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**Testing current theories of Auxiliary selection in German verbs of
motion on a 19th century corpus**

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April 2023

A thesis submitted in partial fulfillment of the requirements for
the degree of Bachelor of Arts in Linguistics and Languages

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Abstract

German verbs of motion can use either the perfect auxiliary *sein* 'to be' or the perfect auxiliary *haben* 'to have'. It has been posited that the auxiliary selection in these types of verbs is linked to the presence of a [locomotion] feature, *sein* 'to be' occurring with [+locomotion] and *haben* 'to have' occurring with [- locomotion]. Lewandowski (2018) uses empirical data from contemporary German to argue that there is further distinction than previously thought, namely that within the manner-of-motion verb category, non-directional motion verbs and directional motion verbs diverge in auxiliary selection when the [-locomotion] feature is present. I am testing Lewandowski's (2018) explanation of auxiliary selection on a corpus of German folklore and fairytales from 1800-1850, to see if his arguments hold up when applied to an older form of New High German (Modern German). I found that overall, Lewandowski's explanation applies, but there are some areas where my data differed.

1. Introduction

German auxiliary selection has been a topic of interest to me since I first learned how to form sentences with the *haben/sein* auxiliary and past participle structure. English does retain the general structure but with only one auxiliary (Ackema and Sorace 2017). German selects between two, depending on the verb. I remember being told in my first German class that we should just try to

memorize which verbs use the auxiliary *sein* 'to be' and which use *haben* 'to have' because there wasn't a simple rule that covered all the verbs. As I was at the beginning of my linguistics major when I started German, I really wanted to learn what was going on under the surface level of the language. Auxiliary selection was at the top of my list of things to research about German, and was the subject of my squib for Semantics class and now the subject of my thesis.

In my second or third wave of research on German Auxiliary Selection I encountered a paper by Wojciech Lewandowski, on auxiliary selection with German manner-of-motion verbs, which are capable of using both of the perfect auxiliaries *haben* 'to have' and *sein* 'to be' (Lewandowski 2018). He proposed a semantic approach, this type of approach appealed to me as I had previously written about auxiliary selection for a semantics class. His paper uses empirical data, gathered through an acceptability judgment task given to a group of native German speakers, to support a proposal from (Randall 2007) that manner-of-motion verbs use the auxiliary verb *sein* 'to be' when there is a path phrase present (e.g., *run into the house*, *dance around the maypole*). Lewandowski (2018) also uses this data to distinguish between non-directional manner-of-motion verbs and directional manner-of-motion verbs, which diverge when there is no overtly expressed path phrase (e.g., *dance on the counter*, *run with someone*). He argues that in contexts where path is not expressed overtly, non-directional motion verbs (e.g., *tanzen* 'to dance' and *schweben* 'to float') tend to select the auxiliary *haben* 'to have', while directional motion verbs (e.g., *laufen* 'to run' and *fliegen* 'to fly') tend to use the auxiliary *sein* 'to be' (Lewandowski 2018). He suggests that the presence or absence of a path phrase is closely linked to auxiliary selection indicates that the feature [+ locomotion] proposed by Randall (2005) is not tied to the verb semantics but instead to the constructions that combine with the verb.

In this paper I will be testing the proposed explanation of auxiliary selection in German manner-of-motion verbs being linked to the [+ locomotion] feature of their verbal constructions on a written corpus (instead of an acceptability judgment test of native speakers). I have chosen to test a corpus of written German folklore and fairytales from the first half of the 19th century (1802-1850 specifically). The data that I gathered from this corpus generally aligns with Lewandowski's (2018) proposed explanation. The notable exception is the non-directional motion verbs in [+locomotion] constructions, which, while still preferring *sein* 'to be' overall, are much more inclined to pick *haben* 'to have' in my corpus than they are in Lewandowski's (2018) data.

2. Background

This paper focuses on what determines the selection of the auxiliary verb in the Perfekt. There are two auxiliaries that can be selected for, *haben* 'to have' and *sein* 'to be'. Generally speaking, the auxiliary selected for a verb in the Perfekt (Perfect/Present Perfect) would also be the auxiliary selected for the same verb in Plusquamperfekt (Pluperfect/Past Perfect) and in Futur II (Future Perfect). The auxiliary has a different conjugated form for each of these tenses and also has a distinct form in different moods (i.e. indicative and subjunctive), and in the case of the Futur II there is also an additional auxiliary to indicate future time. Since the auxiliaries *haben* 'to have' and *sein* 'to be' appear as markers of the perfect aspect in these three tenses, verbs from all three tenses would be included in my data should they appear in my corpus. That being said, no relevant instances of Futur II appeared

in my corpus. The lack of data for that tense renders it outside the scope of this paper, so I will not be explaining Futur II when I explain the Perfekt and the Plusquamperfekt later in this section.

The perfect tenses of German are formed through periphrasis (the use of an additional function word instead of an affix to convey meaning). According to Harbert these periphrastic perfect constructions are a later development in German and other Germanic languages, “in early GMC [Germanic] translations, perfect and pluperfect in other IE [Indo-European] languages are treated as the translational equivalent of GMC simple past tense” (Harbert 2006, 301). He goes on to explain that all modern Germanic languages and all but one of the medieval Germanic languages have periphrastic perfect constructions but that it is not clear whether it first developed in a common ancestor language that then passed it down or if it was a parallel development. The typical structure of the perfect tenses involves the combination of an auxiliary verb in either its present, past or future tense form and a past participle.

2.1. Formation of the Perfekt (present perfect)

Fischer explains that the temporal-aspectual meaning of the Perfekt (present perfect) expanded from nearly always present retrospective in Old High German to gradually include a past perfective and past imperfective by the time New High German developed. (Fischer 2020, 103–4). The German Perfekt is often formed by creating a *Klammerstruktur* (‘bracket-structure’, or syntactic parenthesis structure), wherein the auxiliary verb and the participle form a pair of verbal parentheses around the object and adverbial structures (should they exist in the sentence at all). Fischer refers to this space between auxiliary and participle as a “syntactic middle field” (Fischer, 2020). The auxiliary verb is

conjugated based on the person and number of the subject and in the pattern of the Präsens (present) tense. For the most part the auxiliary occupies the typical ‘second position’ placement for main verbs of a German sentence, *second* referring to the verb being the second item in the sentence with the subject being the first. While the auxiliary is in the main verb position, the participle, which is in a sentence final position, gives the meaning of what the action is. An example of this structure with the auxiliary bolded and the participle underlined is provided in sentence (1) below. The subject appears first followed by the auxiliary *hat* (3rd person sg present form of *haben*) in the second position. After the auxiliary the direct object *ein Lied* appears and is modified by a preceding adjectival phrase. The Klammerstruktur in this sentence is initiated with *hat* and concluded with the Past Participle *gehört*. The Past Participle is primarily used to indicate the perfect aspect, and is typically formed by taking the infinitive form of a verb and adding the prefix *ge-*, there are exceptions to this. One of which is the verb *hören* in (1), the infinitive form is *hören* but the past participle is not *gehören* but rather *gehört*. This is due to different types of verbs but any further discussion of different past participle forms is outside the scope of this paper.

1) Source: Brüder Grimm 2010, pt. 12

Der König-s-ohn **hat** ein sehr schönes Lied ge-hört.
 DET.Nom King-Gen-son **have-3Sg.Pres** INDEF.Acc very pretty.Acc song Partic-hear
 ‘The prince **has heard** a very lovely song’ (also ‘The prince heard a very lovely song’)¹

¹ Abbreviations used in Glosses

1Sg: 1st person singular

3Sg: 3rd person singular

Acc: Accusative case

DET: determiner

Gen: Genitive case

INDEF: indefinite article

Nom: Nominative case

Partic: Past Participle affix

Prät: Präteritum (Preterite or Simple Past)

Pres: Present tense

The Perfekt uses two different verbs as auxiliaries, *haben* ‘to have’ and *sein* ‘to be’. Sentence (1) provided an example of the verb *haben* in use as an auxiliary verb. A sentence using *haben* ‘to have’ occurs more often in texts as more verbs use it as an auxiliary with their participle forms than they use *sein* ‘to be’. The following sentence (2) provides an example of *sein* in use with a verb that always uses *sein*, because the verb *ankommen* ‘to arrive’ indicates a change-of-location (Lewandowski 2018, 159).

2) Source: Lewandowski 2018, p. 159

Der Zug **ist** spät an-ge-kommen.
 DET.Nom train **be.3Sg.Pres** late on-Partic-come
 ‘The train arrived late’

Sentence 3 (created myself, a non-native speaker) by changing a word from (2)

3) *Der Zug **hat** spät an-ge-kommen.
 DET.Nom train **have.3Sg.Pres** late on-Partic-come.
bad with any meaning, e.g. cannot mean ‘The train has arrived late’

Sentence (1) uses the auxiliary verb *haben* ‘to have’ with the participle of *hören* ‘to hear’, and (2) uses the auxiliary verb *sein* ‘to be’ with the participle of *ankommen* ‘to arrive’. Sentence (3) is ungrammatical because it uses *haben* ‘to have’ with a verb that requires *sein* ‘to be’, since *ankommen* can only indicate change-of-location. The changing of location is clear in the meaning of the word itself since the nature of *arriving* necessitates coming to a location from somewhere else. So if change-of-location verbs take *sein* ‘to be’, a sentence using *ankommen* ‘to arrive’ would be ungrammatical if the auxiliary modifying that verb was *haben* ‘to have’.

The structure of the past participle form of *ankommen* in (2) is different to that of *hören* in (1). This is because *ankommen* is a verb with a separable prefix *an-* ‘on, up’ attached to the verb stem *kommen* ‘to come’, somewhat comparable to English *on + come* in phrases like *oncoming traffic*. When

considering my corpus, I include both verb stems and the correlating verb forms with separable prefixes. When a verb with a separable prefix is conjugated into the Perfekt the verb stem, e.g. *kommen*, takes its participle form *gekommen*, and the separable prefix is placed at the beginning of the verb stem forming *angekommen*.

2.2. Formation of the Plusquamperfekt

The Plusquamperfekt is formed in a similar manner to the Perfekt, except that the auxiliary verb (*haben/sein*) is in the Präteritum (preterite/simple past) form. Examples of the Plusquamperfekt form with *haben* (4) and *sein* (5) below.

4) Source: Fehringer 2002

Ich **hatte** ein Buch ge-lesen.
I **have.1Sg.Prät** INDEF.Acc book Partic-read
“I **had read** a book.”

5) Source: Fehringer 2002

Er **war** in die Stadt ge-gangen.
He **be.3Sg.Prät** in/into DET.Acc city Partic-go
“He **had gone** to the city”

Plusquamperfekt is the German name for the verb form referred to in English as the *Past Perfect* or occasionally the *Pluperfect*. The form involves the combining of the perfect aspect and the past tense, unlike the Perfekt which combined the perfect aspect and the present tense. The Plusquamperfekt is used to describe an action that was begun and usually completed before a time in the past.

2.3. Auxiliary verbs in German

In Germanic and Romance languages the perfect aspect is indicated through the use of one or both of the auxiliaries meaning ‘to have’ or ‘to be’. Some languages, like English, have only retained one of these auxiliaries (in English’s case ‘to have’). Many of the Germanic and Romance languages have both and use each in distinct situations language internally, but a given language may use a different auxiliary than another language when describing the same situation (Rothstein 2008; Shannon 1995; Sorace 2000, 859–63). Sorace (2000) also describes a hierarchy of Auxiliary Selection based on thematic and aspectual characteristics of a given intransitive verb clause or sentence, with the topmost being the situation in which ‘to be’ was selected with the least variation cross-linguistically and the bottommost being the situation in which ‘to have’ was selected with the least variation. In between those two there are several combinations of thematic and aspectual characteristics, in a spectrum of variability with those situations with a slight preference for one or the other auxiliary placed closer to said auxiliary’s end of the spectrum. The variability rankings, so-to-speak, reflect both crosslinguistic variability and language internal variability in auxiliary selection.

2.3.1. Auxiliary selection for verbs that only use one of the auxiliaries

The category of intransitive verb that selects ‘to be’ with the least variation is ‘change of location’ or the “concrete displacement from one point in space to another” (Sorace 2000, 863). Sentences (6a-c) below are taken from (Sorace 2000, 863–64) and can be compared to the German sentence (2) above.

- 6) a. Maria è venuta alla festa (Italian)
 Maria **is** come to the party
 “Maria came to the party.”
- b. Marie **est** arrivée en retard (French)
 Marie **is** arrived late
 “Marie arrived late.”
- c. De brief **is** met de tweede post gekomen (Dutch)
 The letter **is** with the second post arrived
 “The letter arrived with the second post.”

In sentences (2) and (6) we can see that all of the four languages use their ‘to be’ auxiliary verb in the context of ‘change of location’. Sorace states that native speakers of those languages strongly accept the ‘to be’ auxiliary and reject ‘to have’ when the main verb is an intransitive ‘change of location’ verb.

The verb type that consistently selects ‘to have’ auxiliaries cross linguistically is a controlled nonmotional process verb, which Sorace (2000) defines as verbs “denoting nonmotional, normally agentive processes (*work, play, talk*) which do not manifestly affect the entity in control of them, and which are nonhomogeneous in terms of aspectual structure.” (Sorace 2000, 874). Examples of this type of verb can be seen in (7a-d) and these glosses were also sourced from (Sorace 2000, 874).

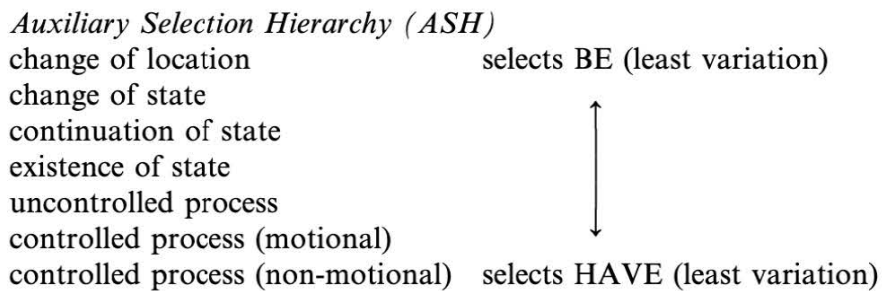
- 7) a. I colleghi **hanno** chiaccherato tutto il pomeriggio. (Italian)
 The colleagues **have** chatted whole the afternoon
 “My colleagues chatted the whole afternoon.”
- b. Les policiers **ont** travaillé toute la nuit. (French)
 The policemen **have** worked whole the night
 “The policemen worked all night.”
- c. De trompettist **heeft** met bolle wangen geblazen. (Dutch)
 The trumpeter **has** with puffed-out cheeks blown
 “The trumpeter blew with puffed-out cheeks.”

d. Kurt **hat** den ganzen Sonntag gearbeitet. (German)
 Kurt **has** the whole Sunday worked
 “Kurt worked all day Sunday.”

2.3.2. Verbs that select either auxiliary

Sorace (2000) lists several other intransitive verb categories that take more varied auxiliary verbs both cross linguistically and within individual languages. Here they are listed going from mostly taking the ‘to be’ auxiliary to mostly taking the ‘to have’ auxiliary: ‘change of state’, ‘continuation of a pre-existing state’, ‘existence of state’, ‘uncontrolled process’, ‘controlled motional process’ (Sorace 2000, 863; Keller and Sorace 2003).

Figure A. Sourced from (Keller and Sorace 2003, 60)



The manner-of-motion verbs that will feature heavily in this paper belong to the category “controlled process (motional)” in figure (A).

3. Lewandowski (2018) and his data

3.1. Introduction to Lewandowski’s paper and argument

Lewandowski, in a paper titled, “A semantic approach to auxiliary selection”, tested an explanation for auxiliary selection in German based primarily on a specific feature present in a sentence

(Lewandowski 2018). In this work, Lewandowski is doing further research into Janet Randall's (2007) proposal that this selection is determined by the feature [locomotion], with [+locomotion] triggering *sein* 'to be' and [-locomotion] triggering *haben* 'to have'. He argues that "despite the fact that some verbs are more typically linked to BE than others, many allow for BE/HAVE alternation and hence [+locomotion] is not a property of verbs themselves but rather a property of the more abstract construction 'BE+PARTICIPLE' with which the verbs interact." (Lewandowski 2018: 172). Lewandowski focuses on manner-of-motion verbs which he states are the verbs that can take either *haben* or *sein*. He argues that while the "prominence of directionality" related to the verb root generally is a good predictor of auxiliary selection, verb semantics itself does not determine whether *haben* 'to have' or *sein* 'to be' is selected. He explains this argument saying that "even some clearly directional motion verbs such as *schwimmen* 'swim' or *reiten* 'ride on a horse' can appear with HAVE when the speaker's intention is to highlight the sports activity itself by downplaying the dimension of locomotion" (Lewandowski 2018, 170). Similarly a speaker could "impose a change-of-location perspective on non-directional motion verbs" if they added a path phrase (e.g. ...to the market, ...out of the city) or used the auxiliary *sein* 'to be' with them.

Randall (2007) came to the conclusion that in German a combination of a Telicity linking rule and a Locomotion linking rule are used to determine the auxiliary. An event with the feature [+telic] is defined by her as having an intrinsic endpoint and an event with the feature [-telic] is a process without an outcome that could stop at any point. Randall compares Dutch and German and concludes that the telicity feature works for Dutch but does not fully cover German. She believes that unlike Dutch, German uses both telicity and locomotion, sentences (8)-(10) below are examples using

the same verb in Dutch and German with varying features. ‘Dance into’ in (9) is [+locomotion] and [+telic] so it takes *sein* as its auxiliary in German, the PP ‘dance around’ in (10) is [+locomotion] and [-telic] so it also takes *sein* in German, and finally the PP ‘dance on’ in (8) is [-locomotion] and [-telic] so it takes *haben* as its auxiliary in German. In sentence (10) we can see where the German selection differs from Dutch, as they select for different auxiliaries.

8) Source: Randall 2007 p.220 [-telic] [-locomotion]

Dutch: John **heeft** urenlang op de tafel gedanst.
 German: John **hat** stundenlang auf dem Tisch getanzt.
 John **HAS** been dancing on the table for hours

9) Source: Randall 2007 p. 220 [+telic] [+locomotion]

Dutch: John **is** in 2 sekonden de kamer in gedanst.
 German: John **ist** in 2 Sekunden ins Zimmer getanzt.
 John **IS** danced into the room in 2 seconds

10) Source: Randall 2007 p.222 [-telic] [+locomotion]

Dutch: John **heeft** urenlang door de zaal rondgedanst.
 German: John **ist** stundenlang durch den Saal herumgetanzt.
 John **AUX** been dancing around the room for hours

Randall posits that the prepositional phrases (PPs) carry the bulk of the telicity and locomotion features, with telicity being the determining force in Dutch, and locomotion taking precedence over telicity in German. Randall says that both the locomotion predicates and telic predicates “are derived compositionally, depending on the PP” (p222).

Returning to Lewandowski, he argues that manner-of-motion verbs in German do not all behave identically. He recommends that there be a distinction in linguistic scholarship between

directional manner-of-motion verbs (such as *laufen* ‘to run’ and *fliegen* ‘to fly’) and non-directional manner-of-motion verbs (like *schweben* ‘to float’ and *tanzen* ‘to dance’). He hypothesized that when both of these verb classes are “accompanied by a directional element (e.g., a PP or a particle)” (p. 163) they will select *sein*, aligning with Randall’s assessment. But if there is no overt path specification in the phrase or sentence the manner-of-motion verbs will be more likely to take *sein* if they are directional and will be more likely to take *haben* if they are non-directional. He also expects that there will be gradation among the verbs with some potentially showing “a higher degree of directionality”(p.163).

3.2. Methods in Lewandowski (2018)

Lewandowski created an experimental acceptability judgment task based on a Likert scale questionnaire to gather data from ~200 native speakers between 22 and 77 years old. The task included 15 verbs. He includes a breakdown of what percentage of participants judged a verb to be grammatical with only *sein*, only *haben*, or both (for each of the 15 verbs). The inclusion of a scale allowed the study to capture native speaker judgements that might have been missed if they were asked to pick one of the two auxiliaries, the addition of the options ‘preferably BE’ and preferably HAVE’ in addition to the ‘uniquely BE’, ‘uniquely HAVE’ and ‘BE or HAVE without any preference’ options allowed the study to capture more nuance in the participant responses. The experiment featured 5 directional motion verbs: *fahren* ‘to drive’, *fliegen* ‘to fly’, *krabbeln* ‘to crawl’, *laufen* ‘to run’, and *watscheln* ‘to waddle’. 5 non-directional motion verbs: *flattern* ‘to flutter’, *tanzen* ‘to dance’, *schweben* ‘to float’, *schwingen* ‘to swing’, and *wackeln* ‘to shake, wiggle’. 5 verbs relating to sports activities: *reiten* ‘to ride on horseback’, *schwimmen* ‘to swim’, *segeln* ‘to sail’, *skaten* ‘to skateboard’, and *surfen* ‘to surf’.

3.3. The data

Lewandowski's (2018) tables of results are as follows: Table 1 shows the five directional verbs and the percentage of participants who selected *sein* 'to be' (B in his label), *haben* 'to have' (H in his label) or used both interchangeably (B/H in his label) when the sentence did not have a path specification element. Table 2 shows the same for the five non-directional verbs when used in a sentence without path specification.

As seen in Table 1, when there is no path specification in the sentence provided to the study participants, they would select *sein* 'to be' as the auxiliary especially with *fahren* 'to drive', *fliegen* 'to fly' and *laufen* 'to run' (100% of the time for the first two, and nearly 99% of the time for the third). For the remaining two verbs *sein* is still the preferred auxiliary, but *haben* was more acceptable as an auxiliary. Looking at the combined percentages of B/H and H for these two verbs, the acceptability is at 26% for *krabbeln* 'to crawl' and 6.36% for *watscheln* 'to waddle'. Lewandowski suggests a possible explanation for an larger emphasis on a more complex manner of motion in *krabbeln* 'to crawl' and *watscheln* 'to waddle' leading to *haben* being more acceptable to speakers than it was for the other verbs in the directional type. Though those speakers are in the minority so the relatively more complex manner of motion is definitely not enough to sway most speakers to use *haben*. But it does show a notable variation in speaker preference

Table 1: Directional verbs without path specification ([Lewandowski 2018, 165](#))

	B %	B/H %	H %
FAHREN	100	0	0
FLIEGEN	100	0	0
KRABBELN	74	16.18	9.82
LAUFEN	98.84	1.16	0
WATSCHELN	93.64	5.2	1.16
MEAN	93.3	4.5	2.2

Table 2 shows the acceptability of *sein* ‘to be’ and *haben* ‘to have’ for non-directional verbs in contexts that do not imply a change of location. Here we can see that *haben* is much more acceptable with non-directional verbs than it was with directional verbs. The verbs *schwingen* ‘to swing’, *schweben* ‘to float’, and *flattern* ‘to flutter’ showed the highest degree of compatibility with the auxiliary *sein* ‘to be’ of the non-directional verbs (at 26.59%, 19.08%, and 9.83% respectively). It also shows that when there is no path specification in the verbal construction *haben* ‘to have’ is preferred nearly 100% of the time with the verb *wackeln* ‘to shake, wiggle’ and 93% of the time with the verb *tanzen* ‘to dance’.

Table 2: Non-directional verbs without path specification ([Lewandowski 2018, 165](#))

	B %	B/H %	H %
FLATTERN	9.83	30.64	59.53
SCHWEBEN	19.08	30.64	50.28
SCHWINGEN	26.59	30.64	42.77
TANZEN	1.74	5.2	93.06
WACKELN	0	0.58	99.42
MEAN	11.45	19.54	69.1

Table 3 shows the speaker judgements of the five sports-activity verbs when they were used in a sentence without path specification; this table has the same column labels as (1) and (2).

This table (3) shows that the verbs *reiten* ‘to ride on a horse’, *schwimmen* ‘to swim’, and to a slightly lesser extent *segeln* ‘to sail’ are more likely to combine with *sein* ‘to be’ than *haben* ‘to have’. These three verbs are also more likely to combine with *sein* ‘to be’ than the verbs *skaten* ‘to skateboard’ and *surfen* ‘to surf’. Lewandowski posits that this distribution reflects the meaning of the verbs. The ones more likely to use *sein* ‘to be’ (i.e. *reiten* ‘to ride on a horse’, *schwimmen* ‘to swim’, *segeln* ‘to sail’) have meanings tied to forward motion, while the verbs less likely to use *sein* ‘to be’ (i.e. *skaten* ‘to skateboard’ and *surfen* ‘to surf’) involve an activity taking place on a trajectory that features multiple obstacles that impede the activity or change the direction of motion of the activity (skateboard ramps and waves).

Table 3: Sports activity verbs without path specification ([Lewandowski 2018, 167](#))

	B %	B/H %	H %
REITEN	83.81	12	4.19
SCHWIMMEN	83.24	12.72	4.04
SEGELN	76.3	12.7	11
SKATEN	38.73	44.51	16.76
SURFEN	26.01	41.04	32.95
MEAN	61.62	24.59	13.79

Table 4 shows the native speaker judgements of the same directional motion verbs as table (1) but with sentences that feature path specification; the column labels are the same as tables (1)-(3).

This table (4), shows that *sein* ‘to be’ is the preferred auxiliary verb with directional motion verbs accompanied by a path phrase. Though none of the native speakers tested judged *haben* ‘to have’ to be

acceptable with these verbs when there is path specification, some of them would allow both *sein* ‘to be’ and *haben* ‘to have’ to be used with the verbs *fahren* ‘to drive’ and *fliegen* ‘to fly’.

Table 4: Directional motion verbs with path specification ([Lewandowski 2018, 167](#))

	B %	B/H %	H %
FAHREN	96.53	3.47	0
FLIEGEN	98.84	1.16	0
KRABBELN	100	0	0
LAUFEN	100	0	0
WATSCHELN	100	0	0
MEAN	99.07	0.93	0.00

Finally, Table 5 shows the native speaker judgements of the five non-directional motion verbs as table (2) but with path specification; the column labels are the same as the previous tables.

This table (5) shows that the auxiliary *sein* ‘to be’ is more likely to be used with non-directional motion verbs that are accompanied by a path phrase. Although three of these verbs (*schweben* ‘to float’, *schwingen* ‘to swing’, and *tanzen* ‘to dance’) were judged by some speakers to be acceptable with *haben* ‘to be’ as well.

Table 5: Non-directional motion verbs with path specification ([Lewandowski 2018, 168](#))

	B %	B/H %	H %
FLATTERN	100	0	0
SCHWEBEN	90.18	7.51	2.31
SCHWINGEN	92.49	5.2	2.31
TANZEN	98.26	0.58	1.16
WACKELN	100	0	0
MEAN	96.19	2.65	1.16

3.4. Lewandowski's conclusions about auxiliary selection in modern spoken German

Lewandowski's results support the concept that *sein* + the perfect is associated with the [+locomotion] feature proposed by Randall (2007) and that this feature is "related to the *salience of directionality*" (Lewandowski 2018, 172). Furthermore he remarks that over time there was an gradual extension of *sein* being used with motion verbs leading up to the present, when manner-of-motion verbs in contexts of overt or implied directionality distinctly prefer *sein* over *haben*. Finally he notes that in a limited degree, a few non-directional verbs are deemed grammatical with *sein* by native speakers if they "denote a manner that (i) could potentially describe motion along a spatial axis... or (ii) that is associated with a certain (non-translational) path (e.g., *schwingen* 'to swing')" (p.172). This seems to suggest that the construction of '*sein* + motion verb' is beginning to move into non-directional verbs.

4. My Corpus

4.1. My Research Question

Do Lewandowski's findings about there being a distinction between non-directional verbs and directional verbs in [+ locomotion] and [- locomotion] verbal constructions apply beyond modern spoken German of the late 20th and early 21st centuries? Does a similar distribution exist in earlier variations of New High German (Modern German)? I intend to answer these questions in the following sections.

4.2. What is my corpus?

My corpus comprises the works of eleven authors (or compilers) of folklore, with at least one work per author. For the purposes of this corpus the Grimm brothers are considered one compiler. All of the works were written by native German speakers and were written before 1850. The earliest text in my corpus was published in 1802, and the latest text was published in 1850. The compilers were from various places throughout modern day Germany, but at the time of publication Germany was not unified, and was composed of many small kingdoms and duchies. The last few years of my scope (1848-49) was a time of major upheaval in central Europe with several revolutions occurring almost simultaneously. These revolutions ultimately led to the unification of Germany in the 1860s and 1870s. My corpus includes works by three people from Brandenburg, and one person from each of the following: Weimar, Frankfurt, Stuttgart, Königsberg, Saxony-Anhalt, Hanau, Husum, and Rügen.

4.3. How I accessed the sources

I found the works that make up my corpus from two sources, the Deutsches Textarchiv - Kernkorpus (DTA) and Project Gutenberg (PG) ("Deutsches Textarchiv" n.d.), ("Books about Fairy

Tales -- Germany (Sorted by Popularity)” n.d.). Six works were sourced from the former and five from the latter. Both DTA and PG had versions of the works that were easily searchable, the former using Voyant tools and the latter could be searched through with ctrl + f. Although ctrl + f seems much less advanced than a “web-based reading and analysis environment for digital texts” (as Voyant tools describes itself), I am only using the Voyant tools equivalent of ctrl + f to search the DTA texts.

4.4. Why this group/genre of texts

Lewandowski tested his theory of auxiliary selection on modern spoken German. I chose a corpus of early 19th century folklore to test his theory in a different temporal context. I am already familiar with folklore of this era, and so knew that there were many authors and compilers working in the first half of the 19th century. This allows me to get a broader view on how these auxiliaries were being used by German speaking writers across this period in a register that was likely closer to spoken German than that of contemporary authors of scientific and more traditionally academic texts.

4.5. Additional notes on my corpus

I restricted my corpus to a 50-year span, but for many of the texts I could only find the publishing date so there is a possibility that some may have been written before 1800. The word count of all my sources added together is approximately 1.05 million words, with an average word count per source of 95,200 words.

5. My Data

5.1. *The list of verbs*

I systematically searched through my corpus and found 133 total instances of nine of Lewandowski's fifteen verbs in the requisite past participle form with a *haben* or *sein* auxiliary. These are: *fahren* 'to drive' (gefahren), *fliegen* 'to fly' (geflogen), *laufen* 'to run' (gelaufen), *flattern* 'to flutter' (geflattert), *tanzen* 'to dance' (getanzt), *schweben* 'to float' (geschwebt), *schwingen* 'to swing' (geschwungen), *reiten* 'to ride on horseback' (geritten), *schwimmen* 'to swim' (geschwommen). The first three in that list are representative of directional motion verbs, the next four are representative of non-directional motion verbs, and the final two are representative of sports-activity verbs. I will be making tables of these verbs separated into these categories so that my findings can be more easily compared to Lewandowski's. His verb list included additional verbs that did not appear in my corpus and naturally they will also not be included in this paper.

5.2. *How I determined [+/- locomotion]*

I use the following criteria in order to determine if the verbal construction was [+] or [-] for the [locomotion] feature:

(i) If the verbal construction is accompanied by a prepositional phrase that is tied to directionality, path specification or displacement of some sort, then I coded it as [+ locomotion]. Examples of prepositions that head these types of prepositional phrases include: *nach* 'to/towards, after, following', *durch* 'through, across', *von* 'from, out of'.

(ii) If the verbal construction has a prepositional affix that allows it to have a directionality, path specification or displacement meaning that it would not have had in its root form (as we saw

earlier with *an-kommen* ‘toward-come, to arrive’) then I coded it with [+ locomotion]. Examples of these prepositional affixes that are associated with [+ locomotion] include: *her-* conveys motion toward the speaker, similar to English ‘hither’ (can combine with other prepositions in an affix, e.g. *heran-* ‘approaching toward [the point of view of the speaker]’), *hin-* conveys motion away from the speaker, similar to English ‘thither’ (also can combine with other prepositions in an affix, e.g. *hinab-* ‘down [away from the point of view of the speaker]’, *hinabgefahren* ‘go down’, ‘descend’); *fort-* ‘away’, ‘forth’, ‘onward’ (e.g. *fortgelaufen* ‘ran away’)

(iii) If there was a preposition that indicated stationary/non-directionality then I coded it as [- locomotion]. Examples of these non-directionality prepositions include *in* + the dative case ‘in [no implied movement]’ this can be represented as *im* as it is a contraction of *in* ‘in’ and the article *dem* ‘the’ in the dative case for masculine and neuter, it can also be represented as *in der* or *in den* if the determiner is attached to a feminine or plural noun; *auf* + dative case ‘on [no implied movement]’

(iv) If there was no preposition I coded the verb as [? locomotion] if I wasn’t sure of the implicature and [- locomotion] if it was clear there was no directionality.

5.3. Tables

I have organized my data into six tables based on the type of verb (directional motion, non-directional motion, and sports-activity), and the presence or absence of the locomotion feature. The 20 entries from my data that are coded as [? locomotion] are excluded from these tables. The first five tables below correspond to the tables provided earlier in this paper from Lewandowski (2018): table 1-table 6, table 2-table 7, table 3-table 8, table 4-table 9, table 5-table 10. The final table (11) of my

data does not have a corresponding table in Lewandowski (2018), I will discuss this more later during the explanation of table 11.

This table (6) shows the directional motion verbs that appeared in [- locomotion] verbal constructions. The verbs *fahren* ‘to drive’ and *fliegen* ‘to fly’ appeared with the auxiliary *sein* ‘to be’ 100% of the time. The verb *laufen* ‘to run’ appeared mostly with *sein* but it also is acceptable with *haben* ‘to have’, appearing with the latter 40% of the time. This shows that directional verbs are more disposed to select *sein* than *haben*, even when there is no locomotion feature in the construction.

Table 6: Directional motion verbs in [- locomotion] verbal constructions

	<i>Sein</i> ‘to be’	<i>Haben</i> ‘to have’	Total number in corpus
fahren	100 %	0 %	2
fliegen	100 %	0 %	2
laufen	60 %	40 %	5
Mean	86.67 %	13.83 %	

This table (7) shows the non-directional motion verbs that appeared in [- locomotion] verbal constructions. The verb *tanzen* ‘to dance’ appeared in my corpus the most out of the non-directional verbs, and in 100% of the occurrences in [-locomotion] constructions *haben* ‘to have’ was the auxiliary used. The verbs *schweben* ‘to float’ and *schwingen* ‘to wiggle’ both only appeared once in [- locomotion] constructions and both used the auxiliary *haben* ‘to have’ in those appearances. This does result in a mean of 100% selecting *haben* ‘to have’ but it is possible that there was more variation that is not reflected in my data because my corpus had fewer examples of these verbs being used. What is clear is

that when there is a [-locomotion] feature *tanzen* ‘to dance’ accepts the auxiliary verb *haben* ‘to have’ and not *sein* ‘to be’. The verb *flattern* ‘to flutter’ is a non-directional motion verb that appears in my corpus, but not in [-locomotion] constructions so it has been excluded from this table. The verb *schwingen* ‘to swing’ appears in this table (7) but it is absent from table (10) below. Overall the data shown in this table indicate that non-directional motion verbs are disposed to select *haben* over *sein* when there is no locomotion feature present.

Table 7: Non-directional motion verbs in [- locomotion] verbal constructions

	<i>Sein</i> ‘to be’	<i>Haben</i> ‘to have’	Total number in corpus
schweben	0 %	100 %	1
schwingen	0 %	100 %	1
tanzen	0 %	100 %	6
Mean	0 %	100 %	

This table (8) shows two sports activity verbs, *reiten* ‘to ride on horseback’ and *schwimmen* ‘to swim’ in [-locomotion] verbal constructions. When there is no locomotion feature present these verbs can combine with either *haben* ‘to have’ or *sein* ‘to be’. This is evident in *reiten* ‘to ride’ as there is an even split between the two auxiliaries. In the one example present in my data of *schwimmen* ‘to swim’ in a [-locomotion] construction, it occurs with *sein* ‘to be’. The verb *schwimmen* ‘to swim’ was being modified by the adverb *lang* ‘for a long time’, the relevant clause in this example ‘*So war er lang geschwommen,*’ can be read as ‘He had swum for such a long time.’ There is no explicit change in location indicated in this clause. The main purpose of the clause is to stress the duration of the

swimming, and not any direction, departure point, destination, or course. Therefore I categorized it as being [-locomotion]. Overall there appears to be a preference for *sein* ‘to be’ but not as much as in table (6) with the directional motion verbs in [-locomotion] constructions.

Table 8: Sports-activity verbs in [- locomotion] verbal constructions

	<i>Sein</i> ‘to be’	<i>Haben</i> ‘to have’	Total number in corpus
reiten	50 %	50 %	4
schwimmen	100 %	0 %	1
Mean	75 %	25 %	

This table (9) shows the distribution of the three directional motion verbs that appeared in my corpus and how often they took each auxiliary when they appeared in a [+ locomotion] construction. In these contexts directional verbs nearly always use the auxiliary *sein* ‘to be’. There was only one instance in my corpus of any of these verbs using *haben* ‘to have’ in a [+ locomotion] context (my data is linked in the appendix, this one is on line 60 of the spreadsheet). It is clear that *sein* ‘to be’ is more likely to be used with [+ locomotion] directional verbs than *haben* ‘to have’.

Table 9: Directional motion verbs in [+ locomotion] verbal constructions

	<i>Sein</i> ‘to be’	<i>Haben</i> ‘to have’	Total number in corpus
fahren	96 %	4 %	25

fliegen	100 %	0 %	13
laufen	100 %	0 %	29
Mean	98.67 %	1.33 %	

This table (10) shows the non-directional motion verbs that appeared in [+ locomotion] verbal constructions. There were fewer instances in my corpus of non-directional verbs in this type of construction than there were of directional verbs in the same construction (see table 9). In the examples I found, non-directional verbs seemed more divided between *haben* and *sein* than directional verbs when the [+locomotion] feature is present. There were no instances of the verb *schwingen* ‘to swing’ in a [+ locomotion] verbal construction in my corpus so I have excluded it from this table. The verb *flattern* ‘to flutter’ was absent in table 7 (which dealt with the same type of verbs but in [-locomotion] construction) but is present here (table 10) in [+locomotion] constructions. There were only two instances in my corpus of *flattern* ‘to flutter’ being used with an auxiliary verb, and both were in contexts that fit my criteria for [+locomotion], one instance of *flattern* ‘to flutter’ used the auxiliary *sein* ‘to be’ and the other instance used the auxiliary *haben* ‘to have’.

Table 10: Non-directional motion verbs in [+ locomotion] verbal constructions

	<i>Sein</i> ‘to be’	<i>Haben</i> ‘to have’	Total number in corpus
flattern	50 %	50 %	2
schweben	100 %	0 %	1
tanzen	33.33 %	66.67 %	3
Mean	61.11 %	38.89 %	

Table (11) shows the sports activity verbs that appeared in [+locomotion] verbal constructions in my corpus. Here the verb *reiten* ‘to ride on horseback’ shows a clear preference for *sein* ‘to be’, with it being the auxiliary used in 100 % of the occurrences of *reiten* ‘to ride’ [+ locomotion] verbal constructions in my corpus. In the only instance of *schwimmen* ‘to swim’ appearing in a [+locomotion] construction it selected the auxiliary verb *sein* ‘to be’. In that sentence the verb *schwimmen* ‘to swim’ is modified by the adverb *weit* ‘far’, this modifier makes the directionality of the verbal construction clear as it is emphasizing the distance swum. The data in this table indicates that a sports activity verb appearing in [+locomotion] constructions triggers the use of *sein* ‘to be’. As I mentioned earlier, this table (11) does not have a corresponding table in Lewandowski (2018). I have interpreted the absence of that table as an implication that sports-activity verbs always use *sein* ‘to be’ in [+ locomotion] verbal constructions. It makes sense for him to exclude a table if these verbs are only acceptable with one auxiliary when the verbal construction has the [+ locomotion] feature. If there was any other reason for the table’s exclusion he probably would have mentioned it.

Table 11: Sports-activity verbs in [+ locomotion] verbal constructions

	<i>Sein</i> ‘to be’	<i>Haben</i> ‘to have’	Total number in corpus
reiten	100 %	0 %	16
schwimmen	100 %	0 %	1
Mean	100 %	0 %	

5.4. What does the data show us about auxiliary selection

My data shows that there is a connection between selection of *sein* 'to be' and [+locomotion] in my corpus. We can see this in tables (9, 10, and 11) where there is a distinct preference for *sein* 'to be' in the mean percentages of each table, with table (9) showing a mean of 98.67% for directional verbs using *sein* 'to be' and table (11) showing a mean of 100% for sports activity verbs taking *sein* 'to be'. If we compare these numbers to the respective [-locomotion] tables, (6) for directional verbs and (8) for sports activity verbs, there is a clear increase in the use of *sein* 'to be' from the [-locomotion] tables to the [+locomotion] tables. The [-locomotion] table for directional verbs (6) shows that a mean of 86.67% of them use *sein* 'to be', and comparing that number to the 98.67% mentioned above in conjunction with the [+locomotion] directional verbs' chart, it is clear that [+locomotion] lead to a marked increase in the verbs' selection of *sein* 'to be'.

While this overall trend of [+ locomotion] being connected to the use of *sein* 'to be' is very clear, there are a few verbs in my data that do not fully align with this trend. Some non-directional verbs represented in table (10), notably *tanzen* 'to dance' and to a lesser extent *flattern* 'to flutter', do not show a preference for *sein* 'to be', the former demonstrates a preference for *haben* 'to have' and the latter does not show an obvious preference for either in my data. This might indicate that the [+ locomotion] feature did not extend as far into the non-directional verbs in the early 19th century as it does in modern spoken German. The main thing that is keeping me from saying that [+ locomotion] does not apply to non-directional verbs at all is the comparison between table (7) and table (10). These tables both show the auxiliaries selected by non-directional verbs in my corpus, (7) shows those verbs in [- locomotion] verbal constructions where they always select *haben* 'to have' and (10) shows them in [+

locomotion] verbal constructions where they select *sein* ‘to be’ 61.11% of the time per the mean of non-directional verbs in the table. So while the [+locomotion] feature didn’t affect the non-directional verbs as much as the sports verbs or the directional verbs, the non-directional verbs were still somewhat affected by the [+locomotion] feature.

6. Analysis

6.1. With regards to [+/- locomotion], does Lewandowski’s explanation for auxiliary selection in the German Perfect hold up?

Lewandowski’s explanation for auxiliary selection mostly holds up. Many of the verbs using *sein* ‘to be’ in my data show indications of directionality that would point to them having the feature [+locomotion] which does align with his explanation. Looking at the mean values of my tables and of the corresponding tables in his paper, we see the auxiliary verb preferences trend in the same direction.

There are some instances where my data has evidence of an auxiliary being used in a situation where his data says it would not be used. Most strikingly with the non-directional motion verb *flattern* ‘flutter’, in line 13 of my data, the verbal construction uses the preposition *durch* ‘through’ in a manner that implies directionality, and thus [+locomotion], however it also uses the auxiliary verb *haben* ‘to have’ in that sentence. The clause in which it appears refers to a bird that had previously been fluttering through the air, (...*durch die Luft geflattert hatten*). Lewandowski indicates in his table (reproduced as table 5 in this paper) that *flattern* ‘to flutter’ does not use the auxiliary *haben* in this context in modern spoken German, it has 0% acceptability in both the *haben* ‘to have’ category and the category indicating that either *haben* ‘to have’ or *sein* ‘to be’ were acceptable.

Similarly, the directional motion verb *laufen* ‘to run’ uses the auxiliary *haben* ‘to have’ twice in my data, both times in verbal constructions that are [-locomotion] based on my criteria.

Lewandowski’s data indicates that 0% of the German speakers who participated in his study consider *haben* ‘to have’ an acceptable auxiliary for *laufen* ‘to run’, and only 1.16% of those participants judged that *haben* ‘to have’ and *sein* ‘to be’ were interchangeable (see table 1). Nearly 99% of the participants in his study thought that *sein* ‘to be’ was the only acceptable auxiliary for the verb *laufen* ‘to run’ in [-locomotion] verbal constructions. It appears that something must have changed in the past 200 years as two different authors in the 1810s used *haben* ‘to have’ with *laufen* ‘to run’. I think further study is needed to see if this deviation from the modern perception of which auxiliary is acceptable with these verbs extends further than what I have noted.

7. Conclusions

In this paper I have tested the conclusions of Lewandowski (2018) of auxiliary selection (*sein* ‘to be’ and *haben* ‘to have’) with manner-of-motion verbs in contemporary spoken German on my own corpus of folklore written and compiled in the first half of the 19th century. His data indicated a contrast between motion verbs that imply directionality and those that do not imply directionality. In his data both types combined consistently with *sein* ‘to be’ when there was an element present indicating a path (these verbal constructions were later defined as having a [+ locomotion] feature). When there is not an overt path element present (later defined as a [- locomotion] feature) the directional verbs in his data show a marked preference for *sein* ‘to be’ whereas the non-directional verbs show a preference for *haben* ‘to have’. My corpus of folklore and fairytales published between 1802 and 1850, showed a similar distribution to that observed by Lewandowski, with the overall trends roughly

lining up. However my data for non-directional motion verbs in [+ locomotion] verbal constructions did not show the same strong preference for *sein* ‘to be’ that his data showed. My data showed a very slight preference for *sein* ‘to be’ but this preference could be swayed the other direction if there was one more instance of a non-directional motion verb in a [+ locomotion] verbal construction combining with *haben* ‘to have’ in my data. I believe this indicates that the spread, noted by Lewandowski (2018, 172), of the construction “BE + motion verb” to non-directional verbs in contemporary German, has either just started or is about to start in the early-mid 19th century.

A potential next step of inquiry into this topic would be adding additional sources to the corpus for each author/compiler, to refine the patterns emerging in this data. It would be very helpful if these additional sources added more data points for the verbs like *schwimmen* ‘to swim’, *schwingen* ‘to swing’, and *schweben* ‘to float’, as they each currently have fewer than five entries in my data. This way we can be more confident in discussing their patterns in future. Another future step could definitely be doing the same methodology in data collection but with a corpus that spans the next fifty years, i.e. 1850-1900, to see how the auxiliary selection compares to both the modern distribution described in Lewandowski (2018) or the older selection documented in my corpus ranging from 1802 to 1849.

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Appendix

 Corpus-Anna Karpowicz Linguistics Thesis

<https://docs.google.com/spreadsheets/d/1y5lReewZ87frBldNKwfzPgV2sGT40amt7G5Yj3ceaM8/edit?usp=sharing>