Epistemological challenges in the study of alternating constructions

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Abstract

In this article we identify and discuss a number of epistemological challenges in the study of alternating constructions in natural languages. After proposing a working definition for the concept of ‘alternating constructions’, we address the following three specific issues: (i) the need to distinguish between qualitatively different types of alternating constructions, (ii) the need to distinguish between rules of grammar and regularities of language use in the study of alternating constructions, and (iii) the various challenges related to assessing correlation and causation in the study of alternating constructions. On the basis of these three challenges, we take stock of current research on alternating constructions and provide a number of suggestions for future research.

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1. INTRODUCTION

The study of alternating constructions has been an important research area in modern linguistics. Linguists stemming from various research traditions and diverse theoretical backgrounds have dedicated numerous studies to the investigation of several alternating constructions. Consider, for example, the following four sets of alternating constructions that have sparked considerable scholarly interest: the English locative alternation, e.g. (1) (Levin, 1993; Goldberg, 1995; Iwata, 2008; Perek, 2015), the English particle placement alternation, e.g. (2) (Jackendoff, 1997; Dehé, 2002; Gries, 2003; Cappelle, 2006), the English genitive alternation, e.g. (3) (Rosenbach, 2002; Stefanowitsch, 2003; Wolk et al., 2013; Grafmiller, 2014; Kolkmann, 2019) and the English and Dutch dative alternations, e.g. (4) (Goldberg, 1995, 2002; Yaguello, 1997; Bresnan, 2007; Bresnan et al., 2007; Bresnan and Ford, 2010; De Cuypere and Verbeke, 2013; De Cuypere, 2015; Colleman, 2009, 2012; Baten and De Cuypere, 2014; Geleyn, 2017).

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Pairs of alternating constructions such as (1-4) have been studied in both functional and formal approaches to the study of language. Generally speaking, the focus in formal approaches has mostly been on pinpointing the details of the syntactic structure of every construction and on the question whether one of the two structures can be considered syntactically more basic. An example is the exchange between Jackendoff (1997) and Dehé (2002) on the nature of the English particle placement alternation, e.g. (2a-2b). Conversely, in functional approaches, the focus of enquiry has been mainly on determining the semantic and/or pragmatic traits and constraints of each of the alternating constructions, either from a qualitative or from a quantitative perspective, or both. In this article, we will be concerned with the functional strand in the study of alternating constructions in natural languages and make reference to work in formal and generative analyses only in passing.

The study of alternating constructions within the broad field of functionally oriented linguistics has been dominated for the last 30 years by two major trends. A first trend has been the effort of characterizing the constructions involved in alternations as constructions in their own right with a specific meaning of their own. This effort has been of central importance in the qualitative strands of Construction Grammar and Cognitive Linguistics (e.g. Langacker, 1991; Goldberg, 1995, 2002; Stefanowitsch, 2003; Colleman, 2012). For example, the English dative alternation, e.g. (4a-b), has been analyzed by Goldberg (1995, 2002) as a surface phenomenon that is dependent on the partly overlapping meaning potentials of two independent constructions in their own right, viz. the Double Object construction, e.g. (4a), which is said to encode the meaning of ‘caused possession’, i.e. ‘Agent CAUSES Recipient to RECEIVE Patient’, and the Prepositional Object construction, e.g. (4b), which supposedly encodes the meaning of ‘caused motion’, i.e. ‘Agent CAUSES Patient to MOVE TO a Goal’. English ditransitive verbs such as give normally occur in the Double Object construction, but according to Goldberg they can also occur in the ‘caused-motion’ construction on the basis of the metaphor ‘transfer of ownership as physical transfer’, giving rise to a metaphorical extension, which “allows the caused-motion construction to be used to encode the transfer of possession” as a transfer-caused-motion construction (Goldberg, 1995: 90; cf. also Hilpert, 2019). Analyses that can be situated in this tradition have brought to light many semantic and/or pragmatic differences between pairs of alternating constructions, not only with regard to truth-conditional aspects of meaning, but also with regard to procedural aspects of meaning, most notably those that relate to the field of information structure.

For the time being, we use the cover term ‘meaning’ as a neutral term to refer to the linguistic content of a construction without further qualification, similar to the neutral term ‘function’ in functional typology (cf. Haspelmath 2003, Malchukov et al. 2010). In Section 3.3, we further refine the terminology and introduce different types of linguistic meaning in order to determine the nature of alternating constructions, understood as form-meaning pairings in their own right, more accurately.
Second, since the turn of the century there has been a wave of quantitative corpus-based studies on alternating constructions conducted in quite diverse frameworks that can be situated within the broad paradigm of functionally oriented linguistics, including Lexical Functional Grammar (e.g. Bresnan, 2007; Bresnan et al., 2007; Bresnan and Ford, 2010, among others), Cognitive Linguistics (e.g. Gries, 2003; Gries and Stefanowitsch, 2004; Colleman, 2009; Wolk et al., 2013; Vanderschueren and De Cuypere, 2014; Geleyn, 2017; Gries, 2017; Van Beveren et al., 2018, among others) and Integral Linguistics (De Cuypere, 2010; De Cuypere and Verbeke, 2013; De Cuypere et al., 2014; De Cuypere, 2015; Willems et al., 2018, 2019; De Vaere et al., 2018; De Vaere et al., 2021). Quantitative corpus studies have yielded many insights regarding the regularities of language use involved in numerous alternations in various languages. Due to large samples of naturally occurring language and the advanced use of statistical methods, these analyses have proven to be a sound basis for the descriptive study of the associations that hold between specific alternants and several morphosyntactic, semantic and pragmatic variables.

Both qualitative approaches and corpus-based quantitative approaches to alternating constructions face a number of epistemological challenges. In this article, we identify three major challenges. In particular, the article focuses on the need to distinguish between qualitatively different types of alternating constructions, the need to distinguish between rules of grammar and regularities of language use in the study of alternating constructions, and the various problems related to determining and distinguishing correlation and causation in the study of alternating constructions. The article not only takes stock of the various epistemological challenges alternating constructions pose to current linguistic research, but also outlines a number of proposals on how to deal with them. In addition to increasing our understanding of the nature of alternating constructions, the article also makes a contribution to some much debated issues in the philosophy of linguistics that go beyond the specific topic of alternating constructions. These include the conceptual distinction between the structurally encoded semantics and the inferred pragmatics of clausal and sentential constructions, possible strategies for a methodological synthesis in the study of grammatical rules and linguistic regularities, and the relation between correlation and causation in the language sciences.

In order to address these three challenges we adopt a meta-linguistic perspective that takes stock of the analyses of alternating constructions that have hitherto been put forward in functionally oriented linguistics. Our account is not specific to any particular linguistic framework, but draws inspiration from a number of sources, including Integral Linguistics, the meta-linguistic work of Itkonen and the work of Hempel and Salmon in the philosophy of science. For the differentiation between various types of alternating constructions, we mainly rely on two sets of distinctions that have been developed in the context of Integral Linguistics. For the discussion of the relation between rules of grammar and regularities of language use we draw on Coseriu’s theory of systematic grammar and normal language use and Itkonen’s account of the importance of normativity for understanding language. With regard to the relation between correlation and causation we apply some insights from the philosophy of science that have been articulated by Hempel and Salmon to the specific research area of alternating constructions within the field of the language sciences. Rather than delving into a theoretical defense of any of these accounts, we try to demonstrate the strenghts of these particular approaches in practice by relying on them to elucidate the issues that are at stake with regard to every epistemological challenge we will address consecutively in the article.

The article is structured as follows. Section 2 provides a working definition of the phenomenon of alternating constructions. In Section 3, we discuss several qualitatively different types of alternating constructions that need to be distinguished. Section 4 addresses the need to differentiate between grammatical rules and regularities of language use, the challenges that are connected with this differentiation, and the importance of this issue for the study of alternating constructions. Section 5 deals with the issues of correlation, constructing probabilistic models, inferring causality and determining the direction of causality. The article concludes with a general overview that includes a number of suggestions for further research on alternating constructions from a functional perspective.

2. DEFINING ALTERNATING CONSTRUCTIONS

There exists a great variety of alternating constructions across languages. Given that linguistic constructions can be found from the morphological level up to the sentential level, it is possible to find alternating constructions on all those levels of language (cf. Fillmore, 1988; Fillmore et al., 1988; Fillmore and Kay, 1993; Kay, 1996; Goldberg, 1995, 2002, 2006; Jackendoff, 2002, 2010; Hilpert, 2019). The main focus of our study will be on alternating constructions on the clausal and sentential level, which reflects the predominant focus of current linguistic research on alternating constructions. We will occasionally also take into account alternating constructions that can be found on other linguistic levels. Before delving into the major epistemological challenges connected to the study of alternating constructions, it is important to determine a coherent working definition in order to delimit our object of investigation in a precise way.
Many constructions that partake in an alternation are to a large degree similar with regard to their morphosyntactic properties. Consider, for example, the German ditransitive alternation with the verb *geben* (‘give’) in (5) (examples are taken from De Vaere et al., 2018):

5a. Die Regierung versprach, das Schulgebäude im August der Gemeinde zurückzugeben. The government promised to give the school building back to the municipality in August.

b. 1991 hat die Stadt Nischnij Nowgorod das Gebäude an die Gemeinde zurückgegeben. In 1991 the city of Nischnij Nowgorod has given back the building to the municipality.

The two German structures are both characterized by what is commonly called indirective alignment. The Recipient-like argument is either in the dative case (DAT), e.g. (5a), or headed by a preposition, viz. *an* (‘to’), which takes a complement in the accusative (ACC), e.g. (5b) (with some verbs, the preposition *zu* with a complement in the dative is also possible). This type of alignment contrasts with the so-called “neutral alignment” found, for example, in the Double Object construction that partakes in the English dative alternation, e.g. (4a), and the Dutch dative alternation, e.g. (4c), in which the two objects of the ditransitive clause are both coded like the object of monotransitive clauses (Malchukov et al., 2010). In German, both alternants are moreover found with various possible constituent orders, with the Indirect Object either preceding or following the Direct Object.² The categorial morphosyntactic difference between the two alternants in (5a) and (5b) is thus effectively limited to only the difference between the use of a dative noun phrase and the use of a prepositional phrase (De Vaere et al., 2018; Willems et al., 2019; De Vaere et al., 2021).

With other alternating constructions, the formal similarity between the alternants is much less apparent. Consider the Dutch sentence-focus alternation (also called thetic or presentational alternation) in (6). It comprises at least four different constructions which are formally quite dissimilar: a construction with the canonical Dutch subject-verb order, but which is marked prosodically with a pitch peak on the subject – rendered by means of capital letters – in (6a), a construction with syntactic inversion of the prototypical Dutch subject-verb order and insertion of the adverbial particle *er* (‘there’) in the canonical subject position, e.g. (6b), a non-prototypical clefted structure introduced by *er* rather than *het* (‘it’), which is the prototypical pronoun used for Dutch clefts, e.g. (6c), and a construction introduced by a perception verb with weak-verb-like properties followed by a complementizer clause, e.g. (6d) (Belligh, 2018, 2020a, 2020b).

6a. EEN TREIN komt aan. a train comes at ‘There’s a train coming.’

b. Er komt een trein aan. there comes a train at ‘There’s a train coming.’

c. Er is een trein die aankomt. there is a train that at-comes ‘There’s a train coming.’

d. Ik zie dat er een trein aankomt. I see that there a train at-comes ‘There’s a train coming.’

² Although both word orders are possible with both ditransitive structures in German, the structure with the dative NP tends to favor the Recipient-Theme order with most ditransitive verbs, whereas the opposite Theme-Recipient order is mostly found with the variant with the prepositional phrase (De Vaere et al. 2018, 2021).
Given the variety of morphosyntactic traits that can be found among alternating constructions such as these, formal similarity does not seem to constitute a necessary condition to define which constructions qualify as alternating constructions. Nor is formal similarity a sufficient condition to define alternating constructions. Formally similar constructions do not alternate at all in the majority of cases. Consider for example the formally closely related Dutch structures in (7). Both constructions formally consist of a syntactically clefted structure introduced by an adverbial element, a conjugated form of the verb zijn ("to be"), a NP and an ensuing relative clause. The two constructions can be made up of exactly the same lexical material, as in (7), and only differ with regard to the specific adverbial element at the beginning of the cleft, viz. het ("it") and er ("there"). Although the two constructions are formally highly similar, they express different functions and are not at all used interchangeably. The construction in (7a) is typically used to express narrow argument-focus on the clefted NP, for instance in reply to the question whether it is a man or a woman who wants to have a conversation, whereas (7b) is typically, albeit not solely, used to express broad sentence-focus, for example in reply to a "What happened?" or a "What is going on?" question.

\[
\begin{array}{llllllll}
7 & a. & Het & is & een & man & die & jou & wil & spreken. \\
& & It & is & a & man & that & you & wants & speak \\
& & ‘It is a MAN who wants to speak to you.’ \\
& b. & Er & is & een & man & die & jou & wil & spreken. \\
& & There & is & a & man & that & you & wants & speak \\
& & ‘There’s a man who wants to speak to you.’
\end{array}
\]

Thus, by solely relying on criteria that relate to linguistic form, it is not possible to define what alternating constructions are. However, necessary and sufficient traits that define all cases of alternating constructions can be determined when taking into consideration the functions of the constructions. All instances of alternating constructions share the necessary and sufficient trait that they are understood to convey a common meaning (or alternatively, a set of interrelated meanings). For example, with respect to the aforementioned German ditransitive alternation, both the alternant with a noun phrase in the dative case and the alternant with a prepositional phrase are used to convey the meaning of ‘transfer’ that involves an Agent-like, a Theme-like and a Recipient-like argument (De Vaere et al., 2018; Willems et al., 2019). In the case of the Dutch sentence-focus alternation all alternating constructions can be characterized by the general procedural meaning ‘sentence-focus’ or, alternatively, ‘theticity’ (Belligh, 2018, 2020a, 2020b). In fact, the presence of a common meaning or function that all alternants share is the logical prerequisite to identify a set of constructions as alternating constructions in the first place. On this basis we propose the following definition for the concept of alternating constructions.

**Alternating constructions:** Two or more linguistic structures of the same language for which there is an intuitive understanding that they can be used to convey a common meaning.

It is important to note that without assuming a common meaning (or function) as a basis, there is no possibility to conceptualize two or more structures as alternating constructions. However, there are four important caveats that need to be considered. First, it is often far from easy to define the common meaning of the alternating constructions in an explicit way. In many cases there is only an intuitive understanding on behalf of linguists and language users that two structures are used to express a common meaning. The meta-linguistic description and explicit definition of this common meaning, on the other hand, is often anything but a straightforward endeavor. Second, the possibility of alternation between two clausal construction types might be limited to a few specific verbs, as is for example the case for the English locative alternation (Levin, 1993; Iwata, 2008). It is possible to observe that the two alternants can express more or less the same meaning for every verb taken separately, but it is even more difficult to provide an explicit definition of the common meaning that lies at the basis of the locative alternation in general, cutting across the individual verbs. In a similar vein, one can find in German alternating constructions of the type illustrated in (8), with the prefixverb befolgen (‘follow’) instantiating the two-place Nominative–Accusative pattern and folgen (‘follow’) instantiating the less common two-place Nominative-Dative pattern. Apart from a number of specific verbs that are occasionally found in both patterns, mostly regionally distributed, e.g. rufen (‘call’, ‘summon’), both syntactic patterns do not constitute alternating constructions that can host one and the same verb (examples are drawn from the Mannheim DeReKo corpus).

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3 Compare (a) *Jemand ruft den Kellner* (‘Someone calls the waiter’) – (b) *Jemand ruft dem Kellner* (‘Someone calls the waiter’). Alternant (b) is nowadays considered archaic or regional language, for example typical of Southern German.
Third, the fact that alternating constructions can intuitively be said to share a specific meaning does not amount to saying that they are entirely equivalent. The whole point of the research on alternating constructions in functional approaches is to pinpoint relevant semantic and/or pragmatic differences between the alternants. However, the fact that it requires sustained empirical research to figure out the details of the differences between the alternants is in itself proof that these differences are far from self-evident. It is not surprising, then, that it is their shared traits that intuitively get the lion’s share of attention. The more vaguely defined the common function is, the more straightforward it is to tell the alternants apart by identifying significant differences. Conversely, the more specific the common function turns out to be, the more difficult it is to tell the alternants apart and, consequently, the more interesting they are for linguistic research (cf. Section 3.1).

The preceding remarks entail that in conceptualizing two or more structures as alternating constructions, one necessarily first adopts an onomasiological point of view. The onomasiological point of view contrasts with the semasiological point of view. Whereas the latter has its starting point in linguistic form, the former approaches language from the conceptual content conveyed through language. Only by starting from the conceptual content and proceeding to the way that content is expressed in language is it possible to establish that there are various linguistic structures that can be used to express one and the same conceptual content, i.e. fulfill a specific (denotational or procedural) function. However, the onomasiological perspective alone can never be exhaustive in the study of language (Coseriu, 1987, 1992; 2000[1990], 2001; Willems, 2011). The constructions involved in the alternation can, and must, be studied from a semasiological perspective as well, in order to determine the relationship between the common denotational function of the various structures and the specific meanings of any one structure considered as a form-meaning pairing in its own right (cf. Section 3.3). Taking the semasiological perspective, it might turn out that the constructions involved have quite different structurally encoded meanings, but share a common denotational potential. A well-known example taken from linguistic typology can serve to illustrate the difference. The Dyirbal sentences (9a) and (9b) both express the propositional content that father saw mother, yet (9a) is an active sentence whereas (9b) is an antipassive (Palmer, 1994: 18):

<table>
<thead>
<tr>
<th>9</th>
<th>a.</th>
<th>Mother-ABS</th>
<th>father-ERG</th>
<th>bura-n</th>
<th>‘Father saw mother.’</th>
</tr>
</thead>
<tbody>
<tr>
<td>yabu</td>
<td>ŋuma-ŋgu</td>
<td>see-PAST</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>ŋuma</td>
<td>bural-ŋa-nyu</td>
<td>yabu-gu</td>
<td>‘Father saw mother.’</td>
<td></td>
</tr>
<tr>
<td>father-ABS</td>
<td>see-ANTIP-PAST</td>
<td>mother-DAT</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Both sentences share the same thematic roles and coincide in terms of their core denotation, but their language-specific grammatically encoded meanings are nevertheless different. The antipassive construction is commonly referred to as less transitive than the active construction (Kulikov, 2011: 380-382). This entails, e.g., that (9b), but not (9a), might be excluded that such items and their conventional dictionary paraphrases enter into an occasional alternation in a particular text or discourse, they do not fall under the above definition and their relation is therefore not the subject matter of

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<table>
<thead>
<tr>
<th>8</th>
<th>a.</th>
<th>Netanjahu</th>
<th>sollte</th>
<th>also</th>
<th>den</th>
<th>Rat</th>
<th>befolgen [. . .].</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netanjahu.NOM</td>
<td>should</td>
<td>therefore</td>
<td>the</td>
<td>advice.ACC</td>
<td>follow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘Netanjahu should therefore follow the advice [. . .].’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>Er</td>
<td>werde</td>
<td>dem</td>
<td>Rat</td>
<td>folgen [. . .].</td>
<td></td>
<td></td>
</tr>
<tr>
<td>He.NOM</td>
<td>will</td>
<td>the</td>
<td>advice.DA</td>
<td>follow</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘He will follow the advice [. . .].’</td>
<td></td>
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</tbody>
</table>
the present article. Conversely, pairs such as long-haired cats/cats with long hair, French une jeune fille/lune fille jeune, both meaning ‘a young girl’, Dutch appelboom/appelaar (both meaning ‘apple tree’), etc. are all instances of variation in language use that fall under the scope of alternating constructions as here defined.

3. DIFFERENT TYPES OF ALTERNATING CONSTRUCTIONS

3.1. The onomasiological point of departure

While the definition proposed in Section 2 identifies the necessary and sufficient conditions to capture the essence of the notion of ‘alternating constructions’, following such a broad definition entails that a large number of structures can be identified as alternating constructions. From the large set of alternating constructions thus identified, only a subset constitutes an interesting topic for linguistic research. Given the nature of alternating constructions, it follows that much depends on the choice of a relevant onomasiological starting point for the investigation. If the onomasiological point of departure is not aptly chosen, it is unlikely that a set of alternating constructions can be identified in such a way as to be relevant for linguistic analysis. There is a cline from very broadly construed shared functions to ever more specific functions which seems to correlate with the degree to which an alternation can be considered a worthwhile object of study. If the onomasiological point of departure is defined too broadly, then it is likely that no interesting alternation will emerge for further study. This is due to the fact that there will obviously be quite large differences between the structures considered as alternants, which do not require sustained investigation to be identified. Matters become significantly more interesting, and complicated, if two or more constructions share a more specifically delimited common meaning.

This specific common meaning can in principle be of any kind. In empirical practice, the majority of alternating constructions that have hitherto caught the attention of linguists are constructions that are at some level truth-conditionally equivalent. Other functional aspects, most notably information-structural properties, are often invoked to characterize the functional differences between the two constructions. For example, Goldberg (1995: 91-95) argues that the two aforementioned examples of the English dative alternation, (4a) Paul gave Mary the book and (4b) Paul gave the book to Mary, are “semantically synonymous but not pragmatically”.

Both structures conceptually designate ‘X CAUSES Y to RECEIVE Z’, but a sentence such as (4b) is said to be typically used when the informational focus is on the Recipient argument (Mary), whereas (4a) is typically used when the focus in on the Theme argument (the book). Information-structural differences are also said to obtain between many other alternations defined on the basis of truth-conditional equivalence. For example, for the English particle placement alternation, e.g. (2), the referential givenness of the object NP has been shown to correlate with the occurrence of the alternant where the NP is linearly situated between the verb and the particle, e.g. (2b) (Gries, 2003).

Occasionally, alternating constructions are found that are not only seemingly truth-conditionally equivalent, but also with regard to crucial aspects of their information-structural properties. For example, the constructions involved in the sentence-focus alternation in Dutch, illustrated in (6) (Belligh, 2018, 2020a, 2020b), and in the sentence-focus alternation in Italian, e.g. (10) (Belligh and Crocco, 2022; Belligh et al., 2022), are not only truth-conditionally equivalent, but also identical with regard to their topic-comment structure and focus-background articulation. The relevant differences between the constructions concern other factors, such as the typical referential givenness states of some of the constituents (cf. Belligh, 2018 for a discussion), or the number of syntactic constituents in the sentence (cf. Belligh et al., 2022 for a discussion).

To summarize, meaningful distinctions emerge between alternations defined on a broad onomasiological basis and alternations that have a very specific onomasiological basis as their point of departure. To our knowledge, this issue has hitherto not been explicitly addressed in the literature. It seems that there are currently no explicit criteria to deter-

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4 In Goldberg (1995) the distinction between semantics and pragmatics is defined on the basis of the criterion of truth-conditionality vs. non-truth-conditionality, rather than on the basis of the criterion of grammatically encoded vs. inferred meaning.
mine what can count as a common meaning that is relevant to be investigated for linguistic purposes under the denomination of “alternating constructions”. Such definitions are usually made in an implicit and intuitive manner. The striking thing is that, even without explicit criteria, linguists seem to agree, albeit tacitly, on what constructions are relevant to be grouped together as alternating constructions and thus qualify as constructions that merit further linguistic research. We surmise that one of the driving factors determining which alternations are considered relevant is the degree to which the alternating constructions can be used to convey the type of meaning that has taken pride of place in much research in semantics and pragmatics, most notably truth-conditional meaning. Less typical kinds of meaning such as relational givenness, referential givenness, evidentiality and politeness, are more likely to be studied as factors that possibly drive an alternation rather than being invoked as criteria to define an alternation in the first place. Whether the predominant focus on truth-conditionality as the central kind of meaning is justified depends on several philosophical and metalinguistic assumptions regarding the question what the core aspects of linguistic meaning are.

### 3.2. Conventionality

In addition to the kind of common meaning that forms the basis of the alternation, there are other factors that determine whether an alternation will be considered of particular interest for further study by linguists. In this section, we briefly discuss the importance of conventionality.

One of the hallmarks of human language is creativity. Language users have the ability, drawing on their knowledge of the grammar and the lexicon of a language, their knowledge of the discourse traditions of the communities to which they belong and their knowledge of the world, to coin new expressions, to form new sentences and to introduce new structures into the grammar of a language. Some of these creations become more and more popular over time, become part of what is conventional for a specific language and can eventually become part of the grammatical system of the language. In the context of Integral Linguistics, a useful three-tiered distinction has been put forward to account for this cline of conventionality. Coseriu (1975[1952], 1974[1958]: 46–51) distinguishes three levels of language: the language system, actual language use and an intermediary level of ‘normal language use’. The level of actual language use refers to the individual acts of speaking and writing where creativity abounds and new expressions, sentences and structures are incessantly introduced by language users. The language system refers to the core system of a language, including the systematic grammar and structurally encoded semantics of words and phrases in the lexicon which constitute the primary resource language users draw upon in individual acts of language use. Normal language use designates an intermediary level of language which allows us to take into account linguistic facts that go beyond the finite set of features that belong to the core language system. Importantly, between individual acts of language use and the core language system, traditional – so-called ‘normal’ – realisations of language use can be observed. One of Coseriu’s examples to illustrate this is the Spanish vowel system. On the level of the phonological system, there are only five oppositional vowel phonemes in Spanish, i.e. /a/, /e/, /i/, /o/, and /u/, but speakers of Spanish ‘normally’ realise the first /e/ in a word like verde (‘green’) as an open vowel and the second /e/ as a closed vowel ([vɾeðe]). Any other realisation would be possible and understood by hearers (as long as it remains within the systematic phoneme boundaries), but it would not be considered ‘normal’ (Kabatek, 2020: 128). With regard to lexical semantics, the role of normal language use can be illustrated by taking into account the normal meaning of compounds, i.e. the conventionalised interpretation among the members of a speech community which should not be confused with the language-specific structurally encoded semantics of the compound. It is, for instance, a matter of normal language use that the German compounds Goldwaage and Straßenhändler are generally used to refer to a ‘balance to weigh gold’ and a ‘street vendor’, respectively. In accordance with the systematic German word formation rules, these compounds could just as well be used to refer to a ‘balance made of gold’ or a ‘person who deals in streets’. Alternative readings such as these are not ruled out on the basis of the corresponding word formation rule in the German language system, even if they might be exceptional and considered highly creative (Willems, 1994).

With regard to the study of alternating constructions it stands to reason that an alternation will be of greater interest to linguists if both alternants belong to the level of normal language use rather than to the level of occasional language use. Consider again the English genitive alternation in (3). Both types of genitives are not only grammatically correct, but they both belong to a highly conventionalized, ‘normal’ way of expressing this relation in English. On the other hand, one can think of alternations between a highly conventionalized way of saying something and a way of expressing that is definitely grammatical, and hence allowed by the language system, but not part of the level of normal language use. Consider example (11). Whereas (11a) is the conventional, normal way of expressing the fact that a person had a haircut, (11b) is a possible way to convey the same meaning but it does not constitute an instance of normal language use. Although the examples in (11) definitely qualify as a case of alternating constructions, it is less likely that they will...
become an object of study for linguists compared to the alternation between two or more alternants that are all considered part of normal language use.₅

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<table>
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<tbody>
<tr>
<td>a.</td>
<td>I had my hair cut yesterday.</td>
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<tr>
<td>b.</td>
<td>I had my hair made shorter yesterday.</td>
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### 3.3. Constructions in their own right vs. allostructions of a constructeme

#### 3.3.1. Structurally encoded and underspecified semantics vs. pragmatics

Within the category of alternating constructions that are interesting for linguistic research, i.e. those alternating constructions that have a sufficient degree of conventionality and that are identifiable by relying on a relevant onomasiological point of view, further distinctions need to be drawn. At least two qualitatively different types of alternating constructions need to be distinguished. In order to draw this distinction we will rely on the account of structurally encoded, underspecified meaning vs. pragmatically inferred senses as it has been developed in Integral Linguistics (Coseriu, 1974[1958], 1975[1962], 1985, 1987, 1992, 2001, 2007; Willems, 1994, 1997; Kabatek, 2000; Coene, 2006; Van der Gucht et al., 2007; Willems, 2011, 2012; Willems and Munteanu, 2021, among others). The distinction between structurally or grammatically encoded meanings and pragmatically inferred senses figures prominently in various linguistic frameworks, including, but not limited to, Neo-Gricean Pragmatics, Relevance Theory, some branches of Cognitive Linguistics, and Integral Linguistics. Although noteworthy similarities between the aforementioned frameworks can be pointed out, a number of conceptual distinctions are characteristic of the specific perspective on the semiotics-pragmatics interface adopted in the framework of Integral Linguistics (cf. Belligh and Willems, 2021 for a discussion).₆

According to Integral Linguistics, and in line with some of the basic insights of Saussure (Willems and Belligh, 2022), linguistic signs considered at the level of the language system have an indefeasible, structurally encoded and underspecified (‘indeterminate’) meaning that is established in relationship to other linguistic signs in language-specific systematic paradigms, both in the lexicon and in the grammar. By virtue of their structurally encoded and underspecified meanings (semantics proper), linguistic signs can be used to convey various senses (the domain of pragmatics). Pragmatic senses are constructed by language users on the basis of their knowledge of the structurally encoded and underspecified meanings of linguistic signs, which are enriched by means of general world knowledge, general inferential capacities and knowledge of discourse traditions (Coseriu, 2007). The aspects of meaning that are considered part of semantics on the level of the language system are only those aspects that are indefeasible, viz. that part of meaning that cannot be cancelled by changing the context of use (cf. Coseriu, 1992: 194). By virtue of being non-defeasible, the structurally encoded part of linguistic meaning corresponds in a strictly one-to-one fashion to the occurrence of a linguistic sign proper, viz. a sign with an indissoluble bond between meaning and form in the original sense of de Saussure (1968[1916]: 251-276).

Consider, for example, the English preposition over. The word is found with various senses in several contexts of usage, such as ‘on the other side of’ (Arlington is over the Potomac River from Georgetown), ‘complete’ (The game is over), ‘focused attention on’ (She thought over the problem) and ‘control’ (She has a strange power over me). While each of these senses aptly characterizes one of the possible uses of the preposition and can be considered, by virtue of their conventionality and frequency, to belong to normal language use, they nevertheless remain cancellable because they are dependent on the varying contexts. In Integral Linguistics, the following, indefeasible, structurally encoded and underspecified meaning on the level of the language system has been proposed for over: ‘positioning of X vis-à-vis a reference point Y which is inferior to X’ (Van der Gucht et al., 2007). This structurally encoded meaning cannot be cancelled by changing the context. If one changes a trait of the structurally encoded meaning, for example, from ‘inferior’ to ‘superior’, there is an accompanying change in linguistic form, resulting in the use of the English preposition under instead of over. In a similar vein, Coseriu (1990 [2000]: 28-29) argues that the indefeasible, underspecified and structurally encoded meaning of the verb climb only specifies ‘on a vertical or inclined plane’ (not ‘up’ nor ‘down’) and ‘with effortful use of extremities’ (not necessarily ‘with limbs’). This structural semantic definition should be distinguished from the various instantiations of the verb in normal language use, where features such as ‘ascending’ and ‘clambering’ are

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₅ We thank an anonymous reviewer for providing us with this example.
₆ It is important to note that we use the terminological pair ‘semantics-pragmatics’ here only to refer to the distinction between grammatically encoded and inferred meaning, and not the distinction between types of meaning on the basis of the criterion of truth-conditionality. These two different ways of carving up the broad spectrum of linguistic meaning are not co-extensive, but on the contrary orthogonal to each other, cf. Ariel (2010), Belligh & Willems (2021), and De Vaere et al. (2020) for a discussion.
adequate to characterize specific salient senses of the verb. The features that Coseriu proposes for the paraphrase of the structurally encoded meaning of the verb are not derived from its normal and/or prototypical sense(s) in discourse but established with a view to capture the unitary, underspecified structurally encoded meaning that licenses prototypical and non-prototypical senses alike.

3.3.2. Structurally encoded and underspecified semantics vs. pragmatics on the clausal level

In Integral Linguistics, words are considered to pair a linguistic form with a structurally encoded and underspecified meaning. Recent work that has sought to expand Integral Linguistics with insights from Construction Grammar (Coene, 2006; Coene and Willems, 2006; Willems and Coene, 2006; Belligh, 2020a, Belligh and Crocco, 2022) has emphasized that clausal constructions, too, can only be considered proper form-meaning pairings in the Saussurean sense if they have a structurally encoded, indefeasible meaning. Clausal constructions proper should therefore be distinguished from syntactic structures that occur with a number of senses identifiable on the level of normal language use while lacking a structurally encoded semantics of their own on the level of the language system. Under this view, many meanings that have been identified in constructional analyses on the clausal level are, upon closer scrutiny, analyzable as the result of the interplay of the structurally encoded semantics of the verb, the structurally encoded semantics of the other lexical elements in the clause, such as nouns and prepositions, world knowledge, and the context of usage. For an illustration of how constructional meanings on the clausal level are not necessarily structurally encoded meanings, consider the various English syntactic structures in (12), taken from the British National Corpus.

12  a. An aide sent the letter to divorced mother-of-three Mary Hopkins.
b. Three youths threw a petrol bomb against an outside wall.
c. Ellie carefully unpicked, altered, moved all the tiny buttons that ran down the back.
d. He kicked the wreckage aside, and ran into the empty engine room.
e. Constance cycled home from the Hall with her head in the clouds.
f. The raiders escaped with cash, jewellery and electrical equipment.

The events expressed in these sentences all involve some kind of ‘transfer’ and the sentences can thus be said to constitute alternative means to express the general meaning ‘transfer’ in English. For example, both (12a) and (12e) express a transfer, viz. of a Theme that is the object of the clause and of an Agent that is the subject of the clause, respectively. However, this transfer meaning cannot be considered the structurally encoded semantics of all of the constructions in (12), notwithstanding the common denominator ‘transfer’. This is reflected in the different argument structures of the sentences. Whereas (12a-b) involve three arguments, (12c-d) involve two arguments and (12e-f) only one argument. Thus it turns out that ‘transfer’ is not associated with a specific number of clausal arguments and hence is not restricted to a specific argument structure format. Furthermore, while the structure in (12a) might be construed as a proper construction in its own right that provides the form of a three-place argument structure with the structurally encoded meaning of ‘transfer’ (cf. Goldberg, 1995, 2002, 2006), the argument structures in (12b-f) are clearly not systematically dedicated to conveying ‘transfer’, not even with eventive verbs, as illustrated in (12b’-f’). The function ‘transfer’ is but one of the possible functions the two-place and one-place argument structures instantiated in these sentences can express. The multifunctionality of the structures entails that they cannot be considered structures that are in any structural sense committed to expressing a transfer, which is only one possible use among many other possible uses.

12  b’ [He] held her shaking body against the tree trunk and stared into her eyes. (BNC)
d’ She stood with her hand on the door jamb and surveyed the wreckage. (BNC)
f’ Japanese companies experimented in the Antarctic with electrical equipment. (BNC)

The distinction between constructions with a structurally encoded and underspecified meaning of their own and syntactic structures that are merely used to convey pragmatic senses on the level of normal language use for which there is no corresponding structurally encoded constructional meaning in the language system, has far-reaching consequences. When the distinction is applied to the study of alternating constructions, at least two types of alternating constructions need to be distinguished, with the first type having two subtypes.
3.3.3. Alternating constructions in their own right

The first type of alternating constructions consists of two or more constructions that converge on a specific meaning or function which they both can convey, but without the two or more constructions sharing a common underlying formal template and a common structurally encoded semantics. This type of alternating constructions is when the constructions involved in the alternation are not sufficiently similar so as to qualify as variants or instantiations of a common underlying, more abstract or more “schematic” (cf. Hilpert, 2019: 161) construction. This is arguably the most common type of alternating constructions and it moreover corresponds to the standard point of view adopted in mainstream Construction Grammar to analyze alternating constructions. According to this point of view, every construction involved in an alternation has its own form and meaning and must be understood in its own right, while the alternation between the constructions is assumed to be an epiphenomenon that merits no independent status in the grammatical description of the language under scrutiny (cf. Langacker, 1991; Goldberg, 1995, 2002; Gries and Stefanowitsch, 2004).

Typical examples can be found in the Dutch and Italian sentence-focus alternations, e.g. (6) and (10). In both cases, we find several both formally and functionally quite heterogeneous structures that can be used to express a common meaning or function, i.e. ‘sentence-focus’ or ‘theticity’, but which are not to be considered as variants of a more general, underlying construction. In Dutch, e.g. (6), one finds a construction with canonical subject-verb word order, which is only marked prosodically, a construction that is introduced by the adverbial element er and that has an inverted syntactic verb-subject order, a construction that is characterized by a syntactic cleft structure, and a construction that is introduced by a perception verb and followed by a complementizer clause. In Italian, e.g. (10), one finds a construction that is marked by its specific syntax, with inverted verb-subject order and a biclausal non-prototypical cleft that is introduced by the preform ci. Stipulating a formal template at the basis of formally very different constructions such as these is bound to result in a template that is formally nondescript and hence vacuous. Also regarding the meaning of the constructions involved, there is no reason to assume that there is a general construction underlying the various Dutch or Italian sentence-focus examples, respectively. The only two functions that have hitherto been ascribed to all of these constructions, i.e. ‘theticity’ and ‘sentence-focus’, have turned out to be only two among many other possible information-structural uses of the various constructions in both languages and hence pragmatic senses on the level of normal language use rather than the structurally encoded semantics of the constructions on the level of the language system (Belligh, 2020a, 2020b; Belligh and Crocco, 2022). There is therefore no indication of any structurally encoded semantics that would be shared by all the heterogeneous alternating constructions involved in this alternation in languages such as Dutch and Italian.

While it is clear that the alternating constructions in (6) and (10) are not variants of an underlying construction because they do not share a common structurally encoded semantics, it remains an open question as to what kind of constructions exactly are involved in syntactic structures that are multifunctional such as those illustrated in (12). Type 1 of alternating constructions might involve two (or more) constructions with each a structurally encoded semantics of their own or two (or more) syntactic structures that merely combine constructional forms with pragmatic senses. Even for hallmark examples such as the English Double Object construction, e.g. (4a, 12a), and the English Prepositional Object construction, e.g. (4b), which have been analyzed as full-fledged constructions with a clearly specified formal template and a grammatically encoded constructional meaning of their own in Construction Grammar (cf. Goldberg, 1995, 2002, 2006; Hilpert, 2019, among others) the matter is not settled. It has been argued that the alleged grammatically encoded meaning of the English Double Object construction, viz. ‘successful transfer’ or ‘X causes Y to receive Z’ (Goldberg, 1995, 2002) is an instance of defeasible pragmatics on the level of normal language use rather than of structurally encoded semantics on the level of the language system (Kay, 1996; Coene and Willems, 2006). Kay (1996) points out that the constructional pattern itself does not necessarily convey ‘successful transfer’, which is particularly evident with other verbs than the prototypical verb give. According to Kay (1996), a sentence such as I’ll peel you an orange can have a number of readings, only one of which involves the conveyance and reception of an orange. The sentence can also convey the wish to see or show how a new orange peeler works (Kay, 1996: 11-12), which does not involve that someone receives, or is intended to receive, an orange.\(^7\) Integral Linguistics can easily accommodate both Goldberg’s and Kay’s account, with the qualification that structurally encoded semantics and defeasible pragmatics must be kept apart. While the ‘successful transfer’ meaning arguably is a highly entrenched pragmatic sense of the Double Object construction on the level of normal language use, in particular with verbs that themselves designate the physical transfer of an object such as give, Kay’s observation reminds us that the Double Object construction does not itself structurally encode the ‘successful transfer’ meaning on the level of the language system. The construction’s structurally encoded meaning might potentially amount to a transfer event in a decidedly more abstract, underspecified sense that underdetermines the various readings which the construction can take on in different contexts of use, or even have no struc-

\(^7\) Incidentally, we have noticed that Kay’s (1996) account is regularly endorsed by native speakers when asked for their opinion about double object sentences in informal conversations, but we have not pursued this matter systematically.
The distinction that is established here between the two kinds of constructions that can be involved in type 1 of alternating constructions reveals an important difference between Mainstream Cognitive Construction Grammar and Integral Linguistics. Although both Integral Linguistics (Coseriu, 1987, 1992, 2000[1990], 2001) and Cognitive Construction Grammar (Langacker, 1991; Goldberg, 1995, 2002, 2006) call for the investigation of constructions in their own right, the specification “in its own right” has a different purport in the two approaches (cf. Willems, 2011 for a discussion). In Cognitive Construction Grammar, this specification amounts to taking into account all the uses of a construction rather than focusing on a single meaning applied to define the alternation. These uses are considered to be of a general conceptual nature, rather than being specific to a language system or to a particular construction. In Integral Linguistics, on the other hand, studying a construction in its own right entails determining whether it has a structurally encoded, underspecified and indefeasible semantics of its own. Whereas Integral Linguistics thus differentiates between those aspects of meaning that belong to the level of the language system and those that belong to the level of normal language use, Cognitive Construction Grammar adopts a usage-based perspective and lumps together both levels.

3.3.4. Allostructions of a constructeme

The second type in our typology of alternating constructions is when two or more alternating constructions are not themselves linguistic signs proper in the Saussurean sense, but are best conceptualized as variants, instantiations or “allostructions” (Cappelle, 2006; Perek, 2015; Zehentner, 2016, 2018; De Vaere et al., 2018, 2020, 2021), of an underlying construction or “constructeme”. This underlying construction has an underspecified form and an underspecified structurally encoded meaning of its own and thus qualifies as a linguistic sign proper, in terms of a language-specific bilateral form-meaning pairing, in contrast to the allostructions which are variants, or instantiations, of the underlying construction. This second type of alternating constructions was originally proposed as a possible way to analyze the English particle placement alternation, e.g. (2), by Cappelle (2006). It has subsequently been successfully applied in the study of the English locative alternation, e.g. (1) (Perek, 2015), the dative alternation in present-day English, e.g. (4) (Perek, 2015), the dative alternation in Middle English (Zehentner, 2016, 2018), the English genitive alternation, e.g. (3) (De Vaere et al., 2020) and the German ditransitive alternation, e.g. (5) (De Vaere et al., 2018, 2021). In all these cases, the alternating constructions involved are both formally and functionally closely related, to the extent that the relation warrants postulating an underlying constructeme, or general construction, as their common basis. Conceptually, the idea of two or more allostructions with an overarching general construction was further elaborated by Perek (2015), who also addressed the schematic meaning of the general construction, an issue left unaddressed in the seminal contribution of Cappelle (2006), which only focused on the underspecified formal characteristics of the general construction. For instance, Perek (2015: 162) argues that the meaning of the general construction underlying the English locative alternation, e.g. (1), amounts to a general event schema that can be paraphrased as ‘X ACT ON Y’ and ‘X ACT ON Z’.

Recently, the theoretical concept of several allostructions with a general construction at their basis has conceptually been further fine-tuned by De Vaere et al., (2020) in a proposal that aligns the meaning of the general construction with structurally encoded semantics on the level of the language system and the meaning of the allostructions with pragmatically inferred senses on the level of normal language use. According to this proposal, only the constructeme has a proper linguistic sign status as a construction with an indefeasible, structurally encoded and underspecified semantics that amounts to a Saussurean form-meaning pairing, whereas the allostructions are considered variants of one and the same linguistic sign. Pragmatic uses of the various alternants and regularities that govern the choice for one rather than the other alternant are accommodated at the level of the allostructions. This makes it possible to distinguish the underlying underspecified meaning of the general construction, taken as a Saussurean form-meaning pairing in the language-specific grammar, from its allostructions. Table 1 provides an overview of the features of the two types of alternating constructions that we have distinguished.

The epistemological challenge to tell these two types of alternating constructions apart is a task in itself, but one that may very well be impossible to sidestep. Type 1 and type 2 of alternating constructions can be distinguished by determining whether the constructions involved can be said to share the same indefeasible, structurally encoded semantics and a formal template that specifies a sufficient number of relevant morphosyntactic characteristics, while the functional and formal differences between the alternants can be situated on the level of inferential pragmatics and the level of default formal instantiation. The criteria that are adopted to determine the presence of a structurally encoded semantics vary from framework to framework, but the criterion of non-defeasibility seems to be a particularly promising and methodologically transparent way to address this issue (cf. Belligh and Willems, 2021 for a discussion). By relying on the same criterion, it is possible to distinguish between alternating linguistic signs proper (in the Saussurean sense)
and alternating structures with conventional senses on the level of normal language use within the first type of alternating constructions where two or more constructions in their own right are involved.

In addition to the already established two types of alternating constructions, there is a distinction to be drawn between those aspects of alternating constructions that are governed by several factors that are more likely to correlate with one rather than the other alternant and aspects of alternating constructions where an intuitively accessible rule prescribes the presence or absence of one of the alternants. In order to draw this distinction, we rely on the conceptual distinction between grammatical rules and regularities of language use, which we turn to in the next section.

4. GRAMMATICAL RULES, REGULARITIES OF LANGUAGE USE, AND ALTERNATING CONSTRUCTIONS

4.1. Grammatical rules and regularities of language use

Although it is far from uncontroversial in contemporary linguistics to do so, we maintain that there is a principled distinction between the regularities that can be found in actual language use and the grammatical rules that delimit what is possible in a given language. Language is an intersubjective, socially shared resource for language users. However, it is important to observe the distinction between the rules that constitute the systematic paradigms of a language system and the traditional, ‘normal’ realisations of these rules in specific settings of language use. While Coseriu (1975[1952]) captures this difference by introducing the level of normal language use in-between the levels of the system of grammar and the (to some extent always unique) instances of actual language use (see Section 3.2), Itkonen (1978, 1983, 2003) makes a similar point by differentiating between ‘rules’ and ‘regularities’. Rules and regularities have a different ontological, epistemic and psychological status and therefore require to be studied in their own right with the proper methodological toolkit (cf. Willems, 2012, 2014; Zlatev and Blomberg, 2019). For our purposes, it is important to bear in mind that regularities are understood in the phenomenological sense, viz. as phenomena that are recurrent in our conscious experience throughout time in a structured way. The presence or absence of a regularity is thus determined on the basis of (co-)occurrence and frequency of phenomena. This broad conception of the concept of regularity entails that it can be taken to precede any division of our conscious experience in a natural or material world and a cultural or mental world. We therefore surmise that all kinds of regularities can be attested in both types of worlds. For example, in the inanimate world it is a strong regularity that objects without any form of physical support or force exerted on them fall on the ground. In the field of the behavioral sciences it is a strong, but not absolute, regularity that the presence of heat is correlated with the increased likelihood of aggressive human behavior.

By contrast, rules (or ‘norms’ in Itkonen’s terminology)8 can only be identified with regard to phenomena that pertain to the human mind and human society. Rules are inherently social and prescribe what should be the case and prohibit what should not be the case. Rules cannot in principle be determined on the basis of occurrence, non-occurrence, frequency or non-frequency. This is due to the fact that agents can always trespass rules, without this impacting the existence of the rule, and to the fact that rules in principle allow for indefinite instantiations of new correct behaviors that

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8 For the sake of clarity, we prefer to use the term ‘rules’ rather than ‘norms’ in this section to refer to what defines ‘correctness’ in language. As we will discuss, the crucial notion of ‘correctness’ relates primarily to the level of the language system and not the level of ‘normal language use’.
have not been displayed before. Rather than relying on occurrence and non-occurrence, rules are thus dependent on an intuitive knowledge of what is ‘correct’ or ‘right’ (Itkonen, 1978, 1983, 2003; Zlatev and Blomberg, 2019; cf. Coseriu, 1985). For example, the fact that in a certain society murders do or do not take place, does not tell us in principle anything about whether there are rules in that society that prohibit murder. The only way to determine whether such rules exist in that society is to rely on an intuitive understanding of the social imperatives involved. Similarly, the fact that people in practice make all kinds of deductions that are logically invalid and therefore ‘incorrect’ does not invalidate the existence of the proper rules of logical deduction themselves, which are the object of an intuitive understanding of correctness (Itkonen, 1983).

We consider the distinction between rules and regularities to be not merely an interesting conceptual distinction, but key to a comprehensive understanding of language (cf. Zlatev and Blomberg, 2019). The distinction should therefore also be taken into account in empirical linguistic research. Telling examples of the importance of the distinction between rules of grammar and regularities of language use can easily be found in the field of lexical semantics. Consider for example the Dutch lexeme *watertoren* (‘water tower’). Understanding fully the semantics and pragmatics of this word involves both understanding the grammatical rules that govern the correct uses of the word and the regularities of use pertaining to its senses on specific occasions. The word has an extremely regular rule-governed use, i.e. when *watertoren* is used to designate a ‘water tower’, viz. an elevated structure built by humans intended to ensure enough hydraulic pressure on the water for use in cities and villages. As a matter of fact, this is the only attested use of the word that is found after conducting a corpus investigation of all occurrences of the word (n = 633) in the *SonaR* Corpus, which is the largest reference corpus of contemporary Dutch.

The rules of grammar specifying the correct use of *watertoren* also license other uses that are not directly attested in usage (at least not in the corpus), but that are nonetheless entirely correct from a rule-governed perspective. This is the case when *watertoren* is used to refer to a tower composed entirely of water, which is perfectly acceptable in the setting of a fairy tale, e.g. *De tovenaar deed het water bewegen en toverde uit het water een watertoren tevoorschijn* (‘The wizard made the water move and conjured a water tower out of the water’). Our personal intuitions on the correctness of this example were confirmed by the finding that this sentence was rated as ‘fully correct’ on a 5 point scale with the values ‘fully correct’, ‘correct’, ‘unclear’, ‘incorrect’ and ‘fully incorrect’ by five native speakers of Dutch without any training in linguistics. The absence of this particular sense of *watertoren* in the corpus is thus best captured by establishing a very strong regularity in the usage of the word in the sense of ‘water tower’, rather than by invoking a rule that would prohibit the non-regular sense or, alternatively, prescribe the sense found in the corpus as the only possible sense, which would be unwarranted, given the correctness of the constructed example.

Furthermore, in daily-life language use *watertoren* is occasionally wrongly used to refer to a lighthouse, which is called a *vuurtoren* (lit. ‘fire tower’) in Dutch. The first author of this article has noticed this mistake several times in informal conversations with friends and family. On all occasions the speakers were adult native speakers who know both words and concepts and who have the required knowledge to tell the two words apart. Note that the native speakers who produced this mistake recognized themselves that they were not using the correct word. The use of *watertoren* to refer to a lighthouse is not sanctioned by a rule of Dutch and this is also evident for the language user who produces the mistake. Finally, there are countless theoretical possibilities to use *watertoren* that are not allowed by the rules of Dutch and that are also not attested in actual usage. In sum, there is a double dissociation between rules and regularities that is relevant to take into account in linguistic research. To arrive at a comprehensive picture of language, it is necessary to determine both what is correct (as stipulated by linguistic rules of systematic grammar) and what actually occurs and what is either frequent or infrequent (as captured by regularities of language use).

It is important to add three caveats. First of all, shady areas certainly exist, where it is unclear whether one is merely dealing with a strong regularity of language use or whether there is also a rule involved. However, a gradual distinction between two concepts is a distinction nonetheless. The fact that some regularities of language use are on the verge of becoming linguistic rules and that some rules are decaying to strong regularities does not invalidate the important distinction between rules and regularities, just like the fact that there are many shady areas between ‘clearly poor’ and ‘clearly rich’ does not invalidate the distinction between ‘poor’ and ‘rich’ (Itkonen, 1978, 2003, 2006). Second, rules arguably emerge diachronically out of what are first mere regularities in language use, so diachronically the distinction between regularities and rules is definitely not stable. However, for any given synchronic state of the language, and for any specific language user, the distinction is real.9 Third, the specific status of socially shared (‘intersubjective’) lin-

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9 The historical evolution from regularities into rules can be compared to the process of generalized conversational implicatures that turn into structurally encoded semantics over time. Additionally, the distinction between structurally encoded semantics and generalized conversational implicatures is another example of an important distinction in linguistics that has gray areas in between two clear ends of a spectrum (cf. Levinson 2000 for a discussion).
guistic rules differs with regard to the systematic aspects of grammar and normal language use, two aspects that are neatly distinguished in Integral Linguistics (Coseriu (1975[1952]), 1987, 1992, 2001). Simply put, not observing rules of grammar results in ‘incorrect’ utterances, whereas not observing traditions of normal language use results in ‘unusual’, yet still ‘correct’ utterances. In the next two sections, we are primarily interested in alternating constructions in relation to rules identified on the level of systematic grammar.

4.2. Rules, regularities and alternating constructions

In addition to its obvious relevance for fields of study such as lexical semantics, the distinction between linguistic rules and regularities of language use also has a key role to play in the study of alternating constructions. Given that rules add something to a phenomenon that goes beyond its mere presence or absence, viz. intersubjectively shared constraints that sanction – either license or prohibit – the occurrence of the phenomenon, it is crucial to distinguish cases where this intersubjective component is present from cases where it is absent also when comparing alternating constructions. Taking this social aspect of rules into account leads to the distinction between two types of constructions that can be involved in an alternation, viz. those that differ from one another only in the sense that certain semantic and/or pragmatic characteristics typically occur with one but not the other alternant, and those constructions that differ from one another in the sense that in certain situations only one of the alternants can be used, whereas the other alternant simply is grammatically incorrect.

Determining rules and regularities is necessary to proceed from the onomasiological starting point for the study of an alternation to an adequate identification and investigation of the constructions that partake in the alternation. Initially, there often does not seem to be any rule that either prescribes or proscribes one of the alternants to express the common meaning. In fact, in order to have a proper alternation in the first place, the use of every alternant must be correct according to the systematic rules of the language, otherwise there would simply be no alternation. However, while accounting for the alternation, some of the variation may turn out to be determined by rules, whereas other aspects of the variation are due to regularities. The contexts in which two or more structures are sanctioned by rules of grammar must therefore be clearly distinguished from those in which those rules only allow for one structure to actually occur.

Consider again the Dutch sentence-focus alternation. The alternating constructions involved are sometimes only differentiated by regularities of language use, whereas in other cases there are grammatical rules proper that prescribe which of the variants must be used. On the one hand, there is the strong, in some corpora even absolute, regularity that for functionally ‘identifiable’ and formally ‘definite’ subject NPs the construction with canonical subject-verb order but marked prosody (e.g. 13a) is preferred over the construction with syntactic inversion and the insertion of the adverbiaal particle er (e.g. 13b) (Belligh, 2018). However, despite the strong preference of language users for alternant a), both alternants are grammatically correct.

<table>
<thead>
<tr>
<th></th>
<th>Het</th>
<th>GEVAAR</th>
<th>van</th>
<th>een</th>
<th>nieuwe</th>
<th>depressie</th>
<th>dreigde.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>The danger of a new depression.</td>
<td>‘There is a danger of a new depression.’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Er dreigde het gevaar van een nieuwe depressie.</td>
<td>There loomed the danger of a new depression. ‘There is a danger of a new depression.’</td>
<td></td>
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On the other hand, when proper names figure as the morphosyntactic subject, there is no longer merely a regularity that captures the choice for one variant rather than the other, but a grammatical rule simply excludes many of the alternants. The construction with canonical subject-verb order and marked prosody, e.g. (14a), is acceptable with proper names, whereas the construction with syntactic inversion and the insertion of the adverbiaal particle er, e.g. (14c), as well as many other alternants that enter into the Dutch sentence-focus alternation are ungrammatical when proper names figure as the morphosyntactic subject. If, on the other hand, an indefinite NP is used to refer to the same referent, both constructions can be used interchangeably, e.g. (14b) and (14d) (cf. Belligh, 2018 for a discussion).
In the analysis of the English dative alternation, too, both grammatical rules and regularities of language use are involved. In addition to the many regularities that link various semantic and pragmatic traits to either the Double Object Construction or the Prepositional Object Construction, for example the information-structural differences that can be found between the two constructions (cf. Section 1), there are cases where only the use of the Prepositional Object Construction is grammatically correct. This is in particular the case with verbs such as donate, distribute and communicate, e.g. (15) (cf. Levin, 1993; Goldberg, 1995; Yaguello, 1997). The reason for this constraint has been a matter of controversy. Since Levin (1993), it has been customary to assume that the Double Object Construction is disallowed with latinate verbs. This account has been criticized by Yaguello (1997), who demonstrates that there are many counterexamples to the so-called latinate restriction. She instead proposes an aspectual constraint, according to which perfective verbs cannot occur in the Double Object Construction, irrespective of their latinate base. Latinate verbs “already contain an aspectual prefix inherited from Latin or French which makes them perfective” (Yaguello (1997: 100), but compare also sentences with perfective English phrasal verbs such as (16) (Yaguello, 1997: 97-98). Although there is considerable discussion among linguists as to how best to account for the restriction, the restriction itself is rule-governed rather than being merely a regularity of language use.

4.3. Methodological strategies to identify rules and regularities

Given that regularities are determined by occurrence and frequency, whereas rules correspond to an intuitive understanding of grammatical correctness, both phenomena require to be studied in their own right and with adequate methodological tools. The quantitative approach to alternating constructions that predominantly relies on corpus research (e.g. Gries, 2003; Gries and Stefanowitsch, 2004; Bresnan, 2007; Bresnan et al., 2007; Bresnan and Ford, 2010; Colleman, 2009; Wolk et al., 2013; Geleyn, 2017; Gries, 2017, among many others) is obviously well-suited to investigate the factors that are regularly associated with the various alternants. It is only by means of this kind of corpus
research that linguists are able to study in sufficient detail the regularities within the confines of what is sanctioned by the rules of grammar proper. However, by solely relying on corpus studies it is impossible to establish the distinction between rules of language and regularities in language use. As argued in Section 4.1, the absence of an alternant in a corpus can be due to being infrequent, or even extremely rare, or to a grammatical rule that prohibits the alternant to occur. In order to establish both what actually occurs in language use and what is grammatically possible, corpus studies must therefore be supplemented by judgments about correctness based on native-speaker intuition. In order to adequately distinguish between rules and regularities in the study of alternating constructions, we therefore argue for a methodological combination of corpus studies and speaker judgments of the correctness of alternants in specific contexts of use.

Researchers who adopt a quantitative corpus perspective often regard the use of judgments of correctness with some suspicion. Such judgments have the flavor of being non-empirical and they carry with them the risk of merely reflecting a researcher’s idiolect or preferences. However, both rules and regularities of language use can be studied from a quantitative and experimentally controlled perspective. Over the past 20-odd years it has been widely acknowledged in formal approaches to grammar that judgments can and should be collected from an experimentally controlled perspective, as is the case for any other form of psychological data collection (Schütze, 1996; Cowart, 1997; Gibson and Fedorenko, 2013; cf. also Meibauer and Steinbach, 2011, with a focus on the semantics/pragmatics interface). The recommendations in these publications include having a sufficiently large number of participants, a wide range of experimental material to rule out idiosyncratic properties of individual experimental items, the use of participants which are unaware of the research questions and hypotheses, the inclusion of appropriate distractor material so that the experimental manipulations are not obvious to the participants, and the use of different orders of presentation to different experimental participants as to avoid effects of presentation order. If the guidelines established in the aforementioned publications are properly implemented, then judgments about correctness can be collected with a rigor similar or close to that in collecting data regarding occurrence and frequency that feature in corpus studies.

Conversely, it has been argued that in many cases a quantitative investigation of correctness would turn out to be trivial (Itkonen, 1978, 1983, 2003). Take the so-called “clear cases” described by Itkonen (1978, 2003): no matter what one finds in terms of conflicting empirical evidence, speakers sometimes know with complete certainty what is correct and what is incorrect. Itkonen maintains that if many people would claim that (17b) is correct and (17a) is incorrect, this could rationally only lead to the conclusion that those people are all mistaken, since any competent speaker of English, including the researcher, should immediately recognize (17a) as correct and (17b) as incorrect. Even if one does not readily accept Itkonen’s argument and acknowledges that occurrence in language use and several alternative judgments of correctness might overrule strong intuitions on behalf of the researcher in some cases, it is still possible to draw a relevant epistemological insight from Itkonen’s argument. The need to adopt a quantitative perspective in the collection of judgments of correctness is far more important when the researcher is not entirely sure about what is correct than when she or he is entirely convinced of what is correct. Furthermore, in all cases that have some shade of non-clarity for the researcher, e.g. (18), quantitative investigations from an experimentally controlled perspective remain necessary to determine what is allowed and what is not by the rules of a given language.10

17  a.  The man saw the child.
    b.  *Man the saw child the.

18  What do you wonder who saw?

Thus, while we argue not to rely on corpus data alone, it is important to emphasize that relying on (quantitative) judgments of correctness alone does not allow to arrive at a comprehensive account of language either. The regularities that characterize language use, and that are found in corpora, are as relevant for linguistics as the rules of grammar proper that determine what is correct and incorrect. Both aspects should be treated on an equal footing in a linguistic account that aims to capture language in a comprehensive way. While language users have strong intuitions about what is correct and incorrect in their native language(s), they arguably do not have similarly strong intuitions about the frequency or

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10 This example has been often described in the literature as being acceptable to a large extent.
infrequency of occurrence of linguistic items in actual language use. Furthermore, being confronted with corpus data that present facts about occurrence and frequency can help to fine-tune intuitive judgments of correctness (cf. Willems, 2012, 2014 for some discussion).

We conclude this section by briefly discussing the claim by Stefanowitsch (2006) that corpora can provide negative evidence of non-occurrence based on raw frequency. According to Stefanowitsch (2006), it is possible to differentiate on the basis of corpus data between constructions that do not occur in a corpus but could have occurred and constructions that do not occur and could not have. This is done by relying on statistical tests which, for example, compare the number of occurrences of a verb in a specific constructional pattern with the overall occurrences of the verb in the corpus. While Stefanowitsch’s (2006) account stands out because of its meticulous corroboration of linguistic intuition by quantitative corpus data, there are two main reasons why his argument does not directly affect the point we have making in this section. First, Stefanowitsch’s line of reasoning is oriented towards the question what verbs can occur in specific clausal constructions. This is a matter of morphosyntax, with possibly, but not necessarily, a semantic and/or pragmatic motivation at the basis. It is doubtful that this line of reasoning can be transferred to the realm of semantics and pragmatics, because in these domains the possibilities of creative, but still grammatically correct, language use are much greater than those found in morphosyntax. Second, even if we take Stefanowitsch’s (2006) argument to be valid, Stefanowitsch himself concedes that a corpus can only allow us “to determine whether an unseen construction is likely to be a possible construction of a language or not” (Stefanowitsch, 2006: 66, emphasis added). The questions whether it is indeed a possible, correct construction and whether the absence of a specific construction is due to a pragmatic, text- or register-related, logical or practical constraint (including a combination of several of these constraints) or to a rule of grammar, can only be answered if we rely on intuitive native speaker knowledge regarding grammatical correctness. Stefanowitsch (2006) actually admits the last point, but he claims that in essence the same problem arises with acceptability judgments. According to him, language users can only judge the ‘acceptability’ or ‘non-acceptability’ of linguistic utterances on an undifferentiated level, without being able to differentiate intuitively between judging whether utterances are ‘grammatically incorrect’ or in principle ‘grammatically correct’ but ‘infelicitous’ or ‘inappropriate’ in a specific context.

On this subject we follow the line of reasoning developed by Coseriu (1985, 1987, 1992, 2001, 2007) and maintain that the differences between ‘correct/incorrect’, ‘congruent/incongruent’, and ‘appropriate/inappropriate’ judgments are not only indispensable distinctions between different types of linguistic judgments, but that they also reflect levels within the knowledge of language that are real to native speakers without any formal training in linguistics. The conceptual pair ‘correct/incorrect’ relates to the grammatical correctness of an utterance, as stipulated by the rules of the grammar of a specific language, for example the constraints regarding the linear order of determiners and nouns in English. The conceptual pair ‘congruent/incongruent’ relates to general principles of human thinking and world knowledge, which account for the fact that a sentence such as I boiled the piano (Coseriu, 1985: xxx) may be said to be ‘unacceptable’ even though it is purely linguistically entirely ‘correct’. The conceptual pair ‘appropriate/inappropriate’ relates to the fact that speaking in certain ways is dependent on what can be expected in certain settings and with regard to the relations between interactants, for example that child-directed speech is only appropriate if it is directed to a child rather than to an adult (Coseriu, 1985, 2007). Coseriu (1985) moreover points out that linguistic ‘correctness’ can neutralize the ‘incongruence’ of an utterance and that ‘appropriateness’ can in turn neutralize both the ‘incongruence’ and the ‘incorrectness’ of an utterance. For instance, forever and a day does not conform to our encyclopaedic knowledge because it is rationally and empirically inconceivable that something lasts longer than eternity. But forever and a day happens to be an idiomatic expression in the English language and its meaning (‘for a very long time’) neutralizes the apparent incongruence. Likewise, the famous sentence Colorless green ideas sleep furiously is incongruent in the sense described above but the sentence is grammatically correct and may moreover be entirely appropriate, e.g. in a poem or a riddle. Finally, une romaine patrouille is incorrect French, but in the famous comic book Astérix chez les Bretons by Goscinny and Uderzo, the phrase is deliberately chosen with the intention of imitating the English language, as a substitute for the correct une patrouille romaine (‘a Roman patrol’), thus rendering the grammatically incorrect phrase appropriate in this particular text.11

11 Apart from our different view on the possibility of fine-tuned judgments by language users that are able to directly assess grammatical correctness, we believe that our position and that of Stefanowitsch (2006) are ultimately very similar. We argued that the discovery of the absence of a given linguistic feature should be supplemented by investigating whether this absence is due to a grammatical rule or not. In a similar vein, Stefanowitsch (2006: 73) claims that “determining significant absence/rareness is just the first step of a linguistic analysis. The second step is to determine the reasons for the significant absence/rareness. This step can be much closer to traditional linguistic argumentation. [. . .] In other words, while I argue against the use of acceptability judgments as a linguistic method, I do not argue against the use of interpretation.”
5. CORRELATION AND CAUSATION IN RESEARCH ON ALTERNATING CONSTRUCTIONS

5.1. Correlation, causation and predictions

The claim that correlation does not entail causation is a claim we consider to be non-controversial. A (statistically significant) correlation simply means that two or more phenomena tend to occur together. The reasons of this co-occurrence can be manifold. First of all, the correlation can be due to what seems to be mere chance. Telling examples, which are often provided in introductory courses to statistics and research methodology, are the strong correlation between the number of people in the USA who drowned after falling out of a fishing boat and the marriage rate in the state of Kentucky ($r=0.9524$), or the strong correlation between the number of people who drowned by falling into a pool in the USA and the number of films the actor Nicolas Cage appeared in ($r=0.66$). In examples such as these, the correlation obtains between causally completely unrelated phenomena. Alternatively, a correlation can be due to a relevant causal relationship between phenomena. Even then it is far from trivial to figure out the details of the causal relationship. There are at least three relevant options. If phenomena A and B are significantly correlated and there is some relevant causality involved, then A might be the cause of B, B might be the cause of A, or a third variable C might turn out to be the common cause of both A and B.

Causality is a contentious issue and it has been hotly debated in the philosophy of science since its very beginnings. We cannot discuss all points of contention in the present article, but we would like to highlight two distinctions that we consider particularly important with respect to the relationship between correlation and causation in the study of alternating constructions. The first distinction is the one between epistemic causality and ontological causality. Epistemic causality, elaborated in its modern form especially in the work of Hempel (1965), is built on the concept of ‘counter-f actuality’, viz. the idea that without a necessary factor a certain event would not have occurred. A relationship between two phenomena A and B is considered to be epistemically causal if B does not occur without A and if A therefore constitutes the necessary and sufficient condition for B to occur. In Hempel’s (1965) approach, A is often conceptualized as a set of initial conditions. The law-like causal relationship that holds between A and B allows scientists to determine the spatiotemporal occurrence of B as a deductive consequence, which is why Hempel’s model is known as the classical ‘deductive-nomological model’. Under Hempel’s view, the mere presence of the counter-factual relationship is sufficient to establish a relation of epistemic causality between two phenomena. Ontological causality, on the other hand, as developed in its modern form in the work of Salmon (1990, 1998), requires that there is also an understanding of how the causal relationship ontologically works before one phenomenon can be identified as the proper cause of another phenomenon. This entails that there must be a basic understanding of causality in terms of an ontological chain of causes and effects that allows us to understand the causation in a way that goes beyond merely observing that there is a counter-factual relationship between the occurrence of two phenomena.

The second important distinction is between absolute and probabilistic causality, which has been mainly developed against the backdrop of epistemic causality (Hempel, 1965). In its absolute form, epistemic causality requires that A is a necessary and sufficient cause for B to occur. In the probabilistic version of epistemic causality, it suffices that phenomenon A increases the likelihood for phenomenon B to occur to count as an instance of causality. The possibility of a probabilistic or stochastic version of causation has given rise to a new model for causation, the so-called ‘inductive-statistical model’. In the natural sciences and especially in the behavioral sciences, the majority of the identified causal effects are probabilistic rather than absolute. For example, in the psychology of learning it has been convincingly established that if two stimuli are presented together to an organism with sufficient frequency, then the chances are high that the organism will extend already existing behavior that was linked to one of the two stimuli to the other stimulus as well, i.e. the process known as classical conditioning. In this case, the co-presence of the two stimuli stands in a probabilistic causal relationship to the organism’s change in behavior, viz. the learning process (De Houwer, 2011).

In order to proceed from mere (statistically significant) correlations to establishing at least some form of causality, it is necessary to have good arguments for the claim that phenomenon A at the very least increases the chances for phenomenon B to occur. The fact that two variables are strongly correlated or even the fact that, due to the existence of a strong and consistent correlation, the occurrence of A makes it possible to predict the occurrence of B, are in themselves no proof of counter-factuality. For example, it is possible in principle to predict to some degree the number of people that swim in the sea on a sunny summer day based on the number of ice creams that are consumed on the beach. However, there is nothing causal in this relationship, since the fact that people consume ice cream does not
increase the chances of people swimming in the sea. Rather, it is the presence of high temperatures and fine weather (and the fact that people are on vacation, etc.) that stand in an epistemic causal relationship to both the number of people that swim in the sea and the number of people that buy ice cream (Gravetter and Forzano, 2012).

5.2. Correlation and causality in research on alternating constructions

In quantitative functionalist approaches to the study of alternating constructions, various probabilistic models have been built on the basis of the established correlations between the alternants and several semantic and/or pragmatic, morphosyntactic, and language-external factors for which attested corpus material is annotated (e.g. Bresnan et al., 2007; Wolk et al., 2013; Geleyn, 2017; Gries, 2017; De Vaere et al., 2018; De Vaere et al., 2021). Such probabilistic models are, as a rule, built in two subsequent steps. First, significant correlations are established between (some of) the alternants and the various factors that have been annotated in a dataset of naturally occurring language. For example, in a series of quantitative corpus studies of the German ditransitive alternation, e.g. (5), De Vaere et al., (2018, 2021) have drawn a sizeable dataset from the Deutsches Referenzkorpus and annotated the following factors for both alternants: animacy, concreteness, definiteness, pronominality, referential givenness, proper-noun-hood, and grammatical number for both the Recipients and the Themes in the two alternating constructions; in addition, voice and the various senses of the verb, the presence of metaphor and topicalization, as well as the geographical variety of the German data were annotated. A logistic regression analysis revealed that traits such as active voice, Recipients that are shorter than Themes, pronominal, individual, given, topicalized, singular and explicit Recipients, and abstract or propositional, indefinite Themes, were all significantly associated with the Indirect Object Construction (with the Recipient argument instantiated as an noun phrase in the dative case, e.g. (5a)). By contrast, traits such as passive voice, concreteness and definiteness of the Themes, the presence of Recipients that are longer than Themes, nominal, collective, dual reference and object recipients turned out to be significantly correlated with the Prepositional Object Construction, e.g. (5b) (De Vaere et al., 2021).

On the basis of the established correlations in a corpus sample, probabilistic multifactorial models take into account various factors and the degree to which these factors are associated with one alternant. This makes it possible to construct a probabilistic model that to a certain extent can ‘predict’, based on the various variables, which alternant will be found in specific contexts. In these probabilistic models, certain phenomena are construed by researchers as independent variables, viz. the annotated factors, while other phenomena are construed as dependent variables, viz. the alternants involved in the alternation, which are the object of study. For example, Bresnan et al., (2007) constructed a probabilistic model of the English dative alternation that can correctly predict 94% of the occurrences of the Double Object Construction and the Prepositional Object Construction in the corpus that was used by the authors to construct the model. When applied to a different corpus than the one that was used to construct the model, the correct predictions still amounted to 93% of the sample (Bresnan et al., 2007). These results convincingly confirm that the factors that have been included as part of the model are systematically correlated with one rather than the other alternant.

The choice to treat the annotated factors as the independent variable and the alternants as the dependent variable in the model is non-statistical in nature and logically precedes the very construction of the statistical model. The opposite way of conceptualizing the model, reversing the independent and dependent variables, would also have been possible. In that case, the alternants would figure as the predictors whereas the annotated features would be the outcome to be predicted. This reversal would, of course, result in the same kind of predictive power. This is due to the fact that statistical multifactorial analysis by itself is “blind” to the presence, absence, or direction of causality. While correlations between constructions and various variables can be adequately described in terms of the predictions made by probabilistic models, this does not entail that one has identified the factors that causally govern speakers’ choices. In order to establish causality, one needs, at the very least, strong indications of counter-factuality (cf. Section 5.1). It could turn out that certain semantic and/or pragmatic, morphosyntactic, and language-external factors influence language users to choose one alternant rather than the other in terms of epistemic causality. It might also happen that the choice for one alternant brings about the semantic and/or pragmatic, morphosyntactic, and language-external features of that alternant. Correlations that have been established in inherently observational corpus studies and predictive probabilistic models that draw on this type of data cannot form the basis to infer any type of causality. Therefore, utmost caution is required in referring to causal relationships when alternations are studied from a purely observational, correlational and probabilistic approach. However, it is common in probabilistic corpus studies to present the findings in such a way that they are suggestive of causation. Yet, this is not only imprecise, but also misleading, as the assumption of causation is not substantiated. There is thus a risk that important facets of the object of study are obscured rather than clarified.
5.3. Methodological strategies to deal with the challenge

In order to establish at least a basic account of epistemic causality, corpus studies on alternating constructions must be complemented with experimental work. From what we have said so far, it is clear that corpus studies constitute an excellent starting point to identify the factors that could turn out to have a causal epistemic probabilistic effect on speakers’ choices, but taken by themselves they cannot reveal the crucial presence or absence of counter-factuality in the relationship between the phenomena that are being investigated. Experimental designs, on the other hand, are able to shed light on the factors that actually govern speakers’ choices in terms of epistemic causality. Even then, caution is required, in particular with regard to how many causal factors can be accounted for and what type of causality is involved.

For example, Belligh (2018) examined the epistemic probabilistic causal influence of various states of referential givenness on speakers’ choices between the several constructions that figure in the Dutch sentence-focus alternation, as illustrated in (6). While sentence-focus constructions that partake in the alternation are by definition identical with respect to their topic-comment structure and focus-background articulation, they might still differ with regard to the referential givenness of the constituents that figure in the constructions. The set-up of the experimental task used in Belligh (2018) therefore included three different states of referential givenness, viz. ‘unidentifiable’, ‘identifiable new’ and ‘identifiable accessible’, as the relevant possible values for the independent variable. The dependent variable of the experimental task was whichever sentence-focus construction the speakers spontaneously produced. Participants were asked to engage in a form of role play in which they were instructed to imagine themselves as the protagonist of a story that was read aloud to them and to spontaneously provide answers to various questions that were asked by several characters in the story to the protagonist. The relevant values for the independent variable were implemented in the set-up by dividing the participants into three groups. The stimulus material for the three groups differed in a number of aspects of the narrative that was read out to the participants, so as to have ‘unidentifiable’, ‘identifiable new’ and ‘identifiable accessible’ referents in the three groups, while keeping all other aspects of the story identical. The spontaneous speech production of the participants in response to the questions in their role as protagonists was registered on a recorder. By using the general “What happened?” question to elicit the target items, the experiment succeeded in prompting the participants to spontaneously produce a high number of sentence-focus constructions. The analysis of the results of the experiment indicated that the three referential givenness states are significantly correlated to some of the constructions involved in the Dutch sentence-focus alternation.

The crucial difference with the kind of correlations established in probabilistic corpus-based approaches resides in the fact that the input the speakers receive, including the various referential givenness states, precedes the production of one of the constructions while all other linguistic input is identical, apart from the differences in the relevant referential givenness states. This kind of set-up is therefore able to uncover factors that epistemically causally influence speaker’s choices among the possible alternatives. We maintain that it is always necessary to resort to some form of experimental set-up if one wants to make claims about alternating constructions that go beyond the mere identification of correlations.

There are four important caveats. First, on the methodological level, it should be noted that the particular set-up used in the experiment which served as an example for our argumentation, viz. Belligh (2018), needs further refinement in terms of better control conditions and the inclusion of a larger pool of participants. Within the context of this article, this study merely serves as an illustration of an experimental task that can be carried out with the aim to assess, to a certain extent, what factors influence speakers’ choices between alternating constructions. Second, it is clear that what is at stake in experiments such as these is probabilistic or stochastic causality rather than absolute causality. In this regard, we side with Coseriu (1974[1958]: 201) who reminds us of the fact – already stressed by von Humboldt (cf. Di Cesare, 1988: 74-85) – that ultimately no expression in a specific discourse can strictly speaking be predicted because of the individual speaker’s irreducible creativity in language, even though it is possible to delineate trends and tendencies in language use. Third, by relying on experiments and similar techniques, it becomes possible to determine to some extent the factors that influence speakers’ choices between various alternating constructions in terms of epistemic probabilistic causality, but the constraints that pertain to the ecological validity of such outcomes still apply. In particular, it is far from clear whether the influence of the factors involved in the set-up of the experiment can readily be extrapolated to all other settings of ordinary language use. Fourth, even if we manage to establish a relationship between a particular factor and speakers’ choices, with plausible arguments for the presence of counter-factuality, we are only in a position to make claims about epistemic causality. Questions regarding ontological causality (cf. Section 5.1) and what causal cognitive mechanisms mediate between the influencing input variable and the behavioral outcome produced by the speakers remain at that point unanswered.
6. CONCLUSION

This article explored some of the epistemological challenges linguists face in the study of alternating constructions. After providing an explicit working definition of ‘alternating constructions’, we identified three major epistemological challenges for the study of alternating constructions from the perspective of functionally oriented linguistics. These three challenges constitute major hurdles for linguistic research, but they can be confronted in various ways. We therefore outlined a number of proposals that allow linguists to address the epistemological challenges.

We started off by arguing that various qualitatively different types of alternating constructions need to be distinguished. We first explained that alternating constructions are interesting for in-depth linguistic research if they can be delimited on the basis of a relevant onomasiological point of departure and if they involve constructions that are identifiable on the level of normal language use. We then argued for the necessity of establishing the difference between alternations between two or more constructions in their own right and alternating constructions that are best analyzed as two or more allostructions of an underlying, underspecified constructeme. In order to effectively distinguish between these two types, we outlined a number of criteria. An allostruc-tional analysis should only be applied if two or more alternating constructions are both formally and functionally so closely related that a meaningful constructional template and a shared structurally encoded and underspecified meaning can be determined. Furthermore, allostruc-tions need to be analyzed as having only a pragmatic meaning but no structurally encoded semantics of their own. In order to adequately distinguish between structurally encoded semantics and inferred pragmatics, we proposed to implement the criterion of defeasibility, which is the key criterion adopted in both Neo-Gricean Pragmatics and Integral Linguistics to draw the distinction between semantics and pragmatics (cf. Belligh and Willems, 2021).

We went on to show that analyses of alternating constructions should take into account the difference between regularities of language use and rules of grammar and study both by means of an adequate methodology that takes into account their different ontological, epistemological and psychological status. Quantitative corpus-based research seems particularly well-suited to establish relevant regularities of language use that govern alternating constructions. Given that rules are not determined on the basis of occurrence or frequency, but depend on an intuitive understanding of correctness, we argued that experimentally controlled intuition-based judgments tasks should be used to establish the presence or absence of rules instead of corpus investigations. By taking into account both regularities of language use and grammatical rules, it is possible to differentiate more adequately between the various types of constructions that alternate in the expression of a given meaning.

Finally, we argued that corpus findings cannot be used to make claims about causality, even if causality is approached as an epistemic probabilistic phenomenon. Comprehensive probabilistic models of an alternation can be construed on the basis of the correlations that have been established in corpus material between alternants and various semantic, pragmatic, morphosyntactic and language-external factors. These models make it possible, to some extent, to ‘predict’, based on various variables, which alternant will be found in specific contexts of language use. However, such models do not shed light on the crucial notion of counter-factuality and, therefore, do not provide a basis to infer any form of causality. Observational corpus research can be used to generate hypotheses for subsequent behavioral experiments that can clarify the epistemic, probabilistic causal relationships that hold between specific parameters and speakers’ choices between alternants. We maintain that it is always necessary to resort to some form of experimental set-up, if one wants to make claims that go beyond the mere identification of correlations. At the same time, we identified a number of important limitations of experimental designs that should be taken into account in the interpretation of the results of experimental research on alternating constructions, in particular with regard to the difference between inferring epistemic causality and ontological causality.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References


Willems, K., Belligh, T., 2022. The legacy of structuralism. In: Cigana, L., Gregeren, F. (Eds.), Structuralism as one – structuralisms as many. Royal Danish Academy of Sciences and Letters, Copenhagen.
