumgrenze/ Leistungsgrenze/...*; the compounding process renders the meaning of the noun *Grenze* more concrete and more specific.

No examples of time expressions could be found with *bis an* in the corpora from the DWDS or from the IDS. However, in the same proportion as *bis zu* the prepositional group with *bis an* was used to express life stages (7.4%):

- (39) Wenn man nicht Dilettant sein will, sondern Künstler *bis an sein Lebensende*, dann muss man auch unternehmerisch denken (Cosmas II: N91/NOV.19929);
'If one does not want to be a dilettante/amateur, but an artist *until one's dying day*, then one must think in entrepreneurial terms'

Bis an is favoured with nouns for body parts (5.5%):

- (40) *Bis an die Zähne* bewaffnete Soldaten suchen nach Waffen für die GAM, die Guerillaorganisation (Cosmas II: E00/FEB.03564);
'Soldiers armed *to the teeth* are looking for weapons for the GAM, the Guerilla organisation'
- (41) Die Nacht zum Montag verbringt er mit Mantel, Schal und Mütze und *bis an die Ohren* zugedeckt im Bett (Cosmas II: RHZ96/DEZ.17711);
'He spends Sunday night in bed with a coat, a scarf, a cap and the blankets drawn *up to his ears*'
- (42) Ich will nicht, dass die Leute *bis an die Knöchel* im Wasser stehen (Cosmas II: M07/AUG.02947);
'I don't want people to be standing in the water *up to their ankles*'
- (43) Die schwarzen Stiefel reichen *bis an die Knie* (Cosmas II: RHZ03/JUL.07530);
'The black boots go *up to the knees*'
- (44) Sein Bein sieht schlimm aus – verbrannt vom Fuß *bis an die Hüfte* (Cosmas II: RHZ01/MAR.19453);
'His leg looks bad – burnt from the foot *up to the hip*'

Expressions of quantification with *bis an* were hardly present in the corpora (0.2%), and only five examples of *bis an* with abstract nouns could be found, out of a total of 10,598 occurrences.

2.1.3 *Bis an* vs. *bis zu*

The following table summarizes the uses of the collocate noun after [*bis* + PREP2]:

Table 1: Noun occurrences after [*bis* + PREP2] in the IDS corpus

Date: 30.11.2009	<i>bis zu</i>		<i>bis an</i>	
Total number of occurrences	840 529		10 598	
Expression of quantification	10 596	1.2 %	21	0.2 %
Expression of time	720 430	85.7 %	-	-
Life stage/period of time	62 213	7.4 %	785	7.4 %
Abstract noun	19 866	2.3 %	5	0.05 %
Location expression	22 662	2.7 %	9 197	86.8 %
Body part noun	4 762	0.5 %	590	5.5 %

If we compare both lists of examples with *bis an* on the one hand and *bis zu* on the other, as well as their frequencies, we can make the following summarizing observations:

1. *Bis zu* as such is used more frequently than *bis an* in the same corpus.
2. *Bis zu* is mainly used for the expression of time, whereas *bis an* is the prepositional combination for the expression of concrete location.
3. *Bis zu* appears with abstract nouns, while *bis an* is almost completely restricted to concrete nouns.
4. For body parts it is almost always *bis an* which is favoured.

2.2 Other collocates

Often the lexical frame and the collostructional analysis for the interpretation of the meaning conveyed by *bis an* or *bis zu* cannot be restricted to the noun accompanying the prepositional group. It is only when considering the collocates in a larger context that the more specific conceptual and meaning differences become clear, as illustrated by the following example:

- (45) Die...Detektivin...verfolgte beide *bis zu* einem Hause in der Neanderstraße. – Sie benachrichtigte *nun* die Polizei,... (DWDS corpus);
'The...detective...followed them both up to a house in Neanderstraße. – Then she informed the police,...'

As previously observed in Section 1 the prepositional group introduced by *bis zu* or *bis an* is often used in sentences which express a motion event (in Talmy's sense). With *bis zu* it is the goal attainment which is focussed upon. This meaning is being sustained by the collocate *nun* ('then/now') in the second sentence of example (45). The same pertains to the following example in which *vollendet* expresses the completion:

- (46) Mit der Bahn reisen Kinder bis zum *vollendeten* 6. Lebensjahr in der Schweiz und in Österreich gratis (Cosmas II: E99/APR.10628);
'Until the *completion* of their sixth year, children travel free by train in Switzerland and Austria' [= 'Children under seven...']

An important role in the interpretation of the sentence meaning is often played by the predicate: *reichen* 'to reach', *sich erstrecken* 'to extend', *heranreichen* 'to reach', *ausdehnen* 'to stretch' are typically found in such constructions:

- (47) ...viele Radler am Wied-Radwandertag die besondere Gelegenheit nutzen und ihren Ausflug bis an den Endpunkt *ausdehnen* (Cosmas II: RHZ98/APR.35808);
'...many cyclists on the Wied cycling day take advantage of the special opportunity and *extend* their outing to the endpoint'
- (48) Man wandert mit der Autorin über die Wiesen und Wege, die bis an die Mosel *reichen* (Cosmas II: RHZ02/JAN.20751);
'We wander with the author over the meadows and paths *stretching* down to the Mosel'

It is the preposition *bis* which underpins the assumed expression of the whole path/trajectory. Most verbs which express a stretching appear with [PREP2] *an* for the expression of a contact. With the preposition *zu* one rather focusses on a goal attainment and less on the whole path. So, this explains why a sentence like **Er schleicht sich bis zum Opfer* ('He creeps up to his victim'), in which *schleichen* presupposes a motion along a path, would not be perceived as a very good sentence in German. A further detailed analysis of all the possible collocations would go beyond the scope of this chapter.

3. Morpho-syntactic analysis of the variation

The conceptual variation described in Section 2 and the meaning differences implied are supported by the German morpho-syntactic case-marking system. In example (7) *Er begleitete ihn bis zum Gartentor*, it is the dative case which is used after the preposition *zu*, whereas in (8) *Er begleitete ihn bis an das Gartentor*, the accusative case appears after the preposition *an*. Following Kristiansen (2010), who claims that "grammatical variation serves to create different construals of reality and different perspectives" (2010: 55), I will show in the following section that this grammatical difference is not arbitrary but motivated by the underlying conceptualization.

In German the selection of the dative or the accusative case is motivated by the underlying conceptualization and the meaning a speaker wants to convey: the German preposition *zu* is used with the dative case usually selected for the expression of static events/a (fixed) location/an endpoint, e.g. *Er sitzt zu Hause* ('He is sitting/is at home') (see De Knop forthcoming; De Knop & Dirven 2008; Di Meola 1998; Draye 1996; Leys 1989, 1995; Serra-Borneto 1997); the German preposition *an* (a so-called "two-way preposition", Smith 1995) can be used alternatively either with the dative (for the expression of a static event/a location), e.g. *Er wohnt am Meer* ('He is living at the seaside'), or with the accusative (for the expression of a dynamic event, implying a stretch/path/trajectory and a motion along this path towards an endpoint), e.g. *Er fährt ans Meer* ('He is driving to the seaside'). After a two-way preposition appearing in the construction with *bis* it is generally the accusative which is used for the expression of dynamicity, e.g. example (8)⁴. The preposition *bis* stresses the dynamic expression of a path or trajectory. The meaning difference between example (7) *Er begleitete ihn bis zum Gartentor* and (8) *Er begleitete ihn bis an das Gartentor* depends on the choice of a specific preposition (*an* or *zu*) but also on the case selection. With *zu* it is more the goal attainment – reflected in the dative case – which is focussed upon, with *an* and the selection of the accusative it is the dynamic expression of a trajectory in the direction of a goal which is stressed. But

this difference seems to be a subtle one which is not always perceived as such by non-linguists.

Case selection is an arduous issue for foreign learners of German who frequently select the wrong case (i.e. the dative) in such examples. A quick test among French-speaking learners of German attested of such difficulties. The 15 participants were intermediate university students (level B2-C1 on the proficiency scale of the Common European Framework of Reference) who majored in German language and literature and were in their second year of their bachelor degree. They were given about 18 German sentences with expressions of motion events and were asked to fill in the article in the correct case. The sentences with a prepositional group introduced by *bis* were problematic, e.g.

- (a) Er hat die Fahrt *bis in d... kleinste(n) Detail* geplant,
'He has planned the journey *up to the smallest detail*', or
- (b) Er ist verliebt *bis über d... Ohren*,
'He is *up to the ears* in love' [= 'He is head over heels in love']

For sentence (a) only 26.66% of the participants selected the correct case, i.e. the accusative, for sentence (b) 40%. So, for most French speakers such constructions are not perceived as expressing any dynamic motion. Some further research will be needed to determine a teaching strategy for such difficult examples (see also De Knop forthcoming). But let us now turn to the sociolinguistic issue which we want to discuss in this paper.

4. Degree of entrenchment of the variation among different speaker groups

In their presentation on syntactic variation in Spanish Serrano and Aijon Oliva (2010: 50) opt for an approach on linguistic variation which "involves taking into account the mental perceptions underlying linguistic form and analyzing variants as resources used to construct and communicate particular conceptions of reality in interaction." In this paper, too, it is postulated that the linguistic variation presented in (7) and (8) corresponds to a conceptual variation and that different meanings are being conveyed, which leads to the following questions: Are regular German speakers aware of the difference? Is this variation perhaps only perceived by a group of experts, or does it correspond to folk perception as well (compare also Cuonz's paper on folk conceptualizations, this volume)? A first intuition allows us to assume that the perception of a meaning difference be-

tween (7) and (8) is dependent on the educational level of the speakers, and that the difference is hardly perceived by non-highly educated native speakers of German. Starting from examples taken from the two German written corpora (DWDS and IDS), an empirical study was conducted among different speaker groups to test how strongly the differences between *bis an-* and *bis zu-*schemas are entrenched and if (and to what degree) this perception of a difference is dependent on the educational level of the speakers. Our hypothesis was that the participants' educational level correlates positively with their metalinguistic awareness. Consequently, we expected that a higher educational level leads to a greater likelihood for the meaning differences to be perceived. The results for highly educated German adults were compared with those for non-highly educated German adults, but also with a group of pupils (aged 15-17) and a group of young adults (aged 18-23 and with a high school diploma).

But before we report on the results we have to remark that a delimitation of the different groups according to their educational level is not a standardized or easy-to-cut differentiation and that the decision had to be taken arbitrarily. The delimitation criteria selected for this study are based on the German still tripartite education system⁵, which distinguishes between "Hauptschul-Abschluss" (corresponding to a lower secondary school diploma in Britain), "Realschul-Abschluss" (middle school diploma) and "Abitur" (A-levels). For most German universities the Abitur still constitutes the entrance qualification; it can be obtained at "Gymnasium" (grammar school).

4.1 Empirical research

4.1.1 Test groups

In order to test the degree of entrenchment among different groups as well as the perception of meaning differences dependent on the educational level, two tests were conducted among four groups. The groups were differentiated according to the education parameter. One group consisted of less educated adults who had a "Hauptschul-Abschluss" or a "Realschul-Abschluss"; a second group of higher educated adults who had their "Abitur" and a university degree; a third group comprised young adults (between 18 and 23) who had achieved their "Abitur"; and in the last group were teenagers between 15 and 17 who were attending a Hauptschule. Each group consisted of 12 participants.

4.1.2 Test design

The test comprised 32 sentences from the two corpora, organized in 16 pairs, i.e., a sentence was presented with the preposition *an* or *zu* as found in the corpus; the same sentence was replicated but the preposition was switched, e.g.

(49a) Die Nachricht war *bis an seinen Arbeitsplatz* gedrungen (Cosmas II: E00/FEB.04878);

‘The news had got *to his workplace*’ [= ‘The news had reached his workplace’]

(49b) Die Nachricht war bis zu seinem Arbeitsplatz gedrungen.

Sentence (49a) was the original corpus sentence, (49b) was the duplicate with the other preposition. The test groups did not get any information about which preposition was originally used in the corpus. The test consisted of two tasks, i.e., an acceptability judgment task and a decision-making task. In the acceptability judgment task the test persons had the choice between 4 different possibilities: ‘fully acceptable’, ‘acceptable but unusual’, ‘fully unacceptable’, and ‘not sure if it is acceptable’. With the decision-making task the test persons were asked to decide whether there was a meaning difference between the (a)- and (b)-sentences; they were not asked to explain the difference because we assumed that it would have been too hard for non-experts to express it (this is something we can expect from linguists⁶).

4.2 Results and discussion

4.2.1 Meaning difference

For the 16 pairs of examples the 12 participants in each group were asked if they perceived a meaning difference between the sentence with the preposition *an* and the same sentence with the preposition *zu*. If all twelve persons had answered affirmatively for the 16 pairs, an ideal total result of 192 yes-answers could have been achieved per group. The following table summarizes the results obtained by each of the test groups:

Table 2: Perception of a meaning difference among the different test groups

	16 pairs of examples x 12 participants/group = 192
Less educated adults	46 = 24 %
More highly educated adults	57 = 30 %
Young + Abitur	37 = 19 %
Teens + Hauptschule	56 = 29 %

The statistical significance of the differences in frequency was established by using chi-square ($X^2=7.29$, $df=3$ and $p<.05$). As a general observation it can be said that there is a rather weak perception of a meaning difference between the different examples as attested by the low results of the tests. As expected, the highest score regarding a perceived meaning difference is reached by more highly educated people. What is more amazing is the fact that teenagers who are in a “Hauptschule” attain almost the same score as more highly educated people. The lowest score is obtained by young people who have their Abitur; only in 37 cases out of the 192 did they see a meaning difference.

How can these results be explained? As expected, more highly educated adults have a better metalinguistic competence which allows them to reflect more about language. But what about teenagers? It might have something to do with the age of the participants and their training in reflection about language which is practised at that age in their school type. This means that we would have to add another criterion for the analysis, which is the age of the participants.

Another aspect comes to light when we compare the results of the two other groups. Less educated adults obtained better results than young people with “Abitur”, which seems to imply that it is not the school form/type itself (i.e. Gymnasium vs. Hauptschule) which is decisive for the metalinguistic competences necessary for the meaning differentiation, but rather whether such competences have been acquired in a particular school form⁷.

The decision-making task gives a more differentiated picture of the perception of a meaning difference and corrects the assumptions we had stated before starting with the test.

4.2.2 Acceptability

The acceptability judgment task produced interesting, even amazing results. In the summary of the different uses of *bis an* and *bis zu* in the corpus (Section 2.1.3) it was first observed that *bis zu* has a much higher frequency (840,529 occurrences) than *bis an* (only 10,598 occurrences). Application of a repeated measures ANOVA statistic indicates that the use of *zu* after *bis* is indeed globally perceived as being more acceptable than the use of *an* by the four test groups. The global difference between the use of *an* and *zu* was significant ($D(1.44)=5.412$, $p<.05$).

With our analysis of the examples from the corpus (Section 2.1.3) it became clear that the two prepositions *an* and *zu* are mainly used with different categories of collocates: *an* is favoured in prepositional groups which express concrete location, whereas *zu* is more often selected with more abstract nouns. The results of the acceptability judgment task show another picture. Table 3 summarizes the results of the repeated measures ANOVA statistics, i.e. the uses of the three types of collocates ‘concrete location expression’, ‘body part expression’ and ‘abstract expression’ and their correlation with the results by the different groups (called ‘status’ in the table).

Table 3: Results of the acceptability judgment task

	Acceptability <i>an</i> vs. <i>zu</i>	Difference <i>an</i> vs. <i>zu</i>	Interaction with status
Concrete location expression	<i>zu</i> more acceptable	Very significant: $D(1.44)=11.103$ $p<.005$	No interaction: $D(3.44)=.366$ $p=.778$
Body part expression	<i>zu</i> more acceptable	Significant: $D(1.44)=6.444$ $p<.05$	No significant interaction: $D(3.44)=1.344$ $p=.272$
Abstract expression	<i>an</i> slightly more acceptable	Not significant: $D(1.44)=2.509$ $p=.120$	Significant interaction: $D(3.44)=4.331$ $p<.05$

Let us now comment on the results in detail. The results of the acceptability judgment task do not corroborate the results of the uses in the corpora. It is surprising to see that our test groups consider the preposition *zu* as being more acceptable for expressions of concrete location and body part expressions. This stands in total contradiction to the corpora results according to which *an* is favoured in such uses. For concrete location expressions the difference in use be-

tween *an* and *zu* is even very significant ($p < .005$), for body part expressions also significant, but to a lesser degree ($p < .05$). With abstract nouns *an* is perceived as being more acceptable by our test groups – again a complete lack of agreement with the corpora results. The difference in use between *an* and *zu* is not significant ($p = .120$).

How can the lack of agreement between the results by the test groups and the analysis of the examples in the corpora be explained? As we saw before (see Section 2.1.3) *zu* appears in a significantly larger number of items than *an*. Perhaps this leads to an overuse of *zu* in all sorts of contexts – also in contexts where the other preposition would be preferred. What is more problematic is the use of *an* with abstract nouns. Thus, the difference between the categories “abstract” and “concrete” seems to be neutralized by the test persons when asked if both prepositions are possible in the same context. This shows that there is a gap between what speakers accept as being correct or not and the actual production of sentences with [*bis* + PREP2] – as can be deduced from the two tests and the sentences found in the corpora.

Let us now turn to the question of the influence of the education level on the perception of a difference in the alternated uses of both prepositions. We assumed at the beginning of our research that there must be a significant interaction between the education level and the perception of a difference in the uses of *an* and *zu*. As we can see in the Table the results of the ANOVA test provide statistical evidence for our hypothesis only in expressions with abstract nouns ($p < .05$). But even here we have to relativize the statistical findings. Less educated people and teenagers have a preference for *zu*, whereas young adults and higher educated people privilege *an*. The results of the higher educated group completely contradicted our expectation as they achieved a mean score of 4.67 for *zu*, but 7.75 for *an*. This major difference between the two figures somewhat attenuates the significance of the statistical results. So, as a general comment, let us say that the results do not provide enough evidence for the correlation between the education level and the perception of a difference between the two prepositions. The hypothesis formulated at the beginning of this chapter has not been confirmed by the empirical research.

5. Conclusion

Up to now most studies in sociolinguistics have dealt with phonetic or syntactic variation (see Fasold 1990; Hudson 1996; Labov 1972, 2010; Meyerhoff 2006), but very little has been done in the domain of semantic variation (except for e.g. Gries 2003c or Stefanowitsch 2003). This study of sentences with a prepositional group introduced by [*bis* + PREP2] aimed at making up for this lack. It has

shown how fundamental corpus study is in sociolinguistics – as advocated among others by Geeraerts (2005: 167) – and how strong the lexical bias of construction alternatives is. It has also become clear that linguists have to be more careful in their expectations about more highly educated people and their expertise about the perception of language. The correlation between education level and metalinguistic competence has to be revised.

But even if for native speakers the issues developed in this study are not as decisive as expected, the results of the study about the collocates, the correspondence between morpho-syntactic case-marking and conceptual variation, and the meaning difference are relevant for foreign language teaching and acquisition; they can help develop a better teaching methodology.

Notes

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¹ According to Langacker Cognitive Grammar equates meaning with conceptualization (Langacker 1995: 5) which means that all linguistic meaning is conceptual in nature and that linguistic entities reflect underlying concepts.

² This is particularly obvious in examples with *Haus* ('home'): *Er ist schon zu Hause* ('He is already at home'). The corresponding preposition for the expression of a path in combination with *Haus* is *nach*: *Er fährt nach Hause* ('He drives back home').

³ The tool used by the IDS is called 'Cosmas', for Corpus Search Management and Analysis System. Under the examples quoted we will therefore use the abbreviation of Cosmas.

⁴ There is an exception to this rule: when the preposition *vor* is used in its temporal meaning then it is the dative case which is selected. It then expresses a time point in retrospect:

(50) *Es bestand bis vor zehn Jahren kein Zweifel, dass...*
'There existed until about 10 years ago no doubt that...'
(DWDS Corpus)

⁵ This tripartite classification is changing in the German school system, some Bundesländer also have other school types like "Gesamtschule" (comprehensive school). But it remains a reference frame in the organization of German society.

⁶ Some test persons spontaneously expressed the meaning difference – although they had not been asked.

⁷ Of course one might expect individual differences in aptitude – as one of the reviewers suggested – but this kind of test would have gone beyond the scope of this research.

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Corpora

COSMAS I/II (*Corpus Search, Management and Analysis System*),
<http://www.ids-mannheim.de/cosmas2/>, © 1991-2008 Institut für Deutsche Sprache, Mannheim.

DWDS (*Das Digitale Wörterbuch der Deutschen Sprache des 20. Jahrhunderts*),
<http://www.dwds.de/>, © 2001 Berlin-Brandenburgische Akademie der Wissenschaften.