

## Article

# Transfer Phenomena in Bilingual Language Acquisition: The Case of Caused-Motion Constructions

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**Abstract:** Usage-based approaches suggest that children gradually build abstract syntactic patterns, called constructions, through processes of abstraction and schematization from the input they receive. Bilingual children have the challenge of learning two sets of non-equivalent constructions when they build their construction. This can result in deviations from monolinguals, which are commonly referred to as transfer. Targeting the expression of the caused-motion construction, the present study focuses on idiosyncratic utterances, those that do not correspond to monolingual adult language use, in three different age groups (4, 6, and 8 years old) of German–French bilingual children in comparison to monolingual control groups. The quantitative analysis showed that idiosyncrasies could be found in both groups, but with significantly higher rates in bilinguals at all ages. In a qualitative analysis, idiosyncratic utterances were clustered into three different types: syntactic patterns, use of verbs, and directional phrases. Regarding the analysis of these types, the influence of French could be shown. In order to classify this linguistic phenomenon in a usage-based approach, we propose to consider transfer as a form of overgeneralization within the bilingual construction.



**Citation:** Koch, Nikolas, and Katharina Günther. 2021. Transfer Phenomena in Bilingual Language Acquisition: The Case of Caused-Motion Constructions. *Languages* 6: 25. <https://doi.org/10.3390/languages6010025>

Received: 2 December 2020

Accepted: 25 January 2021

Published: 2 February 2021

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**Keywords:** transfer; usage-based approach; bilingual language acquisition; caused motion; overgeneralization

## 1. Introduction

The field of multilingualism is becoming increasingly important in the context of usage-based approaches (Tomasello 2003), after a long time spent focusing only on English and predominantly on monolingual speakers (Boas 2010). The topics of multilingualism and usage-based language acquisition have rarely been connected with each other. Bilingual children deal with the challenge of having to learn two sets of formally non-equivalent constructions, which can result in qualitative and quantitative deviations from monolinguals, commonly called transfer. Transfer has only been discussed within the usage-based framework for a short time (see Wasserscheidt 2016 for a Construction Grammar perspective, which is closely related to usage-based approaches), particularly in the field of first language acquisition. Recently, studies have started to examine the phenomenon of code-mixing in bilingual language acquisition (Endesfelder Quick et al. 2018; Gaskins et al. 2019). Especially in the context of a (developing) bilingual construction (Höder 2012; see Section 1.2), i.e., the mental representation of linguistic units, it seems necessary to deal with this phenomenon and to examine whether it can be explained within the format of constructions.

Based on a study by Günther (2020), this paper focuses on idiosyncratic utterances in German–French bilingual children in three different age groups (4, 6, and 8 years old). Idiosyncratic utterances are those that do not correspond to monolingual language use and can be seen as the result of a negative transfer from the other language. Transfer is understood as the transfer of meanings, rules, and structures from one language to another (see Riehl 2014, p. 108). The aim is to investigate transfer as a central phenomenon

of multilingual speech from a usage-based perspective. For this purpose, we first give a short overview of the cognitive mechanisms that guide language acquisition from a usage-based perspective, as these mechanisms are considered fundamental for learning constructions and should therefore also be kept in mind when investigating deviations from the norm. Subsequently, current theories of the mental representation of constructions and transfer are discussed. To connect these two research fields, multilingualism and a usage-based perspective of language acquisition, our study investigated the verbalization of caused-motion events. This field is suitable for the investigation of transfer because of the different construction types in and between the languages to express those events. After briefly discussing central studies that have revealed idiosyncrasies in multilingual speakers, we will describe the caused-motion construction. In contrast to previous investigations, we not only focused on the semantic content of each component separately but also on the syntactic pattern itself. Idiosyncratic utterances are discussed as transfer within the bilingual construction using an extended version of the FIT model (Ambridge et al. 2011).

### 1.1. (Bilingual) Language Acquisition from a Usage-Based Perspective

In the long-dominant generative approach, first language acquisition has been studied from a purely linguistic perspective, focusing on structure only while largely ignoring cognitive and social components. Claims of innateness are typically based on the idea that the input is not rich enough for general learning strategies to fully acquire a language, and therefore, one assumed an innate universal grammar (see, e.g., Valian 2014 for a discussion). However, in the last few decades, usage-based approaches to language acquisition (Tomasello 2003) have become more and more influential. In contrast to structuralist approaches, they emphasize that domain-general cognitive mechanisms drive language acquisition and use.

A key question in language acquisition research is how children learn to use language productively, moving from single words to multiword utterances. From a usage-based perspective, children learn language based on the input they receive, making use of domain-general cognitive mechanisms to find abstract grammatical patterns within the linguistic input (see Tomasello 2003, p. 34). In this context, Tomasello (2003) points to the pattern-finding ability which enables children to identify similarities and filter out recurring elements from the input, i.e., forming categories (see Behrens 2009, pp. 385–86). In this way, language learners gain a great deal of abstract knowledge about the linguistic constructions they encounter. Behrens (2009) describes this process as schema formation, following Langacker's (1987, p. 492) definition of a schema as a "semantic, phonological, or symbolic structure that, relative to another representation of the same entity, is characterized with lesser specificity and detail." In addition to the cognitive capacity of categorization, entrenchment is crucial in the development of linguistic schemas (Schmid 2020). Langacker (1987, p. 59) describes entrenchment as the influence of use and non-use on the degree of mental representation of a linguistic structure. The degree of entrenchment is therefore linked to the frequency of use and influences cognitive accessibility and recall (see Bybee 2006, p. 715; Blumenthal-Dramé 2012). The acquisition of linguistic knowledge is thus seen as the interaction of general cognitive factors within the linguistic environment.

The beginning of language acquisition is strongly item-based; linguistic structures are organized around concrete, specific words, and phrases (see Tomasello 2000, p. 156). In addition to these fixed chunks (like *gimme\_that*), over time, abstraction processes, including categorization and entrenchment, lead to schemas with open slots, such as *gimme X*, where *X* can be filled productively with new lexical material (Koch 2019). Especially in usage-based approaches that rely on concepts of construction grammar (Diessel 2015), it is argued that this schematization process is building toward fully abstract construction, such as phrasal argument structure constructions proposed by Goldberg (1995). Argument structure constructions are form-meaning pairings that link abstract meanings with grammatical relationships (Goldberg 1995, 2006, 2013; Jackendoff 2002). As an example of such a construction, Goldberg (1995) proposed the caused-motion construction, which can be

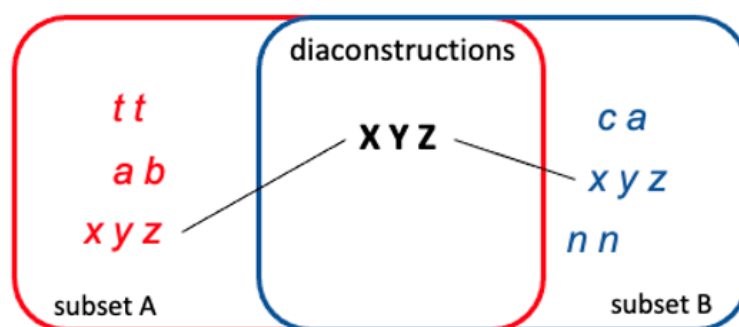
used to describe the following utterance: *Sie tut das Buch auf den Tisch/Elle met le livre sur la table/She puts the book on the table*. This type of construction can be defined by a certain set of grammatical relations ( $\{\text{Subj}_x, V, \text{Obj}_y, \text{Oblique-path}_z\}$ ) and a corresponding semantics (“x causes y to move (to/from) z”) (see Section 1.3). Children learn such abstract constructions by recording which verbs they have heard used in which constructions previously and generalize over that knowledge (see [Goldberg 2013](#), p. 458). Thus, abstract argument structure constructions are learned inductively from witnessing various verbs used in that construction ([Goldberg 2006](#); [Tomasello 2003](#)). As [Goldberg \(2013, p. 458\)](#) points out, it is not an accident that the verbs that occur most frequently in the respective argument structure construction tend to encode the general meaning of that construction. For example, *put* is the most frequent verb in the caused-motion construction both in the output of children and in the input they receive (see [Goldberg et al. 2004](#), p. 298). The equivalents *mettre* in French and *tun, machen* in German are also highly frequent in the caused-motion constructions of the respective languages ([Günther 2020](#); [Harr and Hickmann 2015](#)). Thus, children build the abstract pattern by generalizing over the concrete tokens they hear.

To sum up, it is assumed that productivity emerges gradually within a usage-based approach. These so-called constructional schemas (see [Diessel 2015](#)) are patterns at various levels of abstraction. The question within a usage-based approach is how abstract these structures are. [Ambridge \(2019\)](#) offers a radically exemplar-based approach, while [Lieven et al. \(2020\)](#) make theoretical and empirical arguments in favor of at least some stored abstractions. For the present study, we follow [Goldberg’s \(2006\)](#) and [Abbot-Smith and Tomasello’s \(2006\)](#) proposals, which assume simultaneous storage at different levels of abstraction.

### 1.2. The Bilingual Construction and the Phenomenon of Transfer from a Usage-Based Perspective

One of the central areas of investigation in the research field of multilingualism was and still is the representation of language systems in bilinguals—more specifically, whether the systems are interwoven or largely separate. Regarding children, there is a general consensus that the acquisition of several languages is independent but that the languages can interact with each other, which can lead to transfer ([Serratrice 2013](#)). Instead of assuming two monolingual language systems in one speaker, [Matras \(2012\)](#) suggests that all linguistic knowledge has to be seen as a unit. In this respect, he proposes a single complex bilingual repertoire (see [Matras 2012](#), p. 4). This repertoire is not divided into two individual language-dependent systems, but rather contains individual subsets (see [Matras 2012](#), p. 68). During language acquisition, children go through a process of linguistic socialization, acquiring conventions and restrictions on the use of constructions from their entire repertoire. Even if bilingual speakers aim to select structures appropriate to the context, they can draw on and exploit their entire linguistic repertoire.

In the context of the usage-based approach, the question of the mental representation of several languages leads to the question of how constructions are represented in bilingual speakers. [Höder \(2012, 2018\)](#) presents a constructional framework that deals with this issue: Diasystematic Construction Grammar. Through interlingual identification, bilinguals perceive equivalences between structures such as concepts or syntactic structures from both languages. These structures are then recognized by the speaker as equal and form a diaconstruction through the processes of generalization and abstraction (see [Figure 1](#)). [Höder \(2012, p. 247\)](#) argues that abstraction processes and generalization in bilinguals can be undertaken in more than one language simultaneously. In the sense of the repertoire described by [Matras \(2012\)](#), bilinguals have a common system in which the languages form different but overlapping subsets.



**Figure 1.** Diaconstructions in the bilingual constructicon (adopted from Höder 2018, p. 44).

The bilingual construction thus consists of both language specific constructions and unspecific diaconstructions. With regard to language acquisition, Höder (2018, p. 54) assumes that some language-specific constructions gradually become diaconstructions.

The question regarding the mental organization of the language system in bilinguals is closely connected with the phenomena of transfer. As explained above, the different language subsets of bilingual speakers do not exist strictly independently of each other but interact. Although it can largely be assumed that the language development of bilinguals is comparable to that of monolinguals (Tracy 2008), the interaction of languages causes deviations often referred to as transfer. Speakers have the option of using their entire bilingual repertoire, which can lead to transfer phenomena, “a process by which the speaker makes or attempts to make creative use of elements of the combined, full repertoire of linguistic structures in a context that requires selection from just a subset of that repertoire.” (see Matras 2012, p. 74). Matras describes transfer as the recourse to existing linguistic structures that are not suitable for the corresponding context. Such a strategy can also be observed with monolinguals: for example, monolingual German children often use the suffix *-te* to form the past tense. In this way, utterances such as *\*gehte* (“goed”) or *\*trinkte* (“drinked”) are produced, which are regarded as non-adult-like. When closely examined, however, these supposed mistakes are less incorrect than initially assumed. Here, the children apply the already learned pattern for the past tense verb-*te* to all verbs. This is often called overgeneralization. In the continuing process of language acquisition, they receive evidence for the correct pattern through the input and recognize that there are other patterns with which the past tense can be formed. However, bilinguals receive evidence from two languages, some of which may not be congruent. In the following, we propose to consider that transfer is also a form of overgeneralization within the bilingual constructicon. For this purpose, we use an extension of the FIT model (Ambridge et al. 2011).

The FIT model is primarily designed to explain overgeneralization errors in monolingual children and explains how an item and a construction fit or whether an item is suitable for a construction. For a better understanding of the processes in monolinguals, this is illustrated with the following example based on the work of Ambridge and Lieven (2011, p. 257). First, in order to express the information that a child smiles at a woman, different words and constructions are activated and compete with each other until the units with the highest activation are selected. As bilinguals draw on their entire repertoire, it is to be expected that the initial activation of constructional templates and words will not be limited to one language. Additionally, it must be said that similar constructions are coactivated across languages, as has been shown in studies using the priming paradigm in Hartsuiker et al. (2004). Thus, constructions of other languages might also be considered relevant and show a good fit for the items. Therefore, a construction can still be activated even if it does not correspond to the target language at that moment. Returning to the original model, different factors play a role, such as relevance and fit, depending on the exact information the speaker wants to convey. In this case, the construction needs slots for the items *child* as agent, *smiling* as an action, and *woman* as a patient. Regarding the factor relevance and

the fit, the most relevant construction would be the conative *at*-construction containing the slots for each item and entailing intentionality but no affectedness. Another construction that might be activated is the transitive counterpart, which implies affectedness. However, since the person is not directly affected, the conative construction receives more relevance and a better fit for the items. Further, the frequency of occurrence of the construction and the frequency of occurrence of the individual items in this construction are taken into account. Thus, if *smiles* has often occurred in the conative construction in the speakers' input, the availability in memory is higher and the final construction will probably be *a child smiles at the woman*. Here, the FIT model uses mechanisms from the usage-based approach, since, along with frequency, the entrenchment of the construction itself and the items play a role in the final activation. Overgeneralization errors result from items being inserted in constructional slots for which they are not suitable because the child has not yet acquired the properties of the slot or the appropriate construction (see [Ambridge and Lieven 2011](#), p. 262). This could lead, for example, to overgeneralizing the transitive construction *\*a child smiled the woman*.

Coming back to the idea of cross-linguistic diaconstructions ([Höder 2012](#)), the assumption can be made that this diaconstruction is more entrenched in both languages per se, since instances of this construction occur in both (or more) languages and thus their overall frequency is increased. In consideration of the FIT model, this construction is thus more likely to receive a higher activation. However, since construction occurs in both languages, their use is most likely acceptable and will not consider a case of negative transfer. Thus, on the one hand, if language learners build up diaconstructions, idiosyncratic uses regarding the constructional pattern should be rare, since children would tend to use this construction type, which is available in both languages. The overgeneralization would then not be visible regarding the pattern but could still concern the semantics of each component. On the other hand, if linguistic knowledge is represented on a lower level of generalization and these low-level patterns are commonly called *transferred*, this would lead to more idiosyncratic utterances. We will return to this issue in the discussion.

### 1.3. Motion Events and the Caused-Motion Construction

The investigation of the verbalization of caused-motion events in monolingual and bilingual speakers has a long tradition. Using a framework by [Talmy \(1985\)](#), which cannot be further discussed here, studies have focused on the semantic contents of components expressed during the verbalization of motion events—more specifically, the verb and the directional phrase—in both monolinguals and bilinguals ([Ochsenbauer and Engemann 2011](#); [Hickmann et al. 2018](#)). Although idiosyncratic uses were not the focus of these studies, results in English–French and German–French children show that productions sometimes consist of structures that did not correspond to the monolingual use of language ([Engemann 2013](#); [Hickmann et al. 2018](#)).

Further studies with bilinguals describe overgeneralization errors that reflect the semantic organization. In German, different verbs depending on the position of the object (*stellen* “to place vertically”, *setzen* “to set”, *legen* “to lay”) exist, whereas Rhaeto-Romanic speakers use one general verb *metter* for the same purpose. Bilingual speakers transfer the broad meaning of the verb *metter* to the German verb *legen* “to lay”, which leads to the overgeneralization of *legen* “to lay” (see [Berthele 2015](#), p. 637). A similar result was found in French–Dutch adults to describe object placement: in Dutch, *leggen* “to lay” was overgeneralized to vertical placements ([Alferink and Gullberg 2014](#)). This shows that bilinguals, therefore, do not make fine semantic distinctions in either Dutch or French (see also [Hijazo Gascón et al. 2016](#) for L2-learners).

However, it must be borne in mind that both bilingual and monolingual children show verbs and directional phrases that do not correspond to adult language use. Some of these expressions are due to developmental reasons. For example, [Harr \(2012, p. 323\)](#) showed for French that children are not able to express all semantic components in one construction until the age of ten. German children also use verbs that can be referred to as



idiosyncratic, which Harr (2012, p. 296) explains as occurring because “adult-like semantic knowledge” has not yet been acquired.

To summarize, idiosyncratic descriptions, i.e., either ungrammatical or unusual utterances, can be found in both monolinguals and bilinguals. In the case of bilinguals, these expressions can be traced back to the overgeneralization or transfer of semantic content. Additionally, the presence in monolinguals also shows the importance of development-related factors. However, these studies did not focus on constructions as form-meaning pairings and therefore did not investigate idiosyncratic uses of constructions. This paper will therefore focus on caused-motion constructions.

The caused-motion construction is one of the argument structure constructions described by Goldberg (1995, p. 152) as a complex form-meaning pairing, a syntactic pattern containing the following slots, called argument roles: agent, verb, theme, and directional phrase. Examples (1) and (2) show a description of the object displacement containing these roles. In example (2), even though the verb is not a verb of displacement, the pattern conveys the general meaning of the caused motion.

1. He                puts                the bottle                on the table.  
Agent                Verb                Theme                Directional phrase
2. She sneezed the foam of the cappuccino. (Goldberg 2006, p. 73)

Since our study deals with data from German and French speakers, the caused-motion construction in both languages needs to be described in more detail. Regarding the syntactic pattern, both German and French share the English construction containing agent, verb, theme, and directional phrase, as can be seen in the following examples (3) and (4).

3. Er                tut                Spielsachen                in die Kiste.  
Agent                Verb                Theme                Directional phrase  
“He puts toys into the box.”
4. Il                met                les jouets                dans la boîte.  
Agent                Verb                Theme                Directional phrase  
“He puts toys into the box.”

In addition, German enables speakers to express the directional phrase twice by combining a prepositional phrase and a particle (5). This is also possible in French using the general preposition *là* “there” (6). In French, caused motion can also be expressed in a construction in which the directional phrase is omitted (7), whereby the content is usually implied by the context. This is partly due to the old Latin prefixes or prepositions, which express a temporal and/or local aspect in connection with a verb (Kopecka 2006).

5. Er                tut                den Deckel                auf die Kiste                drauf.  
Agent                Verb                Theme                Directional phrase                Directional phrase  
He puts the lid onto the box on.  
“He puts the lid onto the box.”
6. Il                met                le couvercle                là                sur la boîte.  
Agent                Verb                Theme                Directional phrase                Directional phrase  
“He puts the lid here onto the box.”
7. Tu                accroches                le manteau.  
Agent                Verb                Theme  
You hang the coat.  
“You hang up the coat.”

The description of the constructions in both languages illustrates the differences on the level of an abstract syntactic pattern, especially in the case where the directional phrase can be omitted in French. Following the idea of analyzing motion events in the form of constructions, Günther (2020) was able to show that, for French and German monolingual and bilingual children, there are no strict boundaries between the subsets of the repertoire. The construction [Agent Verb Theme] that is typical of French was also found in German but was significantly more common in bilinguals than monolinguals. The construction [Agent Verb Theme 2xDirectional Phrases], which is more common in German, was used more often by French bilinguals than by monolingual peers. There was no difference

between the groups with regard to the construction [Agent Verb Theme Directional Phrase] occurring in both languages. Our study aims to uncover both idiosyncrasies of semantic content and idiosyncrasies of syntactic patterns in German caused-motion descriptions by French–German bilingual children. Our focus is on transfer from the perspective of overgeneralization errors in the entire construction while considering underlying cognitive mechanisms.

#### 1.4. Research Questions

Our study focuses on the transfer of caused-motion constructions in bilingual children, which often leads to idiosyncratic utterances. Roughly, our questions are concerned with the nature of the idiosyncrasies, their quantity with regard to the age groups, and whether they can be explained as overgeneralizations within the developing bilingual construction.

To be more precise, our (1) research question relates to which idiosyncratic forms in the use of the caused-motion construction are to be observed in bilinguals in comparison to monolinguals. In addition to previous studies, where some idiosyncratic uses and deviations from monolingual speech have been described for the area of caused motion, we also focus on caused-motion construction as a complex syntactic pattern.

Our (2) question is whether the number of idiosyncratic usages changes between 4, 6, and 8 years. It is to be expected that children will increasingly approach adult language use and, therefore, the number of idiosyncratic uses will decrease. However, we expect the decrease to be more significant in monolinguals, since bilinguals could take more time to acquire target-like vocabulary in both languages (Meisel 2004).

Finally, the study deals with the (3) question of to what extent idiosyncrasies are due to transfer from the other language. To explain this, a usage-based perspective is proposed in which constructions are seen as usage patterns that are not restricted to one language.

## 2. Materials and Methods

### 2.1. Participants

This study is part of a project that examined the caused-motion construction on several abstraction levels in German–French bilingual children (for further details, see Günther 2020). For the present study, data from German–French bilingual children ( $N = 58$ ) in three different age groups (4, 6, and 8 years old) and respective monolingual German control groups ( $N = 59$ ) were examined (see also Appendix A). One participation criterion was a relatively balanced bilingual environment. The child should have grown up with both languages from birth and have regular contact with both languages through the family, social environment, and through media. It was important that each parent spoke a different language to the child, either French or German. Furthermore, children who had frequent contact with a third language—for example, through an English-speaking nanny—were excluded. For this study, we analyzed German data of the bilinguals, who were originally tested in both of their languages. Data from bilingual children were collected in the period from 2012 to 2016 in the primary school and kindergarten of the Sections Internationales de Sèvres in France. The monolingual data are from the German–French project LANGACROSS. The parents were asked to complete a questionnaire providing information on bilingual language usage in the child’s environment.

### 2.2. Data and Data Collection

The data consisted of elicited utterances from object displacements. The stimuli were taken from a study by Hickmann and Hendriks (2006). The subjects were asked to describe 40 actions performed by the experimenter using toys or everyday objects. The items can be divided into different types: ONTO-items (e.g., putting a lid onto a pan), CLOTHING-items (e.g., putting a hat onto a doll), JOINING-items (e.g., putting Lego pieces together), and INTO-items (e.g., putting a toy into a box). Each item contained a doing and an undoing action, which meant that the experimenter first put the item in one place and then reversed the action and removed it. A complete list of the items is given in Appendix B.

The testing was conducted in a separate room in the school or kindergarten. Each child took part in the test individually. In order to make the task playful, the children were asked to blindfold a doll and then describe as precisely as possible what the experimenter showed them. The actions were presented in two different sequences, which were randomly assigned to the subjects. The utterances were recorded with a laptop or dictation machine.

### 2.3. Transcribing and Coding

The data were transcribed in CHAT format and coded with the CLAN program (MacWhinney 2020a, 2020b). For the proposed coding, each child was assigned an abbreviation, bilingual (B) or monolingual (M), followed by the language (G = German) and the age group. The coding was done by two native speakers of German. Idiosyncratic utterances are defined as utterances that do not correspond to monolingual adult language use. Utterances were only considered idiosyncratic when both raters agreed; discussions were held if necessary to resolve discrepancies. The inter-rater agreement was 95.14% (see Appendix C). Note that some discrepancies were related to several participants and items at once. The focus for coding was on the syntactic pattern, the verb, and the directional phrase, which we coded as idiosyncratic or not. Grammatical errors concerning verb agreement or case marking were not considered. An utterance was only coded as idiosyncratic once.

For the quantitative analysis, the number of idiosyncratic utterances was totaled for each age and learner group and combined with the utterances that are not considered idiosyncratic to reach the total. Thus, omitted items were not included in the analysis or evaluated as correct utterances. Statistical analysis was conducted using the Test for Trend in Proportions and the Test of Equal or Given Proportions.

For the qualitative analysis, the following categories have been defined:

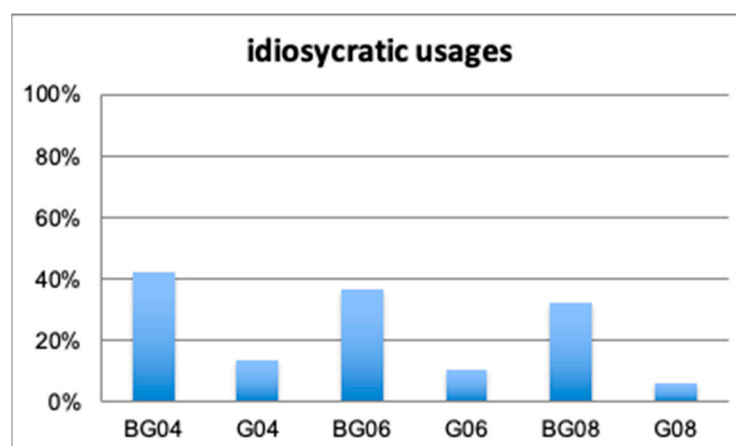
1. Omission of directional phrase resulting in an idiosyncratic syntactic pattern: *\*die Legos \_\_\_\_ tun* ("to put the Legos \_\_\_\_"), where the slot of the directional phrase is not filled.
2. Idiosyncratic verb use: *\*Den Schal aufsetzen* ("The scarf set up")
3. Idiosyncratic use of directional phrase: *\*Die Legos drintun* ("to inside+put the Legos")

## 3. Results

### 3.1. Quantitative Analysis

In the first step, the number of idiosyncratic utterances was determined. In total, we analyzed 4481 utterances, of which 1020 were considered idiosyncratic. The percentage share is shown in Figure 2 (see also Appendix D). First, it turns out that idiosyncratic uses can be found in bilinguals and monolinguals. In total, the proportion of idiosyncratic utterances in bilinguals amounts to 36.85% and 10% in monolinguals. This means that even monolingual children produce utterances that do not correspond to the adult norm. Nevertheless, the higher proportion of idiosyncratic utterances in the bilingual groups compared to monolinguals is striking. In fact, the proportion was significantly higher at all ages than among monolinguals (4 years  $\chi^2(1) = 152.13, p < 0.001$ ; 6 years  $\chi^2(1) = 141.41, p < 0.001$ , 8 years  $\chi^2(1) = 171.99, p < 0.001$ ). Within the bilingual group, there was a significant decrease as children aged ( $\chi^2(1) = 16.06, p < 0.001$ ). In 4-year-old bilinguals, 42.6% of the utterances produced are considered idiosyncratic (far left bar) and decrease by only 10 points at age 8 (second bar from the right). Among monolinguals, the proportion is also highest among 4-year-olds with 13.44% (second bar from the left) and decreases significantly up to age 8 to 5.94% (far right blue bar) ( $\chi^2(1) = 24.61, p < 0.001$ ). Idiosyncratic utterances are thus very rare at this age.





**Figure 2.** Idiosyncratic usages in bilingual and monolingual children.

### 3.2. Qualitative Analysis

As described in Section 2.3, three categories have been defined for the qualitative analysis: omission of directional phrases resulting in an idiosyncratic pattern, idiosyncratic use of verbs, and directional phrases. We are aware that the division into categories is not always clear. For example, it is not always possible to say whether the verb alone is idiosyncratic or only in combination with a certain directional phrase. We stick to the defined categories, but overlaps are not excluded. In the following discussion, we will focus on examples of bilinguals and analyze whether idiosyncratic utterances produced in German are based on a French pattern. Since the quantitative analysis has shown that monolinguals also use idiosyncratic utterances, they should not be ignored in the qualitative analysis either.

#### 3.2.1. Idiosyncratic Syntactic Pattern

The first category consists of examples where the directional phrase is omitted. Since this is not possible in German, the syntactic pattern is idiosyncratic. This mostly occurred in the bilinguals' utterances. We find this several times with the verb *räumen*, which means "to tidy up" in combination with the particle *auf* or a prepositional phrase to express the location (e.g., *in die Kiste* "in the box"). Nevertheless, some bilinguals use this verb without a directional phrase, which is close to the use of the French equivalent *ranger* "to tidy up", as can be seen in example (8).

8. Du räumst die Spielsachen. (BG0617)  
 You tidy the toys.  
 "You tidy up the toys."

Further, some bilinguals use the verb *kleben* "to glue" without a directional phrase, either to express how a bandage is applied or two items are joined together (9–10). In example (10), the child even starts by adding the particle *an* "on" but then corrects himself and just uses the verb. Note that monolinguals in German barely used this verb to express JOINING-items, whereas there are some more occurrences in bilinguals and French monolinguals (Günther 2020, p. 223).

9. Du klebst das. (BG0412)  
 You glue it.  
 "You put the Legos together."  
 10. <du hast sie ange-> [/ /] du hast sie geklebt. (BG0621)  
 <You have them on-> [/ /] you glued them.  
 "You put the Legos together."

Another example concerns the use of the verb *machen* with the meaning of "to put clothes on" in CLOTHING-items. As previously mentioned, the highly conventionalized verb *anziehen* "to put clothes on" would be expected in German here. In French, though it

is also the verb *mettre* that receives the conventionalized meaning of “to put clothes on” in this context with no necessity to add a directional phrase.

11. Du machst die Lisa einen Schal. (BG0617)  
You put the Lisa a scarf.  
“You put a scarf on Lisa.”

Finally, we observe some idiosyncratic uses with *nehmen* “to take”, which needs to be used with a directional phrase to express caused motion in German, whereas the equivalent *prendre* “to take” in French can be used without.

12. <Und du> [/] und du nimmst wieder den Haken. (BG0802)  
And you take again the hook.  
“You take the hook again from the wall.”

### 3.2.2. Idiosyncratic Verb Use

In the second category, we consider the idiosyncratic uses of verbs. Many of these uses concern the use of *stellen* “to place vertically”, *legen* “to lay”, and *setzen* “to set”. These verbs describe a placement and also specify the position of the object. The verb *stellen* “to place vertically” is used to describe, for example, a book placed on a shelf. As shown in examples (13) and (14), the participants use the verb even though a coat was not placed vertically onto a hook, and the Legos were not placed vertically in the bowl. In turn, *legen* “to lay” encoded a horizontal position of the object (15).

13. Dann hast du das drauf gestellt. (BG0607)  
Then you have it onto placed.  
“You put the coat on the hook.”
14. Du stellst den Lego in die Schüssel. (BG0802)  
You place vertically the Lego in the bowl.  
“You put the Lego in the bowl.”
15. Du legst die Mütze auf den Kopf. (BG0609)  
You lay the cap on the head.  
“You put the cap on the head.”

The data also show idiosyncratic usage with the verb *setzen* “to set”, which is generally used in combination with the particle *auf* “on” to describe how a cap or hat is put on. However, as shown in examples (16) to (18), some bilingual and monolingual children overgeneralize it to other clothing pieces, for example, the scarf or the coat. It should be noted that these are the only idiosyncratic usages concerning these verbs in the monolingual data. As mentioned before, the distinction regarding these positioning verbs is not made in French and the verb *mettre* “to put” is used instead.

16. Den Schal aufsetzen. (BG0810)  
The scarf set up.  
“You put on a scarf.”
17. Tust ihn ansetzen. (G0611)  
Do it set up.  
“You put on a shoe.”
18. Du tust ihn # der [/] der Lisa umsetzen. (G0402)  
You do it (the scarf) Lisa around+set.  
“You put on the scarf.”

Further, idiosyncratic expressions concern the verbs in the CLOTHING-items. To describe putting on a coat or a scarf in German, the verb *anziehen* and *ausziehen* made up of the particle *an* “on” or *aus* “off” and the verb *ziehen* “to pull” is commonly used. The combination of these particles with this verb is highly conventionalized in German and the meaning of *ziehen* “to pull” is lost. In French, one would use the verb *mettre* “to lay”, which in this context also receives the meaning of “to put clothes on”. In our data, we observe idiosyncratic uses of the verbs *machen* and *tun* “to put” (19–20). Even though they are often said to be generic and neutral verbs and so supposed to fit in a broad range of contexts (

Theakston et al. 2004), the use in CLOTHING-items is unusual. We found some cases where *machen* “to put” is combined with the particle *an* “on”, which gets close to the expected verb *anziehen*. In other cases (21), bilingual and monolingual children combine *ziehen* “to pull” with other particles or prepositional phrases, which also leads to idiosyncratic combinations:

19. Du machst die Jacke an. (BG0408)  
“You put the jacket on.”
20. Du tust ihn der Lisa an. (BG0812)  
You put it Lisa+DAT on.  
“You put the shoe on Lisa.”
21. Den Schuh an der Lisa hinmachen. (G0406)  
The shoe on the Lisa on+put.  
“You put the shoe on.”

To describe JOINING-items, i.e., how objects are brought together, some bilinguals use the verb *hängen* “to hang”, which is illustrated in the following examples (22–23). Note that we did not find any instances in the monolingual control group. As shown by Günther (2020), the equivalent *accrocher* “to hang” is frequently used by French monolinguals to describe these events. German monolingual children would rather use the verb *stecken* “to plug, to stick” in this case.

22. Du hängst sie beide zusammen. (BG0817)  
You hang them both together.  
“You put them together.”
23. du <klebst> [/ /] oder hängst die beiden Legos ran. (BG0803)  
You <glue> [/ /] or hang both Legos on.  
“You put them both Lego pieces together.”

### 3.2.3. Idiosyncratic Directional Phrases

In the final step, idiosyncratic directional phrases such as verb participles or prepositional phrases were investigated. This applies, for example, to items where a recipient is also expressed—that is, when clothes are put on the doll or a plaster is applied. To describe CLOTHING-items in German, speakers usually express the recipient through the dative object and, if needed, specify the position of the clothing piece in a directional phrase, e.g., *der Puppe auf den Kopf* “the doll-DAT on the head”. In any case, the recipient itself cannot be considered as the final location and therefore cannot be expressed through the prepositional phrase. In contrast, in French, the recipient can act as a final location, which is expressed with general preposition *à*+NP “to+NP”, e.g., *à la poupée* “to the doll”. In the data, we observed some instances where the bilingual children seem to adopt the French way of using prepositional phrases to express the recipient as a final location. The following examples (24–26) illustrate this with *auf*+NP “on+NP”, *zu*+NP “to+NP” and *an*+NP “to/at+NP”, which are all considered equivalents to *à*+NP “to+NP” in French. Among monolinguals, we also found some unusual utterances with the preposition *an*+NP “on+NP”, where the children express how a shoe is put onto the doll. Here, the final position of the shoe already implies the final location, which makes the utterance unusual (27).

24. Den Schuh auf die Lisa tun. (BG0402)  
The shoe onto Lisa put.  
“You put the shoe on Lisa.”
25. Wir machen ein Pflaster zu Pipi Langstrumpf. (BG0615)  
We put a bandage to Pipi Longstocking.  
“We put a bandage on Pipi Longstocking.”
26. Mach die Mütze an die Lisa. (BG0803)  
Put the hat to the Lisa.  
“You put the cap on Lisa.”
27. Tust du an die Füße hin. (G0607)  
You put it to the feet too.  
“You put the shoe on the feet.”

Further, we find some idiosyncratic overgeneralization of the prepositional phrase *von*+NP “from+NP”, which is used for undoing actions—for example, to describe how an object is taken away from a place. Our data did not reveal any examples of this idiosyncrasy in monolinguals. For INTO-items, i.e., to describe how objects are taken out of a container, bilinguals tend to use *von*+NP “from+NP” instead of *aus*+NP “out off+NP”, which would be expected here (28). In French, this distinction is not made, and both ONTO- and INTO-items would be described with the preposition *de*+NP “from+NP”.

28. Die Spielsachen raus von die Kiste. (BG0602)

The toys out from the box.

“You put the toys out of the box.”

Finally, we would like to draw attention to some children who choose a directional phrase and use it for a large number of items, although it is idiosyncratic. For example, G0803 overgeneralized *aus* “off” to describe different undo-events: *aushängen* “off+hang” to describe how a coat is taken off a hook, *ausstecken* “off+stick” to describe how previous joined objects are separated or *ausbinden* “off+wrapping” to describe how a scarf is taken off. The particle *aus* “off” seems to be a fixed part of the pattern, whereas the verb is replaced productively. In a similar way, BG0615 overgeneralized *aus* “off” to 14 out of 20 undoing actions without using a verb.

#### 4. Discussion

Targeting the expression of caused motion in German–French bilingual children and a German monolingual control group, our data showed several cases of idiosyncratic utterances, i.e., utterances that can be qualified as unusual both in bilingual as well as in monolingual children.

Our first research question aimed at identifying the idiosyncratic utterances in bilinguals, which we had to extend to monolinguals as well, since utterances of this kind were found in both groups. Here, the difference between the groups was particularly striking. In total, around 37% of the utterances in bilinguals were qualified as idiosyncratic. In contrast, only 10% of utterances were idiosyncratic in monolinguals. The 4-year-old bilinguals showed the highest amount (around 43%), whereas the 8-year-old monolinguals showed the lowest (around 6%).

Our second research question used a developmental perspective by analyzing changes regarding the age groups. Indeed, we can confirm a significant decrease in idiosyncratic utterances between the ages of four and eight. Since this concerns both bilinguals and monolinguals, a developmental-related explanation seems appropriate and it is to be expected that idiosyncrasies generally occur during language acquisition until the adult structures are learned.

In this context, studies on the expression of motion events have often emphasized the influence of language-independent general cognitive factors, such as the increasing processing capacities of children, which in turn impact the length and complexity of utterances (Ochsenbauer and Engemann 2011). Along with this, increasing vocabulary and discourse becoming more organized are decisive (Hickmann et al. 2018). This is also in line with the usage-based approach as it assumes that the constructional patterns gain in productivity and thus become gradually more complex and abstract through language acquisition (see Section 1.1). Even though we observe a decrease in idiosyncratic utterances in both groups, around 30% of the bilinguals’ utterances are considered idiosyncratic at the age of eight, whereas in monolinguals, we observe only around 6%. We assume that the reasons could lie in the increased cognitive load and reduced vocabulary in bilinguals in comparison with monolinguals. Despite the fact that language dominance was only indirectly recorded through the questionnaire, it can be assumed that French predominates in everyday life, since the bilingual participants live in France. It follows that the target vocabulary in German might be lower (Thordardottir 2011; Unsworth 2015). Further, this is supported by Harr et al. (2017), who showed that bilinguals take more time to acquire

specific verbs in target-like constructions because they have more constructions at their disposal, which are not congruent.

The third question was used to investigate whether the idiosyncratic utterances were due to transfer. We propose to look at transfer from the perspective of overgeneralizations in that bilingual children draw on their entire repertoire. For this purpose, we extend the FIT model to bilinguals (see Section 1.2), which was originally designed to describe overgeneralization errors in monolingual children with factors such as entrenchment and frequency. In the following, we will take up some of the examples mentioned in the qualitative analysis in the respective categories: idiosyncratic syntactic pattern that corresponds to the construction, idiosyncratic verb use, and idiosyncratic use of the directional phrase.

First, we have described utterances in which the directional phrase has been omitted, which is possible in French in the form of the construction [Agent Verb Theme], but idiosyncratic in German. Let us take a closer look again at the following utterance, where the speaker wants to express how two Lego pieces are put together:

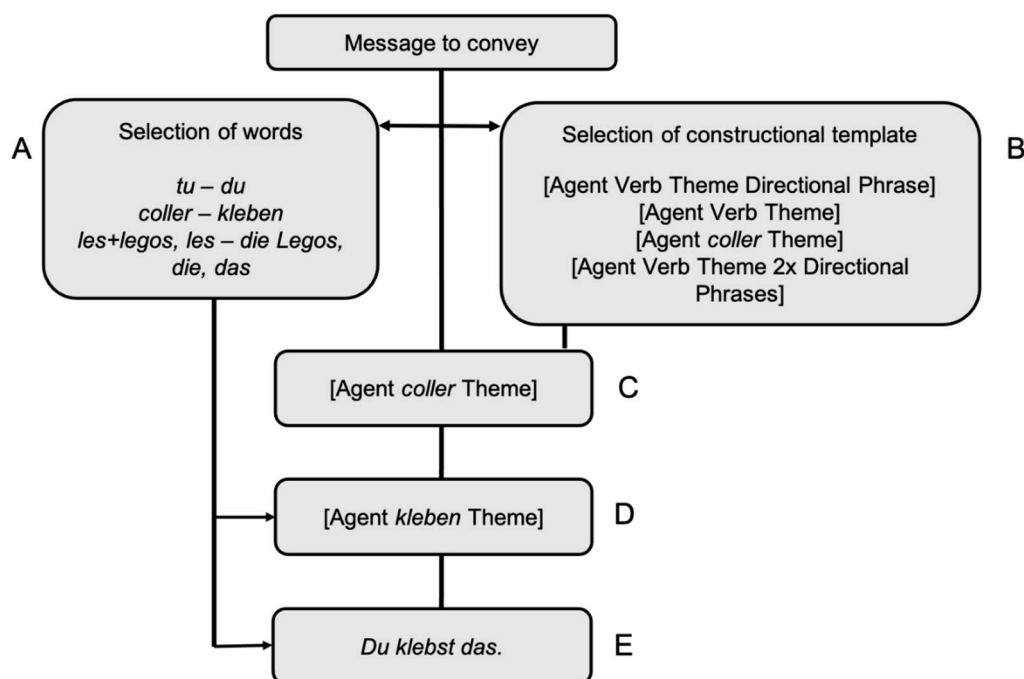
29. Du klebst das. (BG0412)  
 You glue it.  
 "You put the Legos together."

Following the FIT model, the speaker needs to select words and a constructional template (see Figure 3, A/B). Regarding the selection of words, we assume that the speaker selected the French verb *coller* "to glue", which leads to the coactivation of the German lexeme *kleben* "to glue". We propose two reasons to explain that the verb *stecken* "to stick", which would have been expected in German, was not used: either the verb is not existent in the child's vocabulary and, thus, the coactivated lexeme *kleben* was selected, or *stecken* "to stick" is part of the child's vocabulary, but *coller* "to glue" and its coactivated lexeme *kleben* "to glue" receive stronger activation due to entrenchment and frequency effect. Regarding the constructional template (B), all constructions that are relevant and contain slots to fit the items will be activated. In this case, that includes all patterns that express caused motion: [Agent Verb Theme Dir. Phrase], [Agent Verb Theme two Dir. Phrases], and [Agent Verb Theme]. In the next step, construction frequency and item frequency are decisive: if the pattern [Agent Verb Theme] as well as the (French) verb *coller* "to glue" are strongly entrenched because the speaker has encountered this usage event more often in French, this pattern experiences a stronger activation and is selected for production (C). However, we do not rule out that partly specific constructions such as [Agent *coller* Theme] with a specified verb are directly activated as a constructional template if they are entrenched in this form due to high frequency (B). In a German-speaking context, as in the test situation, speakers need to use German lexemes to ensure successful communication. For this purpose, they keep the pattern which is actually common in a French context but use German equivalents that are coactivated (D/E). In this way, it can be explained how the utterance *Du klebst das*, which seems unusual from a monolingual perspective, emerges. Transfer can be considered as an overgeneralization in the sense that the speaker makes use of his/her entire repertoire and overgeneralizes a pattern from his/her construction.

Regarding idiosyncratic verb uses, we first referred to idiosyncrasies using the verbs *stellen* "to place vertically", *legen* "to lay", and *setzen* "to set". This differentiation is only made in German, since in French, *mettre* "to put" can be used for both vertical and horizontal movements. We interpret this kind of transfer using example (13) of how a coat is placed onto a hook. Again, following the extended FIT model, the speaker is expected to select words and activate all relevant and fitting constructions. The construction with the verb *mettre* "to put" receives more activation due to its frequency and entrenchment. The speaker then needs an equivalent in German, which as a first choice could have been *machen* or *tun*. The incorrect choice of *stellen* "to place vertically" could result in the fact that in parallel to the activation of *mettre* "to put", German equivalent words and constructions to describe a similar event were coactivated. The child admits parallels between the French and German verb use and thus overgeneralizes the broad context of *mettre* "to put" to *stellen* "to place vertically". However, it needs to be pointed out that monolinguals also show a



few idiosyncratic uses of *setzen* “to set”, which also shows overgeneralization regarding the verb semantics.



**Figure 3.** Extended FIT model to explain overgeneralizations within the bilingual construction.

The same process can also be used as an explanation for the idiosyncratic use of *hängen* “to hang” in JOINING-items, where *stecken* “to stick” is expected in German. The pattern containing the French verb *accrocher*, which is used for both ONTO-items and JOINING-items, receives more activation. *Accrocher* takes both the meaning of *hängen* “to hang” and *stecken* “to stick”. In this case, though, *hängen* is coactivated, which misleads the speaker into extending the broader meaning of *accrocher*.

We also reported the idiosyncratic uses of *machen* “to put” in CLOTHING-items. As with the examples before, this could result from coactivation with the French verb *mettre*. Recall that *mettre* on the one hand receives a specific meaning “to put clothes on” in CLOTHING-items and, on the other hand, has the broad meaning of “to put” and can also be used for the other items. This could be a case of overgeneralization through the coactivation of these verbs. However, since the verbs *machen* and *tun* “to put” also appear in monolinguals in some cases where they are not idiosyncratic, the verb might just be extended to all CLOTHING-items.

In each case, it shows that the use of *machen* and *tun* “to put” sometimes results in idiosyncratic utterances, even though these verbs can be considered generic through their broad application range and also encode the general meaning of the construction. It could be assumed that the use of verbs reduces processing costs and ensures communication. In this context, Günther (2020) reported that bilinguals in German used these verbs in a higher amount than the monolingual control group, which could indicate that this strategy especially benefits bilinguals. Nevertheless, we argue that, in addition to the broad range of applications, the context of use must also be considered as a factor in the acquisition process.

Regarding idiosyncrasies in directional phrases, some participants confounded *auf*+NP “on+NP”, *an*+NP “to/at+NP”, and *zu*+NP “to+NP” in items where a recipient was expressed. Again, one can assume that the construction [Agent Verb Theme Directional phrase], where the directional phrase can encode the recipient as a location as in French, receives the highest activation. In parallel, German equivalents are activated, but following the pattern with the prepositional phrase results in an overgeneralization, since it is not

possible to express the recipient in the directional phrase in German. In addition, the semantic nuances might add some difficulty as well, since the preposition *à* carries a broad meaning in French, whereas in German, additional differentiations are made, resulting in several prepositions. Thus, the same explanation applies to the lack of differentiation of *aus*+NP “out off+NP” and *von*+NP “from+NP”, since in French, *de*+NP “from+NP” can be used in both actions.

Apart from transfer and developmental factors, we would like to draw attention to the fact that some idiosyncrasies might be the result of the use of strongly entrenched patterns on a lower level of generalization, i.e., with a specified slot. In the case of the just reported idiosyncratic uses of *an*+NP “to+NP”, the assumption would be that the speakers have consistently chosen a pattern in which they specify the location in a prepositional phrase, a pattern that is strongly entrenched in the form of [Agent Verb Theme *an*+NP] due to high frequency. In this context, we reported that two participants used the particle *aus* in all items. We argue that transfer can be excluded, since there is no direct equivalent in French and, further, we observed it also in one monolingual child. We are aware that it is not possible to draw general conclusions based on two participants, but we would like to use these examples as an indication for the use of low-level patterns. This suggests that for the description of most actions, these children do not use a full abstract pattern but rather a pattern in which the directional phrase is specified. Due to its high entrenchment and higher activation, children would use this pattern continuously. Further evidence can be found in [Günther \(2020\)](#).

In this respect, our findings raise the question of what conclusions can be drawn about the mental representation of constructions. As an indication of the use of abstract constructions, we put forward the formation of a diaconstruction (see Section 1.2), which would strengthen the representation of the same construction in both languages, resulting in more frequent use. The consequence of this would be fewer idiosyncratic uses regarding the syntactic pattern. The fact is, however, that we observe some omissions of directional phrases, so the diaconstruction may not be as significant to some children ([Günther 2020](#)). Rather, we assume that idiosyncratic utterances, i.e., overgeneralizations, can better be explained on the level of low-level generalizations, since the idiosyncrasies in the available data are largely due to specific uses of the verb or the directional phrase in French. Unlike the FIT model, we argue that activation in the first step does not necessarily contain abstract patterns, which compete with each other, but directly affects lower-level patterns. The speaker chooses a strongly entrenched low-level pattern with one or more filled slots to express a specific motion event.

To summarize, this study provides the first insight into idiosyncratic uses from a usage-based perspective in bilingual language acquisition using the caused-motion construction as a syntactic pattern. First, we conducted a quantitative analysis that revealed differences between bilinguals and monolinguals as well as between the age groups. Second, the qualitative analysis allowed us to uncover different types of idiosyncrasies, which could partly be traced back to French. Going forward, it would be interesting to look at how the different idiosyncrasies (pattern, verb, or directional phrase) decrease or increase with age. Further, an additional examination of the French data offers the possibility to investigate whether idiosyncrasies are also observed in French. Finally, we discuss transfer from a usage-based perspective and suggest that it can be interpreted as overgeneralization within the bilingual constructicon. Within the context of a bilingual repertoire, it is possible not to assume that bilinguals have strictly separate systems between which language structures are shifted. Rather, overgeneralizations occur in the same way as in a monolingual system.

## 5. Conclusions

During language acquisition, children need to develop their language system to progressively approach adult-like productions. Additionally, bilingual children deal with the task of having to learn two sets of sometimes non-equivalent patterns as well as language-dependent semantic nuances. In this context, transfer phenomena resulting in

idiosyncratic utterances are frequently observed. Instead of treating these as transferences between two distinct language systems, we considered idiosyncrasies from the perspective of overgeneralizations, in which cases bilinguals tend to refer to their entire repertoire. As suggested in the extended FIT model, patterns and words are selected in one language depending on factors such as frequency and entrenchment. The coactivation equivalents in the other language mislead the speaker and result in idiosyncrasies. Further, we propose that low-level patterns play a greater role in language use and in explaining idiosyncrasies than abstract schematic patterns. Moreover, general developmental factors must also be taken into account, as some idiosyncratic utterances have been reported in monolingual children as well.

In any case, it seems important to point out that while bilinguals' idiosyncratic expressions may differ from adult speech or sometimes from monolingual peers, transfer and overgeneralization errors are not a sign of confusion (Byers-Heinlein and Lew-Williams 2013). The same process can also be observed in monolinguals, but here, overgeneralization errors appear more natural as a phase of language acquisition. Ultimately, the underlying strategy of using language productively is the same. Further, resorting to the entire monolingual or bilingual repertoire should be considered as a resourceful strategy, in the sense that the children were able to master the task and achieve the communicational goal.

**Author Contributions:** Conceptualization, N.K. and K.G.; methodology, K.G.; formal analysis, N.K. and K.G.; data curation, K.G.; writing—original draft preparation, N.K. and K.G.; writing—review and editing, N.K.; visualization, K.G. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** The data presented in this study are available on request from the corresponding author. The data are not publicly available because permission was not sought from participants to place their data in an open repository.

**Acknowledgments:** Our sincere thanks to the editors of this issue as well as the two anonymous referees, all of whose comments helped us to improve the paper. All the remaining weaknesses are our own.

**Conflicts of Interest:** The authors declare no conflict of interest.

## Appendix A

**Table A1.** Corpus overview (number, average age, and standard deviation).

Age Groups (Years)	Bilinguals	Monolinguals
4	N = 18 Ø 4;4 SD * 5.38	N = 19 Ø 4;3 SD 4.39
6	N = 20 Ø 6;0 SD 4.41	N = 20 Ø 6;1 SD 3.34
8	N = 20 Ø 8;0 SD 4.82	N = 20 Ø 8;6 SD 5.61

\* SD: The standard deviation is given in months.

## Appendix B

Stimuli (Hickmann and Hendriks 2006):

- ONTO-items: placing an object onto another and removing it: a lid onto a pan, a cap onto a pen, a band-aid onto a hand, a hook onto a wall, a jacket onto a hook.
- CLOTHING-items: putting clothes onto a doll and taking them off: a hat, a cap, a scarf, a shoe, a jacket.
- JOINING-items: putting two pieces together and separating them: one Lego into another, two pop-beads into each other, one stickle brick into another, one pop-bead into another, two Lego pieces into each other.
- INTO-items: placing an object into a container and taking them out: a cassette into a case, toys into a box, toys into a bag, a puzzle piece into another, toys into a bowl.

## Appendix C

**Table A2.** Interrater agreement.

Total amount of utterances	4481
Idiosyncratic utterances	1020
Rater 1	1115
Rater 2	994

## Appendix D

**Table A3.** Idiosyncratic utterances in the bilingual and monolingual age groups (in %).

Bilinguals			Monolinguals		
4 Years	6 Years	8 Years	4 Years	6 Years	8 Years
42.61	36.56	32.17	13.44	10.65	5.94

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