On the Intrusion of the Spanish Preposition *de* into the Languages of Mexico

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Abstract

In this article, I examine the intrusion of the Spanish preposition *de* into the languages of Mexico. Following Matras and Sakel (2007), I apply the distinction of matter (MAT) and pattern (PAT). The exploration of the 35 *Archivo de lenguas indígenas de México* publications which serve as a comparable database shows that Chontal, Mexicanero, Nahuatl de Acaxochitlán, Otomi, Yucatec, Zoque, and Zapotec, have borrowed *de* or a variant thereof. All languages give evidence of combined MAT/PAT-borrowing, while five of the seven languages also exhibit MAT-borrowing only. The results demonstrate that none of the replica languages fully complies with the Spanish pattern regarding the usage of *de*. Indeed, it is essential to identify the functional domain of *de* in each recipient language separately. Further, the findings are briefly reviewed in light of processing factors corroborating the prominent role of frequency in language change.

Keywords

Mesoamerica – language contact – typological change – grammatical borrowing – Romancisation – processing factors

1 Introduction

This empirical paper discusses the ongoing linguistic Hispanisation of the languages of Mexico via borrowing in the domain of grammar. The focus is on the fate of the Spanish preposition *de* in language-contact situations involving Mesoamerican languages as recipient languages. The functions of the borrowed preposition in the recipient languages and its influence on their structures are

investigated. The project ties in with numerous previous studies on language contact and grammatical borrowing (not the least with Romancisation studies (Stolz, 2008)) and seeks to offer new insights into the linguistic behaviour of languages in contact.

The Spanish preposition *de* has turned out to be an excellent candidate for an in-depth investigation, as its intrusion into the languages of Meso- and South America has been widely recognised in the literature. Spanish prepositions at large were obtained from Vulgar Latin (Sondergard, 1953: 76).¹ Yet, present-day Spanish inherited only half of the prepositions that were present in Vulgar Latin, and thus “many functions and meanings were added to the limited stock of prepositions” (Sondergard, 1953: 76). This explains the omnipresence of *de* and its plethora of functions. Depending on the language variety, e.g. European Spanish or Latin American Spanish, *de* may assume up to 22 functions, excluding complex prepositions (cf. Butt and Benjamin, 2013: 480–483). The functions examined in this study are presented in Table 1, to be found in section 2.4. A quick look at the *Corpus del Español del Siglo xxi* (CORPES; Real Academia Española), which features approximately 302,000,000 words to date, reveals that *de* occurs as frequently as 15,041,828 times. To put it succinctly, *de* makes up every 20th word in the corpus.² Thus, the high token frequency of *de* ought to put an internal pressure on the languages in contact with Spanish – although I do agree that both social and functional factors play a key role in the spread and propagation of a linguistic innovation.

This paper is structured as follows. I begin with providing a brief review of relevant literature. The methodology and data of this study are outlined in section 3. The results are presented in section 4. Section 5 is devoted to a discussion of the results from a usage-based perspective, followed by concluding remarks in section 6.

2 Literature Review

2.1 Language Contact

According to Gómez Rendón (2008: 12), “any definition of language contact includes three basic elements, namely: two or more languages [or dialects], the speakers of these languages, and a socio-cultural setting in which contact takes place.” The type of language contact that this study considers was initiated as a result of European colonial expansion (Appel and Muysken,

1 Naturally, the loss of case that already took place in Vulgar Latin paved the way for introducing prepositions, and thus, analytic structures into the linguistic system.

2 In contrast, the preposition *a* occurs only 4,662,190 times (every 65th word) in the corpus.

2006: 157). The contact occurs between one variety of Latin American Spanish and a dialect of one Mesoamerican language. The contact situation involves both the individual speakers as well as the speech community as a whole. The socio-cultural setting can be described in terms of three variables: (1) physical space, comprised of both the ethnic space and the contact zone, (2) the social space, i.e. a set of both verbal and non-verbal behaviours practised by the speech community, and (3) cultural variables (Gómez Rendón, 2008: 13).

As already hinted at, bilingualism and multilingualism are often prerequisites for contact-induced change (Appel and Muysken, 2006: 153–163). Bilingualism may be initiated through a state of ‘diglossia’. The term originally denoted a compartmentalisation of two or more dialects of one language in mutually exclusive contexts (Ferguson, 1959). In modern contact research, diglossia also refers to two or more functionally compartmentalised languages (cf. Fishman, 1967). Generally, one language, the high variety H (here Spanish), is spoken in a political, administrative, and educational setting, whereas the other language, the low variety L (here an indigenous Mesoamerican language), is used in a family or community context (Gómez Rendón, 2008: 18). It follows that merely those people in Mesoamerica whose native tongue is not Spanish are usually bilingual.³ Since the beginning of the twentieth century the pressure on the part of Spanish has increased drastically due to the imminent urbanisation (Gómez Rendón, 2008: 19). Yet, while some speech communities have developed a sense of pride and maintain their native languages, others abandon their heritage completely which ultimately leads to language shift or even language death (Gómez Rendón, 2008: 22). Although this also holds true for the languages under scrutiny, considering these external factors for each language goes beyond the scope of this paper.⁴ According to Thomason (2001: 39), “for contact-induced change, the most important linguistic predictors are typological distance, universal markedness (with its ultimate appeal to ease of learning), and degree of integration within a linguistic system.”⁵ Regarding the Spanish preposition *de* in

3 This corresponds to the type III societal bilingualism described by Appel and Muysken (2006: 154).

4 These external factors or major social factors that may predict the outcome of contact-induced change include the presence/absence of imperfect learning, intensity of contact, and speakers’ attitudes towards the languages in contact (Thomason, 2013: 36).

5 The controversial concept of ‘markedness’ is not further discussed in this paper. In accordance with Haspelmath (e.g. 2006, 2008), it is presumed that frequency rather than markedness, among salience and recency, operates as a motivating factor in processing, language learning, and language change. (cf. Behrens and Pfänder, 2016).

particular, it can additionally be argued that it is, as a free morpheme, even more susceptible to borrowing, given that it fills different slots syntactically and fulfils various functions semantically, as will be illustrated in Table 1. In the following, a description of the linguistic consequences of language contact is given.⁶

2.2 *Grammatical Borrowing and Language Change*

First of all, the concepts of borrowing and code-switching, both of which constitute mixing strategies in bilingual discourse, must be understood as distinct from one another.⁷ Borrowing occurs when “items/structures are copied from language X to language Y, but without speakers of Y shifting to X” (Hickey, 2010: 18). On the other hand, code-switching does not comply with the second part of the definition, i.e. the speaker of Y shifts to X during the discourse. Thomason (2001: 132) defines code-switching as “the use of material from two (or more) languages by a single speaker in the same conversation”. Borrowing can be subdivided into lexical and grammatical borrowing. Following the view of Functional Grammar (Dik, 1997), nouns, verbs, adjectives, and adverbs form the lexicon and are thus involved in lexical borrowing. The remaining parts of speech serve a more abstract function and pertain to the grammar of a language. Intriguingly, as Bakker et al. (2008: 175–176) argue, adpositions represent an intermediate category in that “they may be either lexical or grammatical, depending on their status in the relevant grammar.”⁸ This makes the investigation of Spanish *de* even more intriguing.

There has been a longstanding interest in the borrowability of categories and contingent universals of borrowing.⁹ Weinreich, Labov, and Herzog (1968: 95–195) argue for five restrictions that are at play during language contact. Their formulation of these restrictions aims at explaining why certain categories are more susceptible to change than others. This includes: the constraints problem, the transition problem, the embedding problem, the actuation problem, and the evaluation problem. To exemplify, the reason why adpositions might be less frequently borrowed than discourse markers or connectors could

6 The plausibility or validity of possible internal linguistic factors is considered in section 5.

7 Note that the term ‘borrowing’ is misleading, as no linguistic material is borrowed and afterwards returned. ‘Copying’ would be more suitable term to describe the phenomenon (for a similar view see e.g. Hickey, 2010; Heine and Kuteva, 2007).

8 See Bakker and Siewierska (2002) for an elaborate survey on the particularities of adpositions.

9 While borrowability conventionally refers to the presence or absence of constraints operating in the borrowing process, Matras (2007: 31) uses the term to denote the likelihood with which a category is borrowed.

be accounted for by the transition problem. It makes reference to “the degree of integration of a foreign item or structure into a language” (Appel and Muysken, 2006: 162). The generalisations on the borrowability of categories put forward in the literature are either based on frequency (cf. Thomason and Kaufmann, 1988; Stolz and Stolz, 1996, 1997; Matras, 2007) or implicational (asymmetrical) relations, i.e. if category X is borrowed then category Y is borrowed as well (cf. Stolz, 1996a; Matras, 1998). Figure 1 shows a non-implicational borrowing hierarchy of lexical and grammatical items based on frequency proposed by Matras (2007: 61).

The borrowing hierarchy illustrates that free morphemes or open word classes are more frequently borrowed than bound morphemes or closed word classes. Conjunctions and discourse markers are among the high-ranking items, whereas adpositions are only borrowed with medium frequency, although all three are closed word classes comprised of free morphemes.

The distinction between lexical and grammatical borrowing is not clear cut and sometimes even fails to accurately describe a borrowing process. Therefore, Matras and Sakel (2007) developed the terms *matter* (MAT) and *pattern* (PAT) to categorise the ways in which elements are borrowed. According to Sakel (2007: 15),

We speak of MAT-borrowing when morphological material and its phonological shape from one language is replicated in another language. PAT describes the case where only the patterns of the other language are replicated, i.e. the organization, distribution and mapping of grammatical or semantic meaning, while the form itself is not borrowed. In many cases of MAT-borrowing, also the function of the borrowed element is taken over, that is MAT and PAT are combined. In other instances, MAT and/ or PAT are borrowed, but deviate considerably in their form or function from their original source.

In the same vein, Hickey (2010) distinguishes between supportive and innovative contact-induced linguistic transfer. Supportive transfer takes place when “a feature in language X is also found in language Y ensuring its continuation in

nouns, conjunctions > verbs > discourse markers > adjectives >
interjections > adverbs > other particles, adpositions > numerals >
pronouns > derivational affixes > inflectional affixes

FIGURE 1 A borrowing hierarchy based on frequency (Matras, 2007: 61)

the shift variety of language Y" (Hickey, 2010: 19). This corresponds to combined MAT/PAT-borrowing and PAT-borrowing only. Conversely, innovative transfer occurs when "a feature in language X is not found in language Y so that its transfer constitutes an innovation in Y" (Hickey, 2010: 19), which is subsumed under the notion of MAT-borrowing.

Any type of borrowing brings about language change. For the present study, a usage-based approach to language is adopted, which describes language change as a multi-step process (Croft, 2000, 2003; Aitchison, 2012). I agree that any "changes in language are interpreted as adaptations of the linguistic system to the changing circumstances of society, which determine the communicative needs of individual speakers and speech communities." (Gómez Rendón, 2008: 33). A usage-based account is therefore intrinsically linked to the experience of the speakers and speech communities. Here, one of the central concepts is entrenchment. The idea, which goes back to Langacker (1987: 59–60), "is that each time a word (or construction) is used, it activates a node or pattern of nodes in the mind, and frequency of activation affects the storage of that information, leading to its ultimate storage as a conventional grammatical unit" (Croft and Cruse, 2004: 292). Another concept that may come into play, especially when looking at MAT borrowing, is reanalysis. Reanalysis occurs on the syntagmatic level and presupposes a shift from an old to a new representation as a result of ambiguity (Langacker, 1977). In section 5, I will elaborate on these notions and show how they are relevant in the context of the borrowed *de*-constructions. Generally, it follows that I support functional explanations of borrowing.

2.3 *Mesoamerica as a Linguistic Area and Opportunity for Contact Research*

Thomason (2000: 311) defines a linguistic area as "a geographical region containing a group of three or more languages that share some structural features as a result of contact rather than as a result of accident or inheritance from a common ancestor". Research on linguistic areas, and with that the identification of areal features, has provided undisputable evidence for the possibility and reality of structural transfer. This reality was discarded by structuralists for a long time (cf. Thomason and Kaufmann 1988: 14–15). The Mesoamerican linguistic area stretches from Mexico, Belize, and Guatemala over Honduras, El Salvador, and Nicaragua to the North of Costa Rica and comprises fourteen language families (Suárez, 1983: xv–xvii).¹⁰

10 In the Appendix, an overview of the approximately 80 languages that are still spoken in this linguistic area is offered.

Mesoamerica offers a unique opportunity for the study of language contact and grammatical borrowing. Since the Spanish conquest of the Aztec empire in 1519, this wide range of structurally similar languages from a dozen different language families has been in contact with one language: Latin American Spanish. Effectively, the borrowing process is kept constant by drawing from the same source language. Although the limited scope of the paper does not allow for a detailed survey on the sociolinguistic situation in Mesoamerica, it ought to be emphasised that Spanish is largely perceived (or rather established) as the prestigious language of administration, education, and economy (Gómez Rendón, 2008: 18). Consequently, the indigenous population today is generally bilingual (see Escobar, 2004 for a detailed discussion of the social and linguistic aspects of bilingualism in Latin America). Similarly, Bakker et al. (2008: 169) argue that “although today the role of external sources – television, film, internet, newspapers – on languages is considerable, [...] in most cases the language used in the local communities themselves is the greatest determining factor for language change”. Bilingualism or multilingualism, therefore, becomes a driving force of change in Mesoamerican indigenous languages and other contact situations by extension (Appel and Muysken, 2006).¹¹

2.4 *The Preposition de in Latin American Spanish*

Latin American Spanish affects the linguistic structure of the indigenous languages today. At present, Hispanic dialectology identifies nineteen language varieties (Lipsky, 1994: 154). The classification is based on geographical, phonological, morphological, syntactic, and lexical criteria. Yet, the “grammar (morphology and syntax) variation between the several varieties of Spanish in Latin America is relatively modest, or even insignificant” (Bakker et al., 2008: 167). Therefore, a dialectal localisation exceeds the scope of this paper. Note, however, that there are differences potentially relevant to the context of the investigation of *de*. Consulting the CORPES, it may be established that in some varieties of Latin America Spanish, *de* has been entrenched with other grammatical elements to form larger constructions such as *de lo que* as a causal marker in Mexican Spanish or the Spanish spoken in Chile and Colombia.

As already mentioned in section 1, the preposition *de* surfaces frequently in numerous constructions and functions. *De* can occur as either a simplex preposition, i.e. *de* + NP/INF/DEI/ADV/ADJ, or as part of a complex preposition, i.e.

11 Albeit, indigenous languages have certainly also been in contact with each other, resulting in the Mesoamerican linguistic area, Spanish, due to its omnipresence initiated through colonial rule, seems to have the strongest impact on the Mesoamerican languages today.

delante de/debajo de/lejos de/cerca de + NP/INF/DEI/ADV/ADJ. The former is of particular interest to this study. The latter is only considered if a language does not borrow the set phrase as such but the construction as a template and replaces the Spanish adverb with the respective indigenous equivalent.¹²

In Table 1, based on Butt and Benjamin (2013: 470–487), the twelve functions relevant to this study are outlined with one example sentence per category taken from the questionnaire in the publications of the *Archivo de lenguas indígenas de México* (ALIM) series.

TABLE 1   The twelve functions of *de* attested in the ALIM

	Function	ALIM-questionnaire example no.	ALIM questionnaire example sentence
(1)	Possession	#77	<i>El pelo de Juan es negro.</i> 'Juan's hair is black.'
(2)	Locative	#028	<i>El pueblo está cerca/lejos de aquí.</i> 'The village is close/far from here.'
(3)	Ablative	#310	<i>Salió de la casa a saludarme.</i> 'He left the house to greet me.'
(4)	Origin	#137	<i>Juan es de Oaxaca.</i> 'Juan is from Oaxaca.'
(5)	Temporal	#422	<i>De noche tengo que caminar despacio.</i> 'During the night, I have to walk slowly.'
(6)	Causative	#425	<i>Murió de viruela.</i> 'He died from pox.'
(7)	Material	#438	<i>Las canastas se hacen de palma.</i> 'The baskets are made of palm tree.'
(8)	Attributive	#479	<i>Juan es el de enmedio.</i> 'Juan is the middle one.'
(9)	Partitive	#535	<i>Algunos de esos niños estan enfermos.</i> 'Some of these children are ill.'

12   At the end of section of 2.1., I hinted at the “integration” of the preposition ‘de’ into the system of indigenous languages once it has been borrowed. While a discussion thereof is neither the aim nor within the scope of this paper, there is some evidence supporting the validity of contact-induced grammaticalisation, such as word order change as a morpho-syntactic consequence which can be observed in Malinche, Mexicano and other Nahuatl varieties (cf. Heine and Kuteva, 2003).

TABLE 1   The twelve functions of *de* attested in the ALIM (cont.)

Function	ALIM-questionnaire example no.	ALIM questionnaire example sentence
(10) Set Construction	#214	<i>Ella te acusó de haberle robado.</i>
	#578	<i>'She accused you of stealing (from her).'</i>
	#589	<i>No quiero nada de eso.</i>
		<i>'I do not want anything from this.'</i>
		<i>Ese caballo es difícil de amansar.</i>
(11) Set Phrase	#187	<i>'This horse is difficult to calm.'</i>
		<i>El niño se durmió de nuevo. 'The child fell asleep again.'</i>
(12) <i>Dequeísmo</i>	#247	<i>Dudo de que venga Juan. 'I doubt that Juan will be coming.'</i>

While the majority of functions become evident from the examples, a few remarks on *dequeísmo* are in order. The term *dequeísmo* refers “to the unnecessary presence of the preposition *de*” (Bentivoglio and Sedano, 2011: 178). Some speakers use *de que* instead of *que* after belief and communication verbs (Butt and Benjamin, 2013: 470). The phenomenon is highly stigmatised. Bentivoglio and D’Introno’s (1977) findings partly validated the correlation between linguistic and social variables. Conversely, Schwenter (1999) found that the presence of *de* is conditional upon four variables: a first-person subject, spoken mode, past and present tenses, and lack of intervening words. Accordingly, he proposes that *de* serves as an evidentiality marker. Finally, Bentivoglio and Sedano (2011) conducted a study on morphosyntactic variation in Spanish-speaking Latin America. They found that since the 1950s, *dequeísmo* surfaces frequently in the spoken Spanish of South America (Bentivoglio and Sedano, 2011: 178). Whether the languages of Mexico have borrowed the *dequeísmo* structure is exceptionally interesting for the aim of this study, as it would uncover whether the functional properties of an element play a key role in grammatical borrowing and whether most borrowing behaviour can be explained based on frequency and other processing factors.

Given the numerous functions that *de* assumes in Spanish, it is interesting to explore which of these are particularly receptive to borrowing. Earlier

studies, which will be outlined in the following, already recognised the significance of *de* during language contact in Mesoamerica.

2.5 Previous Studies

Some of the languages of Mesoamerica have already been subject to intensive research regarding language contact with and borrowing from Spanish. In the following, the findings relevant to this study, i.e. reporting on *de*, are presented.

Hekking and Bakker (2007) and Bakker et al. (2008) investigate two dialects of Otomi: the dialect of Santiago Mexquititlán and that of San Miguel. They found that “more analytical [strategies] on the basis of Spanish loans, notably to mark instrument, cause, manner and spatial orientation” replace former synthetic relation marking strategies (Hekking and Bakker, 2007: 444). Zooming in on *de*, Hekking and Bakker (2007: 449–450) identify three functions of *de* in Otomi: *de* indicating (1) location/origin, (2) possession, (3) partitive and ‘all kinds of relationships’.

- (1) Otomi (Hekking and Bakker, 2007: 449–450)

<i>Ya</i>	<i>dá=pengi</i>	<i>de</i>	<i>Japla</i>
already	1 SG.PST=come.back	from	Japan

‘I have already come back from Japan.’

- (2) Otomi (Hekking and Bakker, 2007: 449–450)

<i>Nixi</i>	<i>Independensya</i>	<i>nixi</i>	<i>Reforma</i>	<i>nixi</i>	<i>Rebolusyon</i>
neither	Independence	nor	Reform	nor	Revolution

<i>bi=nkambyo</i>	<i>yá</i>	<i>kostumbre</i>	<i>de</i>	<i>ya</i>	<i>ñāñho</i>
3SG.PST =change	3SG.POSS	habit	of	DEF.PL	Otomi

‘Neither the Independence, nor the Reform, nor the Revolution have changed the habits of the Otomis.’

- (3) Otomi (Hekking and Bakker, 2007: 449–450)

<i>Na</i>	<i>de</i>	<i>ge’u</i>	<i>i=ndude</i>	<i>kaha</i>
one	of	DEM.3SG	3SG.PRS=carry	box

‘One of them carries the box.’

- (4) Otomi (Hekking and Bakker, 2007: 449–450)

<i>Di=ñä-wi</i>	<i>de</i>	<i>byaje</i>	<i>pa</i>	<i>Maxei</i>
1 SG.PRS =talk-INCL.DU	ref	trip	to	Queretaro

‘We talk about the trip to Queretaro.’

It appears that Otomi speakers resort to the Spanish functional loans to fill functional gaps (Bakker et al., 2008: 226). Although Otomi lacks prepositions, it features deverbal elements serving an adverbial function. Therefore, “it may be argued from the perspective of Otomi grammar, these borrowed prepositions should be analysed as adverbs on functional grounds and should therefore be added to the lexical part of the borrowed inventory rather than to the grammatical part” (Hekking and Bakker, 2007: 458).

Modern Nahuatl has seen similar structural changes. Hill and Hill (2004) argue that a shift in word order was brought about by the incorporation of Spanish prepositions, with Classical Nahuatl changing from a head-final type to a head-initial type which is prominent in modern Nahuatl varieties. In Classical Nahuatl, location was encoded via postpositions; today, those functions are mostly fulfilled by borrowed Spanish prepositions. *De* as combined MAT/PAT loan is particularly prominent in Malinche Mexicano locative and possessive constructions. In some constructions, the use of *de* “seems to be based on a process whereby *de* has come to be seen as equivalent to the Nahuatl adjunct *in*”, e.g. *de* marking a relative clause (Hill and Hill, 2004: 32, 35).¹³ As for *de* in genitive constructions, a loss of Nahuatl possessive morphology and the adjunct *in* can be observed in (5b), as opposed to the equivalent structure in Classical Nahuatl presented in (5a).¹⁴

- (5a) Classical Nahuatl (constructed)
in   *mo-xōlō-uh*
 DET   2SG.POSS-servant-POSS
 ‘your servant’

- (5b) Malinche Mexicano (Hill and Hill, 2004: 40)
servidor   *de*   *teh*
 servant   *of*   2SG
 ‘your servant’

Turning to *de* in locative constructions, the preposition surfaces either in locative constructions with relational nouns, where *in* would have originally been

- 13 Notice that the function of *in* has not yet been fully determined. While Hill and Hill (2004) describe the element as an ‘adjunct’, Launey (2011) or Lastra (1980), amongst others, refer to *in* as a ‘determiner’ or ‘article’.
- 14 Hill and Hill (2004) propose a correlation between the presence of *de* in possessive constructions and the alienability of possessee. More specifically, inalienable nouns, including kin terms and body parts, are found to be significantly less prone to co-occur with *de*.

present, or it appears in fixed Nahuatl locative expressions, e.g. *tlazintlan* ‘at the place below something’ combined with nouns denoting place. Compare examples (6) and (7), where the former illustrates the construction after Spanish influence and the latter a construction found in writings of the 16th century. Moreover, the preposition has been re-interpreted and is used as an equivalent to complex Spanish prepositional phrases, e.g. *abajo de/afuera de*.

- (6) Malinche Mexicano (Hill and Hill, 2004: 43)

<i>tlatzintlan</i>	<i>de</i>	<i>Chapila</i>
below	of	Chiplio
‘below Chiplotio’		

- (7) Nahuatl (Lockhart, Berdan, and Anderson, 1986: 98)

<i>nohpalocan</i>	<i>tlatzintlan</i>
Nohpalocan	below
‘below Nohpalocan’	

It becomes evident that the construction has undergone a constituent order change from NLOC to LOCN copying Spanish syntax in order to accommodate *de*. Fascinatingly, Hill and Hill (2004: 45) also found that the constituent order remains LOCN although both *de* and possessive morphology are absent. According to the authors, “this suggests strongly that locative constructions in Malinche Mexicano are becoming genuinely ‘prepositional’, such that speakers feel no motivation to add the relational possessive morphology” (Hill and Hill, 2004: 45).

Chamoreau (2007) reports on grammatical borrowing in Purepecha. As in Otomi and Nahuatl, *de* is featured in locative constructions. Overall, the contact with Spanish syntax has given rise to nine constructions described in terms of four types, with *de* occurring as an element of Type 3 (Chamoreau, 2007: 477). Type 3 refers to hybrid constructions that encompass both Spanish and Purepecha elements. Chamoreau (2007: 477) states that the *de*-locative-construction is an example of code-mixing, as it exclusively emerges in a limited number of expressions in comparative constructions. Either it occurs with Spanish *mas* (<más) ‘more’ and the relator *ke* (<que) ‘that’ (8) or with the Purepecha degree calque *sáni=teru* ‘more’ (Chamoreau, 2007: 478).

- (8) Purepecha (Chamoreau, 2007: 478)

<i>Inte</i>	<i>atfa</i>	<i>mas</i>	<i>khéri-e-s-ti</i>	<i>ke</i>	<i>de</i>	<i>fo</i>
DEM	man	more	old-PRED-AOR-3SG.ASS	that	of	here

anapu   *yamintu*
 ORIG   all
 ‘This man is older than (of) all the others here.’

There are several comparative studies on borrowing in the Mesoamerican realm. Stolz and Stolz (1996: 88) assert that certain borrowing patterns seem to be omnipresent and occur with high frequency and wide distribution. In their sample of 29 Mesoamerican languages, nine languages, namely Chontal, Nahuatl, Otomi, Pipil, Popoluca, Totonac, Yucatec, Zoque, and Zapotec have borrowed *de*. Stolz and Stolz (1996: 107–109) single out Modern Nahuatl and Yucatec for special discussion. In the Yucatec dialect spoken in X-Hazil Sur, *de* optionally functions as a postnominal attributive marker (9). Thus, the semantics of the preposition have been ‘extended’ which constitutes a case of MAT-borrowing.

- (9) Yucatec Maya (Stolz and Stolz, 1996: 108)
<i>k-a</i>	<i>kaxt-ik</i>	<i>ka'</i>	<i>p'éel</i>	<i>bola</i>	(de)	<i>chak</i>
IPFV-2SG	such- TR.IPFV	NUM	CLF.INAN	ball	of	red
- ‘You are looking for two red balls.’

Based on these findings, Stolz (1996b) compares the grammatical hispanisms found in Mesoamerica to those in South America and Austronesia. In contrast to Middle America, none of the languages of South America and Austronesia in Stolz’ sample borrow *de* – albeit exhibiting similar borrowing preferences (1996b: 138, 143–145). Stolz concludes that *de* does not belong to the core of Spanish function word loans.¹⁵ However, the results seem to support the presumption that a borrowed preposition presupposes the borrowing of a conjunction or discourse particle. Therefore, Stolz (1996b: 152) makes the following prediction: “For any given $L_{(MSP)}$, iff it has borrowed function words from Spanish at all and iff the number of borrowed items exceeds 2, there is a maximum probability that it has borrowed at least one member of $C_{(MSP)}$ which is preferably *pero* ‘but’.”¹⁶ Stolz et al. to appear) conducted a study on the borrowing of *pero* ‘but’ using the same data source (ALIM) chosen for this study.

15 According to Stolz (1996b: 147), the four ‘core’ function words that are borrowed across Amerindia and Austronesia are *antes* ‘before’, *o* ‘or’, *pero* ‘but’, and *porque* ‘because’.

16 $L_{(MSP)}$ and $C_{(MSP)}$ refer to the languages (L) of Middle America (L_M), South America (L_S) as well as the Philippines and Oceania (L_P) and their Circumpacific isoglosses (C), respectively (Stolz, 1996b: 138).

Section 5 will therefore discuss whether the results of this study compared to those of Stolz et al. (to appear) validate this typological prediction.

Robbers and Hober (2018) investigate the prevalent verb-framed spatial deixis in Mesoamerican languages and detect an increasing complexity of the ablative construction via the intrusion of *de*. For example, “Sierra Popoluca employs deictic locative adverbs that are derived from demonstratives which serve as deictic roots and take locative suffixes” (Robbers and Hober, 2018). Yet, as for the SOURCE construction, Bible excerpts and examples taken from de Jong Boudreault (2009) reveal that Spanish *de* has found its way into the encoding of spatial relations, see example (10) for *de* attested in the Bible.

(10) Sierra Popoluca (Luke 13:31)

<i>Nicsim,</i>	<i>pūt-i</i>	<i>de</i>	<i>yiim</i>	<i>porque</i>	<i>jém</i>	<i>Herodes</i>
go.away: 414	exit-IMP	from	here	because	DET	Herod

m-iccaa-too-ba.

2SG-kill-DESID-IPFV

‘Leave and go away from here, because Herod wants to kill you.’

To put it succinctly, the previous studies clearly demonstrate three points: first, adpositions present a borderline case between grammatical and lexical borrowing. Second, a chain reaction may be initiated by the intrusion of the preposition *de* and result in a re-organisation of structural features. Third, *de* assumes different, largely unpredictable functions in the various replica languages. Yet, what we are missing so far is a qualitative, functional, and comparative analysis on the intrusion of Spanish *de* into the languages. The subsequent sections seek to fill this gap in contact research.

3 Data and Methodology

The data used for this study were taken from the ALIM-series which consists of 35 volumes at the time of writing. The series was launched in 1976 and constitutes an ever-growing data-base for languages of Mexico (and Guatemala). For each language, information on phonology, morphology, syntax, and lexicon is provided. For the purpose of this study, the focus lies on the syntax part of the publications. The same questionnaire was issued for each language to ensure the comparability of data. The questionnaire entails 594 subsections. The subsections consist of Spanish stimuli and their morpheme-glossed equivalents in the respective Mesoamerican language. All Spanish stimuli employing *de* and

renderings in the Mexican languages were extracted and the preposition's function in each sentence identified. Further, example sentences that do not employ *de* but represent functionally similar constructions were looked at in order to establish which factors might influence its employment. Subsequently, all ALIM-publications were cross-checked for *de* and any occurrence classified as either MAT or combined MAT/PAT borrowing. Notice that the identification or classification of MAT is neither trivial nor unproblematic. If one wanted to be meticulous, then the idea of pure MAT-borrowing of *de* is somewhat inaccurate, as any borrowing of the preposition creates structural changes that are indirectly linked to the structure of Spanish. However, for the purpose of this paper and to show that the preposition assumes innovative functions in the recipient languages, it was decided that if *de* occurs in the Mesoamerican rendering without being featured in the Spanish stimulus, it will be analysed as a MAT borrowing.

What is more, notwithstanding the numerous advantages of the ALIM-series, they do not offer diachronic data. While there are cases of rapid contact-induced change, e.g. Media Lengua (Muysken, 1994: 207–211; Gómez Rendón, 2005: 39–57), language contact often takes place over a longer period of time. Thus, Bakker et al. (2008: 169) quite rightly point out that “an adequate database should also contain samples from earlier stages of the target language, preferably also from before the contact.” Due to the limited scope of this paper and the lack of documentation regarding some of the Mesoamerican languages, this endeavour has to be postponed. The hypothesis for this study echoes that of Bakker et al. (2008: 174). Thus, it is hypothesised that, (a.) due to its moderate ranking on the borrowing hierarchy and (b.) its high frequency in the donor language, the Spanish preposition *de* is borrowed with medium frequency. It is further assumed that (c.) the less agglutinating the replica language and (d.) the higher the level of bilingualism in a speech community, the more likely it is that the speakers borrow *de*.

To elucidate the extent to which Spanish *de* has intruded into Mesoamerican languages from a synchronic perspective, the following research questions are addressed:

- (i) Which languages of Mexico have borrowed *de*?
- (ii) Which responses to the Spanish stimuli in the data give evidence of either combined MAT/PAT-borrowing or MAT-borrowing?
- (iii) If only MAT is borrowed, what functions does *de* fulfil in the respective languages?
- (iv) What further linguistic consequences does the intrusion of *de* have on their structure?

- (v) Do the results validate the implicational prediction made by Stolz (1996b) as to the hierarchical relation of borrowing between prepositions and conjunctions?

4 Results

Overall, there are as many as 93 Spanish sentences giving evidence of *de* in the ALIM-questionnaire. These sentences were manually identified and extracted. Note that the sentence #550 employs *de* twice for two different functions, namely ablative and partitive. Of the 35 reviewed languages, seven (20%) exhibit *de* or a variant thereof. The languages that employ *de* are Chontal, Mexicanero, the Acaxochitlán variety of Nahuatl (henceforth Nahuatl), Otomi, Yucatec, Zoque, and Zapotec. All seven languages exhibit combined MAT/PAT-borrowing. The preposition is only used in a subset of the stimuli that contain it. Table 2 shows the degree of Hispanisation of each replica language – if one identifies the employment of *de* as an indication of strong Hispanisation.¹⁷ The degree of Hispanisation results from the number of *de* occurrences in a target language (T_{de}) relative to the number of *de* occurrences in the source language (S_{de}).

TABLE 2 Degree of Hispanisation among the Mesoamerican languages employing *de* in the ALIM-questionnaire

Mesoamerican Languages employing <i>de</i> as combined MAT/PAT	T_{de}/S_{de}	Degree of Hispanisation
Mexicanero (Uto-Aztecan)	73/94	77.66%
Nahuatl (Uto-Aztecan)	36/94	38.30%
Zapotec (Oto-Manguean)	28/94	29.79%
Zoque (Mixe-Zoque)	8/94	8.51%
Yucatec (Maya)	5/94	5.32%
Otomi (Oto-Manguean)	4/94	4.26%
Chontal (Tequistlatecan)	2/94	2.13%

¹⁷ Evidently, only combined MAT/PAT-borrowing is considered here.

TABLE 3 Innovative Transfer of *de* among the Mesoamerican languages in the ALIM-questionnaire

Mesoamerican Languages employing <i>de</i> as MAT	MAT	MAT/B	ITS
Yucatec (Maya)	4	4/9	44.4%
Zoque (Mixe-Zoque)	5	5/13	38.46%
Mexicanero (Uto-Aztecan)	34	34/107	31.78%
Nahuatl (Uto-Aztecan)	9	9/45	20.00%
Zapotec (Oto-Manguean)	3	3/31	9.68%

Mexicanero, Nahuatl, and Zapotec exhibit the highest degree of Hispanisation with a distinct gap between Mexicanero and the latter two. Otomi, Yucatec, and Chontal are the least hispanised. Zoque displays a low to medium degree of Hispanisation.

Additionally, Mexicanero, Nahuatl, Zoque, Yucatec, and Zapotec also show MAT-borrowing only. Table 3 gives the absolute number of occurrences of MAT-borrowing, the proportion of MAT in relation to the sum of all borrowings (B), and the resulting innovative transfer score (ITS) in the respective languages.

Of all the replica languages that employ *de* as MAT, Yucatec displays the highest ITS, followed by Zoque and Mexicanero. Nahuatl and Zapotec exhibit an ITS of 20% and approx. 10%, respectively. The ITS ought to be taken with a grain of salt, as the high score of Yucatec does not indicate that it employs *de* in a wide variety of innovative functions but results from rather few absolute borrowing instances in total. Indeed, three out of the four MAT-borrowings occur in the same temporal construction in ALIM sample sentences #288, #289, and #581, see example (11) for an illustration.

- (11) Yucatec Maya (Stolz et al., 2012: 119)
- #288 *sùuk-a'n* *tèen* *in* *líik'-il* *deh* *ha'tskab*
accustomed-RES 1SG 1SG get.up-INTR.IPFV in early
'I am used to getting up early.'

In the following, the results are delineated in two steps. First, combined MAT/PAT-borrowing is analysed in detail focussing on each function consecutively. Second, the MAT-borrowing as found in Mexicanero, Nahuatl, Zoque, Yucatec, and Zapotec is briefly outlined.

4.1 Combined MAT/PAT-borrowing

4.1.1 Possession

De functioning as a marker of possession in the broadest sense of the concept, i.e. indicating an asymmetrical relation between two entities, is only borrowed by Mexicanero and Nahuatl. Mexicanero employs *de* in half of the instances, whereas Nahuatl only resorts to *de* in four out of 23 example sentences.

As can be asserted on the basis of Table 4, Nahuatl generally employs *de* in the same possessive constructions as Mexicanero, i.e. in #152, #515, and #516. Yet, Nahuatl accounts for one instance, namely #158, where Mexicanero does not feature *de*.

- (12) Mexicanero de la Sierra Madre Occidental (Canger, 2001: 94)
- #158 edubijes yel nombre siwa-t
Eduviges 3SG name woman-SG
'Eduviges is a woman's name.'

TABLE 4 MAT/PAT-borrowing: *De* functioning as a marker of possession

ALIM	Mexicanero	Nahuatl	Otomi	Zoque	Yucatec	Zapotec	Chontal
#009	de						
#096	de						
#131	de						
#133	de						
#152	de	de					
#158		de					
#374	de						
#376	de						
#513	de						
#514	de						
#515	de	de					
#516	de	de					
#517	de						
Sum	23	12/23	4/23	0/23	0/23	0/23	0/23
Not borrowed in	#076, #077, #128, #473, #474, #475, #476, #477, #481, #512						

- (13) Nahuatl de Acaxochitlán, Hidalgo (Lastra, 1980: 67)
- #158 *edubixes, i-toka de siwa -λ*
Eduviges 3SG.POSS-name of woman- ABS
'Eduviges is a woman's name.'

It appears that Mexicanero does not employ any possessive morphology here, and thus, the relation between *nombre* 'name' and *siwat* 'woman' is not overtly marked. Alternatively, one could argue that *siwat* is an adjectival attribute meaning 'female/feminine' and that no possessive relation is present in (12a). Nahuatl de Acaxochitlán, on the other hand, resorts to both Spanish *de* and Nahuatl possessive morphology. This finding somewhat echoes that of Hill and Hill (2004: 45), yet in contrast to locative contractions, the order of constituents in the possessive construction is the same in Spanish and Nahuatl, i.e. the possessor precedes the possessee.

4.1.2 Locative

Mexicanero, Nahuatl, Otomi, and Zapotec attest to *de* in locative constructions, see Table 5. As in Spanish, borrowed *de* as a locative marker primarily occurs in a complex preposition, i.e. it is preceded by an adverb specifying the location. There is only one sentence in the sample, namely #289 *No me acostumbro a la comida de aquí* 'I cannot get used to the food from here', where one encounters *de* as a simple preposition specifying location. Notice, however, that this phrase may well be alternatively classified as origin rather than

TABLE 5 MAT/PAT-borrowing: *De* functioning as a locative marker

	ALIM	Mexicanero	Nahuatl	Otomi	Zoque	Yucatec	Zapotec	Chontal
#028		de	de	de			de	
#048		de	de					
#050		de						
#053		de						
#058		de						
#289			de					
#450		de		de				
#480		de						
Sum	9	7/9	3/9	2/9	0/9	0/9	1/9	0/9
Not borrowed in #466								

locative. Intriguingly, Mexicanero, the Mesoamerican language of the sample that shows the highest degree of Hispanisation, does not borrow *de* here, whereas Nahuatl does. It appears that the borrowing of *de* in a locative sense is always interpreted as part of a larger construction including an adverb. Generally, the adverbs are taken from the lexicon of the respective Mesoamerican languages. In Mexicanero, however, many adverbs are clearly Spanish loans (e.g. *serka* (<cerca) ‘near’ in #028 and *enfrente* ‘opposite’ in #059). Yet, given that the adverb co-occurring with locational *de* is not required to be of Mexicanero origin, it seems reasonable to assume that such constructions are still the result of combined MAT/PAT borrowing.

Sentence #028, i.e. ‘the village is far from here,’ appears particularly susceptible to the intrusion of *de*, as all respective renderings make use of it in this instance, as shown by examples (14), (15), and (16).

- (14) Nahuatl de Acaxochitlán, Hidalgo (Lastra, 1980: 45)
 #028 *in alte:pe-λ aʔmo wehka de nika(n)*
 DET village-ABS NEG far from here
 ‘The village is far from here.’

- (15) Otomi de San Andres Cuexcontitlan (Lastra, 1989: 55)
 #028 *ni rλ hníni yákʔu de gěngwa*
 DEM DET villiage far from here
 ‘The village is far from here.’

- (16) Zapoteco del Istmo (Pickett and Embrey, 1974: 52)
 #028 *zitu de rarí nuu giji ka*
 far from here be village this
 ‘The village is far from here.’

This pattern in borrowing might be brought about by the high frequency of the distal/proximal adverbs combined with deictic elements in discourse. Intuitively, speakers generally converse more often about ‘how far/near’ an entity is in relation to the speaker and/or addressee than where that entity is specifically located in relation to another entity, e.g. ‘in front of’ or ‘opposite of’.

4.1.3 Ablative

De as an ablative marker is the second most widely distributed MAT/PAT-borrowing. Here, the preposition is not only employed by five out of the seven languages to indicate SOURCE but also surfaces rather frequently in Mexicanero, Nahuatl, and Zapotec.

TABLE 6 MAT/PAT-borrowing: *De* functioning as an ablative marker

	ALIM	Mexicanero	Nahuatl	Otomi	Zoque	Yucatec	Zapotec	Chontal
#257		de	de					
#310		de		de			de	
#435		de						
#453		de	de				de	
#454		de						
#456		de	de				de	
#465		de	de				de	de
#499		del					de	
#550		de	de					
Sum	9	9/9	5/9	1/9	0/9	0/9	5/9	1/9

As illustrated by Table 6, Mexicanero resorts to ablative *de* in all instances, which hints at a complete penetration of the Spanish function word into the encoding of the SOURCE relation in the language. Note that the Mexicanero rendering of #499 exhibits a different ‘form’ of *de*. In Spanish, *del* is the result of a blending process of *de* and the masculine definite article *le* and is used in combination with a masculine noun.

- (17) Mexicanero de la Sierra Madre Occidental (Canger, 2001: 149)
- #499 *in taka-t del¹⁸ u-kisa del pa in kal*
DET man-SG that PST-leave from in DET house
- ni-pa ki-mikti in pelo*
3SG. POSS-in 3SG.O-kill DET dog
- ‘The man left the house where they killed the dog.’

As shown in example (17), *del* in Mexicanero does not preserve this original meaning or function. The Uto-Aztec language does not distinguish grammatical gender; the notion of masculine grammatical gender is lost during the borrowing process. Further, the Mexicanero element *in* already denotes

18 This occurrence of *del* constitutes an instance of MAT-borrowing and will be discussed in section 4.2.

definiteness, and hence the notion of definiteness in *del* is either lost or double-marked. It remains to be explored whether *del* occurs in free variation with *de* and has thus been re-interpreted as an allomorph of the preposition or whether *del* and *de* are employed in complementary distribution.

As for Nahuatl and Zapotec, Table 6 shows that ablative *de* has made a notable intrusion into their spatial systems. The two languages share the borrowing of ablative *de* in #453, #456, and #465. The sentences make reference to motion verbs. Interestingly, while *de* is frequently employed in the declarative, the respective complex interrogative *de dónde* ‘where from’ in #454 does not surface. Note also that the SOURCE relation appears to be in a shifting state. In Zapotec the motion verb *salir* ‘leave’ is not always rendered in combination with *de*, compare examples (18a) and (18b).

(18a) Zapoteco del Istmo (Pickett and Embrey, 1974: 112)¹⁹

#499 *bi-ree ngiiu ke de ra yoo, ja ra*
 PFV-leave man this from LOC house this LOC

bi-iti bi'ku ke
 PFV-die dog this

‘The man left the house where they killed the dog.’

(18b) Zapoteco del Istmo (Pickett and Embrey, 1974: 119)

#550 *bi-ree ka nigiiu ra yoo čonna gá.*
 PFV-leave PL man LOC house three after three

‘The men left the house one/two/three after one/two/three.’

Lastly, Otomi also accounts for one instance of borrowed *de* indicating ablative (#310) where it is again the motion verb ‘leave’ that triggers the usage. Accordingly, it may be argued that the most frequent motion verbs in the recipient languages are the first to be affected by ablative *de*.

4.1.4 Origin

Regarding *de* functioning as a marker of origin, one obtains a very clear, non-controversial picture. The encoding of origin in both Mexicanero and Nahuatl seems to be completely penetrated by *de*, see Table 7. Here, both declarative (#137, #518, #519, #521, #522) and interrogative mood (#138, #139, #140) expressing origin equally resort to *de*.

19 Note that in this ALIM publication, the stimulus usually listed under #499 is listed under #498.

	ALIM	Mexicanero	Nahuatl	Otomi	Zoque	Yucatec	Zapotec	Chontal
#137		<i>de</i>	<i>de</i>				<i>de</i>	
#138		<i>de</i>	<i>de</i>				<i>de</i>	
#139		<i>de</i>	<i>de</i>				<i>de</i>	
#140		<i>de</i>	<i>de</i>				<i>de</i>	
#518		<i>de</i>	<i>de</i>					
#519		<i>de</i>	<i>de</i>					
#521		<i>de</i>	<i>de</i>					
#522		<i>de</i>	<i>de</i>					
Sum	8	8/8	8/8	0/8	0/8	0/8	4/8	0/8

complex interrogation adverb (cf. Pickett, Black, and Cerqueda, 1998: 81).²¹ Diachronically, it would be interesting to explore whether *de* in an interrogative construction without explicit Ground was initially introduced into Zapotec as a genuine preposition and then underwent a grammaticalisation process where it became a bound morpheme. Crosslinguistically, differences in the structure or encoding between deictic interrogatives and interrogatives with an explicit Ground are frequently observed (cf. Stolz et al. 2017).

4.1.5 Temporal

Mexicanero, Nahuatl, and Yucatec attest to *de* functioning as a temporal marker denoting duration or a span of time. Mexicanero has a 100% application rate, whereas Nahuatl and Yucatec make use of *de* and *deh* respectively in half of the four ALIM-stimuli, see Table 8.²²

Nahuatl employs *de* in #422, but the preposition is absent from #183, although the phrase in Spanish is given as *de noche* ‘during the night’ in both stimuli, compare *de λayuwá* in #422 and *yawak* in #183. Yucatec does not show this variation in expressing *de día/noche* but consistently expresses the temporal relation as either *deh k’iin* ‘during the day’ or *deh áak’ab* ‘during the night’, respectively, see example (20).

(20) Maya Yucateco de X-Hazil Sur, Quintana Roo (Stolz, Stolz, and Verhoeven, 2012: 101)

#183   *ya’b   u   wèen-el   deh   k’iin/áak’ab*
a lot   3SG   sleep-INTR.IPFV   **during**   day/night
‘He sleeps a lot during the day/night.’

TABLE 8   MAT/PAT-borrowing: *De* functioning as a temporal marker

	ALIM	Mexicanero	Nahuatl	Otomi	Zoque	Yucatec	Zapotec	Chontal
#183		<i>de</i>				<i>deh</i>		
#324		<i>de</i>	<i>de</i>					
#421		<i>de</i>				<i>deh</i>		
#422		<i>de</i>	<i>de</i>			<i>deh</i>		
Sum	4	4/4	2/4	0/4	0/4	3/4	0/4	0/4

21   Regarding terminology, I adapt FIGURE and GROUND from Talmy (1978).
22   *Deh* in Yucatec is not considered as phonological deviant from *de*, the orthography rather reflects the missing final glottalisation.

TABLE 9 MAT/PAT-borrowing: *De* functioning as a causative marker

	ALIM	Mexicanero	Nahuatl	Otomi	Zoque	Yucatec	Zapotec	Chontal
#424		<i>de</i>	<i>de</i>				<i>de</i>	
#425		<i>de</i>	<i>de</i>		<i>de</i>		<i>de</i>	
Sum	2	2/2	2/2	0/2	1/2	0/2	2/2	0/2

4.1.6. Causative

In the ALIM-questionnaire, there are only two causative constructions. Both occupy the intransitive verb *morir* ‘die’ at their verbal slot. Effectively, any conclusions drawn on the basis of Table 9 ought to be taken with caution.

Mexicanero, Nahuatl, and Zapotec employ causative *de* in both instances. Zoque makes use of it in the interrogative but not in the declarative construction, compare examples (21a) and (21b). It appears that Zoque circumvents the usage of *de* here by resorting to another construction.

(21a) Zoque de Chimalapa, Oaxaca (Knudson, 1980: 122)

#424 *ti modo kaʔh-wi ka min t̥iyu*
what way die-PFV DEM 2SG.POSS uncle
‘What did your uncle die from?’

(21b) Zoque de Chimalapa, Oaxaca (Knudson, 1980: 122)

#425 *kaʔh-wi de hawe puʔci*
die-PFV of pox (yellow sand)
‘He died from pox.’

Similar to the observation made in section 4.1.4, Zapotec again uses a complex interrogative adverb probably composed of the Zapotec adverb *ži* ‘what’ and *dé* (<*de*) to inquire the causer in #424.

(22) Zapoteco del Istmo (Pickett and Embrey, 1974: 104)

#424 *ži-dé gu-ti stiú luʹ*
what-from PFV-die.3SG uncle 2SG.POSS
‘What did your uncle die from?’

TABLE 10 MAT/PAT-borrowing: *De* functioning as a marker of material

	ALIM	Mexicanero	Nahuatl	Otomi	Zoque	Yucatec	Zapotec	Chontal
#438		de	de		de		de	
#439		de	de				de	
#520		de	de			deh	de	de
#527		de	de		de	deh	de	
Sum	4	4/4	4/4	0/4	2/4	2/4	4/4	1/4

4.1.7 Material

De as a marker of material is the most widely distributed MAT/PAT-borrowing. Here, the preposition is employed by six out of the seven languages to indicate material. Mexicanero, Nahuatl, and Zapotec make use of material *de* in all four instances, see Table 10.

The sentences #438 and #439 are both *se hacen de* ‘are made of’-constructions where the entity described and the material it is made of are syntactically disjoint, e.g. *las canastas se hacen de palma* ‘the baskets are made from palm tree’. In #520 and #527, the two elements form a single constituent, e.g. *cinturón de piel* ‘belt made of leather’. Yucatec employs *deh* (<*de*) only in the latter construction. Zoque, on the other hand, resorts to *de* in one of either construction. While an explanation as to why Zoque only sporadically employs the preposition cannot be offered, apart from suggesting that the innovation is still in the diffusion state, examples (23a) and (23b) clearly demonstrate that the intrusion of *de* initiates a ‘chain-reaction’ with structural consequences in Zoque, i.e. changes in the order of the constituents, from SOV (23a) to SVO (23b).

(23a) Zapoteco del Istmo (Pickett and Embrey, 1974: 102)

#439   *te   suyu?   nas   iy   cik-suk-pa*
         that   pot   clay   there   make-3PL-IPFV
         ‘The pots are made from clay.’

(23b) Zapoteco del Istmo (Pickett and Embrey, 1974: 102)

#438   *te   pok   iy   cik-suk-pa   de   hohc*
         that   basket   there   make-3PL-IPFV   from   palm tree
         ‘The baskets are made of palm tree.’

Chontal employs *de* in #520, the usage of which might well be triggered by the lexical loan *puro* ‘pure’ adjacent to the preposition. Conversely, In #527 the informants resort to *xaage* ‘which’. The Chontal element surfaces in the same position as *de* and appears to fulfil roughly the same function. Hence, the two options of expressing material may be equally available to Chontal speakers.

(24a) Chontal de San Pedro Huamelula (O’Connor, 2014: 161)
#520 *layčox-’ma=ya’ l-ay-k’ay de puro esmi*
live.with- 1PFV.SG=1SG.AGT DET-1SG.POSS-sandal of pure leather
‘I have a belt made of leather.’

(24b) Chontal de San Pedro Huamelula (O’Connor, 2014: 161)
#527 *el pared xaage ladriyu max uf’tya ke l-askwilye’*
DET wall which brick more strong than DET -adobe
‘The wall of bricks is stronger than that of adobe.’

4.1.8   Attributive

Mexicanero and Nahuatl attest to borrowed *de* in a construction where the preposition serves to indicate the attributes or (physical) properties of an entity, see Table 11. Nahuatl only employs *de* in #524, *kostal de n kafe* ‘bag/sack of coffee’ (Lastra, 1980: 120). The Nahuatl rendering of #020 and the Spanish stimulus are structurally different. While Spanish uses the interrogative *de qué* ‘of which’, Nahuatl uses another strategy, i.e. *kenin lamati* ‘how looks’ (Lastra, 1980: 44).

TABLE 11   MAT/PAT-borrowing: *De* functioning as an attributive marker

	ALIM	Mexicanero	Nahuatl	Otomi	Zoque	Yucatec ²³	Zapotec	Chontal
#020		<i>de</i>						
#479		<i>del</i>						
#524		<i>de</i>	<i>de</i>					
Sum	3	3/3	1/3	0/3	0/3	0/3	0/3	0/3

23   Notice that while the ALIM-questionnaire does not attest to *de* functioning as an attributive marker in Yucatec, Stolz and Stolz (1996: 108) and Bohnemeyer and Stolz (2006) find the function attested in their data.

Mexicanero makes use of the preposition in all three renderings. Additionally, #479 gives evidence of the variant *del*. Although the Spanish stimulus uses *de* as an attributive marker, *del* functions as a relative pronoun in the replica language. Indeed, section 4.2 discussing MAT-borrowing shows that *del* is frequently employed as a relative pronoun where the Spanish stimuli uses *que* ‘who’ and where *in* would have been present in Classical Nahuatl.

- (25) Mexicanero de la Sierra Madre Occidental (Canger, 2001: 146)
 #479 *in xwan yel del onka nepanta*
 DET Juan 3SG who be middle
 ‘Juan is the middle one.’

4.1.9 Partitive

De as a partitive marker is borrowed in Mexicanero, Nahuatl, Zoque, and Zapotec. The overall degree of intrusion into the partitive constructions of the four Mesoamerican languages varies, see Table 12. #497, #535, and #539 seem to be particularly susceptible, as three out of four languages use partitive *de* in these instances.

#489 and #497 are interrogative sentences featuring *cuál de* + NP ‘which of + NP’. Mexicanero makes use of partitive *de* in both instances, i.e. *kati de* + NP

TABLE 12 MAT/PAT-borrowing: *De* functioning as a partitive marker

ALIM	Mexicanero	Nahuatl	Otomi	Zoque	Yucatec	Zapotec	Chontal
#489	<i>de</i>			<i>de</i>			
#497	<i>de</i>						
#535	<i>de</i>			<i>de</i>		<i>de</i>	
#537	<i>de</i>					<i>de</i>	
#538	<i>de</i>					<i>de</i>	
#539	<i>de</i>			<i>de</i>		<i>de</i>	
#540	<i>de</i>					<i>de</i>	
#541	<i>de</i>					<i>de</i>	
#550	<i>de</i>	<i>de</i>					
#578	<i>de</i>	<i>de</i>		<i>de</i>			
Sum 11	10/11	2/11	0/11	4/11	0/11	6/11	0/11
Not borrowed in	# 592						

(Canger, 2001: 147, 149). Zoque only employs it in #489. In #497, one finds the original Zoque construction before the intrusion of *de*, compare example (26a) and (26b). It appears that both constructions co-exist. Perhaps, the choice of either construction is motivated by sociolinguistic or pragmatic factors. The Spanish sentences #535, #537, #538, #539, #540, and #541 are all of the

(26a) Zoque de Chimalapa, Oaxaca (Knudson, 1980: 129)

#489 *hutipi picim-mi de ka mokoyetigay*
 who leave-PFV of those drunk
 'Which of the men who were drunk left?'

(26b) Zoque de Chimalapa, Oaxaca (Knudson, 1980: 130)

#497 *hutipi picim-mi ka pi ka nuʔu yakkaʔh-wi-pi*
 who leave-PFV that man that dog kill-PFV-SPEC
 'Which of the men who killed the dog left?'

structure *QUAN + de + NP*. Mexicanero and Zapotec resort to *de* in all six renderings using the same partitive structure. Zoque only makes use of the Spanish loan in #535 and #539. When comparing examples (27a) and (27b), it again becomes evident that both constructions, those with and without penetration by *de*, co-exist in Zoque.

Sentence #550 is interesting as it presents a distributive construction, i.e. *de*

(27a) Zoque de Chimalapa, Oaxaca (Knudson, 1980: 135)

#535 *tumi de teʔp te ʔune-tigay toy-a nuk-ki*
 one of this this child-PL be_sick-NMLZ grab-PFV
 'Some of these children are ill.'

(27b) Zoque de Chimalapa, Oaxaca (Knudson, 1980: 135)

#537 *yakhutipi te ʔune-tigay-wat toy-a nuk-ki*
 none this child-PL-NEG be_sick-NMLZ grab-PFV
 'None of these children are ill.'

un/dos (...) en uno/dos (...) 'one after the'. Both Mexicanero and Nahuatl employ *de* in their respective renderings. Given its relatively low frequency and the probability that the appearance of Spanish numerals triggers the usage of *de*, the distributive construction is not further discussed.

4.1.10 Set constructions and set phrases

Since adpositions are a borderline case of lexical and grammatical borrowing, it was decided to also include both set constructions and set phrases in the analysis and statistics. The results presented in Table 13 and 14 are not discussed further in the course of this paper, as it may be argued that they, especially the set phrases, do not constitute genuine cases of grammatical borrowing.

TABLE 13 MAT/PAT-borrowing: *De* in a set construction

ALIM	Mexicanero	Nahuatl	Otomi	Zoque	Yucatec	Zapotec	Chontal
#214	<i>de</i>						
#262	<i>de</i>						
#266	<i>de</i>						
#295						<i>de</i>	
#296						<i>de</i>	
#297	<i>de</i>					<i>de</i>	
#317	<i>de</i>	<i>de</i>				<i>de</i>	
#351	<i>de</i>					<i>de</i>	
#458	<i>de</i>	<i>de</i>					
#463	<i>de</i>	<i>de</i>				<i>de</i>	
#544	<i>de</i>						
#579	<i>de</i>	<i>de</i>					
Sum	15	10/15	4/15	0/15	1/15	0/15	5/15
Not borrowed in	#248, #283, #589						

TABLE 14 MAT/PAT-borrowing: *De* in a set phrase

ALIM	Mexicanero	Nahuatl	Otomi	Zoque	Yucatec	Zapotec	Chontal
#187	<i>de yankwik</i>						
#419	<i>de/di una bes</i>	<i>de una vez</i>					
#420	<i>de golpe</i>						
#568	<i>ante de ke</i>		<i>antes de ke</i>				
Sum	4	4/4	1/4	1/4	0/4	0/4	0/4

Notice, however, that with regard to the set constructions, the verbs and adjectives are either taken from the lexicon of the Mesoamerican language or Spanish, which hints at grammatical borrowing of *de* as part of a verbal/adjectival construction rather than lexical borrowing of the entire complex verb/adjective phrase. Example (28) illustrates that the construction enquiring about a prepositional object indeed appears to have been grammaticalised.

- (28) Mexicanero de la Sierra Madre Occidental (Canger, 2001: 115)
#266 *de* *ten* *u-ti-mo-elkawa*
of **what** PST-2SG-REFL-forget
‘What did you forget?’

4.1.11 Dequeísmo

Evidence of *de* in a dequeísmo construction is only given in Mexicanero and Zoque, see Table 15.

Mexicanero shows dequeísmo in #263 and #281 (29), whereas Zoque only exhibits it in #263 (30).

- (29) Mexicanero de la Sierra Madre Occidental (Canger, 2001: 115, 117)
#281 *si-ki-ehlamiki* *de ke* *ti-ki-piya-l(o)*
IMP-3SG.O-remember **that** 2SG-3SG.O-have-PL

ten *ti-tekipanos-e*
that 2SG-work-FUT
‘Remember that we have to work.’

- (30) Zoque de Chimalapa, Oaxaca (Knudson, 1980: 105)
#263 *ʔin okhoʔɲiyyi de k-eʔm yeʔc-pa-gitti yeʔi*
1SG forget **that that-2SG** be.FUT-IPFV-arrive today
‘I forgot that you are arriving today.’

TABLE 15 MAT/PAT-borrowing: *De* in a dequeísmo construction

alim	Mexicanero	Nahuatl	Otomi	Zoque	Yucatec	Zapotec	Chontal
#263	<i>de</i>			<i>de</i>			
#281	<i>de</i>						
Sum 3	2/3	0/3	0/3	1/3	0/3	0/3	0/3
Not borrowed in #247							

As already stated for Spanish, the presence of the preposition *de* is not functionally relevant to the construction (Bentivoglio and Sedano, 2011: 178). Hence, functionality as the single driving force can be tentatively factored out. I would further exclude the possibility that the lexical borrowing of Spanish verbs provoked the usage of *de*. What I can envision, however, that the valency properties of the Spanish verb *olvidarse de que* have been copied, i.e. the borrowed *dequélsmo* structure may be a result of PAT-borrowing.

To conclude, the thorough examination of the different combined MAT/PAT borrowings has shown that the degree of integration of *de* varies greatly. Further, the functions in which the preposition is borrowed appear to be language-specific and do not follow a particular pattern. However, a closer look at the linguistic structures of the target languages themselves provides further insight into the probability and form with which a particular loan is integrated, (cf. Hober (to appear) on different contemporary varieties of Nahuatl).

4.2 MAT-borrowing

Some general insights into the MAT-borrowing as found in ALIM-questionnaires of Mexicanero, Nahuatl, Zoque, Yucatec, and Zapotec were already offered at the beginning of this section. Table 3 gave the innovative ITS for each of the respective languages. This section is devoted to a more detailed analysis of MAT-borrowing, discussing each Mesoamerican language consecutively.

Six different partly innovative functions of *de* can be identified in Mexicanero. Most notably, *del* assumes the function of a relative pronoun (31) which is realised by the morpheme *que* ‘that’ in Spanish. Evidence of this usage is given in as many as 22 renderings (#062, #079, #159, #162, #230, #232, #250, #319, #484, #488, #489, #493, #495, #496, #498, #499, #502, #503, #505, #506, #507, and #508). From a diachronic perspective the usage may not be classified as entirely innovative. *De* as MAT borrowed from Spanish seems to constitute a functionally equivalent modern counterpart to *in* used in Classical Nahuatl to denote the relative pronouns, i.e. the pattern of the relative pronoun construction remains intact in Nahuatl.

- (31) Mexicanero de la Sierra Madre Occidental (Canger, 2001: 147, 111)
 #484 *in taka-t del u-kisa tawani-ti-ka-á*
 DET man-SG **who** PST-leave drunk-LIG-be-IMPF
 ‘The men who left is drunk.’

In the literature, it has already been established that independent items that co-occur frequently may be fused, i.e. their morphological boundaries become blurred (cf. Bybee and Thompson, 1997). The fusion itself may then become

autonomous, as appears to be the case for *del*. Further, this development of *del* seems to be the product of reanalysis, as the unit has received a new syntactic and semantic interpretation. Another usage of *de* in Mexicanero can be found in #018, #124, #134, #135, #426, and #525. In this particular possessive construction, *de* is followed by a personal pronoun (34). Although the construction is absent from the Spanish ALIM-stimuli and in European Spanish, Mexican Spanish does allow for sentences like *su hijo de ella* 'her son' (cf. Flores Farfán, 1999: 120–121). It follows that one may not speak of genuine MAT-borrowing here, but rather combined MAT/PAT-borrowing.

- (32) Mexicanero de la Sierra Madre Occidental (Canger, 2001: 88)
 #124 *xwan yel no-pil-ei de nel*
       Juan 3SG 1SG.POSS-child-DIM of 1SG
       'Juan is my child.'

What is more, *del mas* denotes the superlative in #510 and #511. The phrase *de mas* in #026 corresponding to Spanish *demasiado* appears to form a type of comparative construction. *De* in combination with a temporal adverb is used to describe the beginning of a time span in #320 and #322. This function is assumed by *desde* 'since' in Spanish. Therefore, the temporal meaning of *de* to indicate a duration of time is probably the result of innovative transfer and semantic extension.

Nahuatl exhibits the same temporal construction as Mexicanero in #320. Moreover, the Uto-Aztecan language offers two more locative constructions of the structure *locative adverb + de + np* in #190 and #451. While the Spanish stimulus of 190 uses *en el agua* 'in the water', the Nahuatl rendering resorts to *pane de n a:-λ* 'above of the water' (Lastra, 1980: 72). Furthermore, one finds four attributive constructions with *de* – three of which feature the same lexical material. In #142, #145, and #178, one encounters *de presidente* which can be roughly translated as '(become) president' (cf. 35). This innovative attributive exclusively makes reference to a vocational concept that finds no equivalent in the indigenous languages.

- (33) Nahuatl de Acaxochitlán, Hidalgo (Lastra, 1980: 65)
 #144 *keman o-katka de presidente in xwan*
       when PST-be.PST as president DET Juan
       'When did Jun become president?'

Zapotec accounts for three MAT-borrowings each of which assumes a different function. In #440, *de* appears to fulfil the function of Spanish *con* 'with' (cf. 34a).

In #311, the preposition might indicate inchoative aspect (cf. 34b). Lastly, in #402, the temporal phrase *de biaba* seems to correspond to the semantics of Spanish *hasta* ‘until’ (cf. 34c).

(34a) Zapoteco del Istmo (Pickett and Embrey, 1974: 105)

#440 *bi-čá gisu ka de nisa*
 INCH-fill pot this with water
 ‘Fill the pot with water.’

(34b) Zapoteco del Istmo (Pickett and Embrey, 1974: 91)

#311 *nu-aa de č-aa lugiaa*
 be-1SG to CAUS-go market
 ‘I am about to go to the market.’

(34c) Zapoteco del Istmo (Pickett and Embrey, 1974: 101)

#402 *de bi-aba be tantu bi-žiji be*
 until PFV-fall 3SG so PFV-laugh 3SG
 ‘He laughed until he fell.’

In Yucatec, the temporal construction resulting from the MAT-borrowing in #288, #290, and #581 has already been outlined in section 4. Additionally, similar to Nahuatl, Yucatec shows *de* in the attributive construction referring to the profession of president #178 (cf. 35).

(35) Maya Yucateco de X-Hazil Sur, Quintana Roo (Stolz, Stolz, and Verhoeven, 2012: 100)

#178 *ts’a-a’b Hwáan deh presidèntehmunisipàal*
 establish-PST.PFV Juan as municipal president
 ‘Juan was established as municipal president.’

Zoque offers five instances of MAT-borrowing indicating the degree of comparison of adjectives and adverbs. Sentence #051, #528, #530, #531, and #532 are comparative constructions where *mas de* is used where only *mas* would be used in Spanish (cf. 36). In #510, one encounters a superlative construction using the same phrase *más de* (cf. 37).

(36) Zoque de Chimalapa, Oaxaca (Knudson, 1980: 134)

#530 *te?p mas de winho min-ni ke ?icci?*
 this more before come-PFV than 1SG
 ‘He came earlier than me.’

- (37) Zoque de Chimalapa, Oaxaca (Knudson, 1980: 132)
 #510 *teʔpi*   *más de*   *apu-piʔn-am*
          this   more   old-man-now
          ‘He is the oldest man now.’

In sum, while there are some instances of MAT-borrowing, the innovative functions of which are shared among the replica languages, the outcomes of MAT-borrowing are largely unpredictable. Yet, oftentimes these functions are well-established proving that *de* as MAT was successfully implemented in the target language’s structure. What follows now, in section 5, is a discussion of the results which elucidates the aspects that are of particular interest from a wider functional-typological perspective.

5 Discussion

Before commencing the discussion, I would like to offer a word on the limitations of this study. In light of the limitations, I will then proceed to review the result’s implications from a wider typological-functional perspective. First of all, notice the documentation gaps between the publications. The ALIM-publications were launched in 1974. The latest ALIM was published in 2017. Thus, it may well be that earlier generations of speakers may not have borrowed *de* at the time, but today’s generation might. To determine whether this is the case, more recent data would be needed. In addition, while I can be certain that there is little variation in terms of cultural parameters, i.e. “a certain amount of cultural unity [...] [despite the] vast differences between the many indigenous cultures” (Bakker et al., 2008: 168), I cannot exclude that the individual informant’s attitude towards either of the contact languages has influenced the answers given. For example, so-called ‘purists’ may have intentionally avoided using Spanish loans, although the usage thereof might be well-established in the speech community.

Further, as hinted at in section 3, the ALIM-publications do not offer diachronic data which, in historical and contact linguistic, is pivotal. Ideally, a sample contains data from the different stages of contact including those before the contact (Bakker et al., 2008: 169). This would make it possible to determine when a particular loan was first introduced, or which parts of speech were borrowed in what order and to what extent. Such a ‘timeline’ was already established for Nahuatl by Karttunen and Lockhart (1976). Admittedly, in contrast to Nahuatl, which is well documented, this endeavour proves difficult for the vast majority of Mesoamerican languages due to the lack of documentation.

Last, it is difficult to determine which stage of the language change (innovation/altered replication, diffusion, or propagation) is captured by the respective ALIM-publication, the determination of which could explain certain inconsistencies as to the borrowing of *de* found in the ALIM-questionnaire. Still, despite its limits, this study provides valuable insights into the linguistic behaviour of languages in contact. To begin with, I would like to consider the notions of borrowability and borrowing hierarchies in light of this study's findings and first address the last research question that yet remains to be answered. Table 16 juxtaposes the attestation of *pero* in the Mesoamerican languages in Stolz et al. (to appear) and the results for *de*. It appears to validate the implicational prediction made by Stolz (1996) as to the hierarchical relation of borrowing between prepositions and conjunctions, i.e. the data in the ALIM-questionnaire does not contain a counter example where *de* is borrowed but *pero* is not. Remember that Matras (2007: 61) made a similar claim in his borrowing hierarchy based on frequency (see Figure 1). The overall employment

TABLE 16 *Pero* and *De* in the ALIM-publications

Languages with <i>de</i> in the ALIM	<i>Pero</i> in the ALIM
Chontal (de San Pedro Huamelula) (2/94 = 2.13%)	<i>*not included in Stolz et al.'s (to appear) sample</i>
Mexicanero (73/94 = 77.66%)	<i>pero</i> (7/7 = 100%)
Nahuatl (36/94 = 38.30%)	<i>pero</i> (5/7 = 71.43%)
Zapotec (28/94 = 29.79%)	<i>peru</i> (6/7 = 85.71%)
Zoque (8/94 = 8.51%)	<i>pero</i> (7/7 = 100%)
Yucatec (5/94 = 5.32%)	<i>péero</i> h (1/7 = 14.29%)
Otomi (4/94 = 4.26%)	<i>pe</i> (6/7 = 85.71%)
Mazatec (o)	<i>pero</i> (7/7 = 100%)
Popoluca (o)	<i>pe(ro)</i> (7/7 = 100%)
Chuj (o)	<i>pero</i> (6/7 = 85.71%)
Pima Bajo (o)	<i>per(o)</i> (6/7 = 85.71%)
Purépecha (o)	<i>'peru, 'pero</i> (6/7 = 85.71%)
Totonaco (de Papantla) (o)	<i>pero</i> (6/7 = 85.71%)
Chontal (Chontal de la Sierra) (o)	<i>pero</i> (5/7 = 71.43%)
Huave (o)	<i>pere</i> (5/7 = 71.43%)
Matlatzinca (o)	<i>pero</i> (2/7 = 28.57%)
Acatec (o)	<i>pero</i> (1/7 = 14.29%)
Huichol (o)	<i>peru</i> (1/7 = 14.29%)
Tlapanec (o)	<i>pero</i> (1/7 = 14.29%)

of *de* and *pero* among all the languages presented in the ALIM series lends support to this hierarchy. Only seven Mesoamerican languages borrow *de* compared to 19 languages that give evidence of *pero*.

This leads us back to the question why certain categories are more susceptible to change or, by extension, to borrowing than others. Section 2.2 mentioned the five restrictions formulated by Weinreich, Labov, and Herzog (1968: 95–195). While not going into detail, I would argue that the integration of *de* requires more computational effort on part of the speakers than the integration of *pero*. In addition, the intrusion of *de*, in contrast to that of *pero*, may have some linguistic consequences for structures of the replica languages. These linguistic consequences may include constituent order change, word order change, and loss of bound morphology. Also, *de* is much more frequently used than *pero* in the donor language Spanish. The ALIM-data serves a case in point. While the preposition *de* is found as often as 94 times, *pero* is only featured seven times.

What is more, the overall results demonstrate that it is essential to identify the functional domain of *de* in each recipient language separately, as we cannot predict or infer the usage of *de* in language X on basis of its usage in language Y. And although we might be able to make certain predications as to the likelihood of the MAT/PAT-borrowings into the structure of a certain language on grounds of the structure itself and perhaps even postulate its potential linguistic consequences, the results of MAT-borrowings are mostly unpredictable. A general observation, however, is that none of the languages shows MAT-borrowing only. Indeed, the MAT-borrowings never seem to have developed completely detached from parallel MAT/PAT-borrowings. Take for example the case of Yucatec Maya. In three out of five MAT/PAT-borrowings, *de* is borrowed in its function as a temporal marker. In three out of the four MAT-borrowings, *de* gave rise to an innovative temporal construction. Whether the speculative implicational relation of MAT/PAT < MAT and the functional or semantic link between MAT/PAT and MAT-borrowings hold true remains to be investigated.

Another aspect that emerged repeatedly in this paper and that I would like to briefly touch upon is frequency. There is an ongoing debate on the role of frequency in language processing, language learning, and language change research. Recently, proposals have been put forward suggesting an interplay of processing factors (Behrens and Pfänder, 2016). Frequency is argued to interact with salience and recency and to drive the entrenchment of i.a. grammatical structures.²⁴ Naturally, there is difference between type and token frequencies.

24 Recency, in the present context, cannot be considered at all given the methodology adopted for this study.

Behrens and Pfänder (2016: 2) succinctly state that “token frequency or repetition alone does not lead to generalization but to entrenchment [...]. Type frequency or variation, on the other hand, is needed to provide the basis for possible schema formation and generalization.” Concerning the preposition *de*, Table 1 illustrates the high type frequency of *de* in the linguistic system of Spanish, whereas both the small corpus investigation and the exploration of the ALIM-series show that *de* also exhibits a high token frequency. The high frequencies therefore ought to put an immense internal pressure on the languages in contact with Spanish and consequently lead to its entrenchment. Yet, even though *de* is omnipresent in Spanish, only seven out of 35 Mesoamerican languages give evidence of the preposition. Frequency cannot be the sole driving force of language change. I thus agree, based on these results, that frequency and salience are closely intertwined.²⁵ Given that this paper is empirical in nature, a more in-depth discussion of the findings, also taking into account the linguistic systems of the recipient languages, has to be adjourned to the near future.

Finally, I would like to point to additional data that give evidence of *de*. First, Bohnemeyer and Stolz (2006) conducted a study on spatial reference in Yucatec Maya. While they do not discuss *de*, one finds *de* functioning as an attributive marker in their sample – a function that was not attested in the ALIM-questionnaire. Second, Wichmann (1996) collected numerous Popoluca de Texistepec texts. The tales also exhibit *de*, but in all cases, *de* is part of a set phrase (cf. 38) and never functions as a genuine preposition with a Popoluca word.

- (38) Popoluca de Texistepec (Wichmann, 1996: 19)
bweenu, njem-esh k-seet-p welta de oocho diiaj
 alright there-FUT 1SG- return- FUT **return in** eight day.PL
 ‘Alright, I will come back there in eight days.’

Third, there is a plethora of Nahuatl texts that remain to be scanned for *de*. Flores Farfán (2018) who discusses the Spanish impact on Nahuatl through the years mentions various texts and sources that can be consulted in the endeavour. Last, Stolz and Stolz (1996: 105) found that both Totonac and Pipil provide evidence for *de* – which was not the case in the ALIM-questionnaires. Naturally, different varieties of the same languages may exhibit varying degrees of Hispanisation.

²⁵ For an in-depth discussion of the issue, the reader is referred to Behrens and Pfänder (2016).

All in all, the results of this study offer insights into the linguistic behaviour of languages in contact. Discussing the results in light of proposed borrowing hierarchies and functional explanations with a focus on frequency have shown that the investigation of grammatical borrowing, especially that of adpositions, can greatly contribute to uncover the underlying, universal mechanisms at play during language contact and language change. An in-depth exploration of already existing material and purposeful elicitation of new data would help to fill in the gaps.

6 Concluding Remarks

This paper shed light on the continuous linguistic Hispanisation of the languages of Mexico via borrowing in the domain of grammar by focussing on the Spanish preposition *de*, its functions, and its ramifications on the structures of the indigenous languages of Mesoamerica. Initially, the theoretical framework was outlined by discussing relevant literature and findings of previous studies. The exploration of the ALIM-publications showed that of the 35 reviewed languages, seven, namely Chontal, Mexicanero, Nahuatl, Otomi, Yucatec, Zoque, and Zapotec, exhibit *de* or a variant thereof. All seven languages give evidence of combined MAT/PAT-borrowing and five languages show MAT-borrowing. The results showed that none of the replica languages fully comply with the Spanish pattern regarding the usage of *de*. Indeed, it was demonstrated that we cannot predict or infer the usage of *de* in language X on basis of its usage in language Y. Further, the discussion of the results lend support to the proposed borrowing hierarchy by Matras (2007) and the relational predication made by Stolz (1996b) as to the hierarchical relation of borrowing between prepositions and conjunctions. I reviewed the findings in light of functional explanations, particularly processing factors, and agree that frequency, among salience and recency, operates as the driving forces in languages change in general and in the implementation of *de* into the Mesoamerican recipient languages in particular.

This study also gave rise to more questions and research interests that ought to motivate follow-up research: What can we uncover regarding the borrowing of *de* from a diachronic perspective? How can we explain the 'inconsistencies' in the encoding of certain constructions? Are the respective languages in a shifting state from constructions without Spanish influence to those subject to it? Or are the variants deliberate choices reflecting sociolinguistic or pragmatic variables? Also, what borrowing patterns of *de* do Austronesian and Amerindian languages that are in contact with Spanish exhibit? How are other

Spanish prepositions borrowed and what ramifications on the structure do they have? These and other questions pose challenges to future research.

To put it succinctly, this study merely scratched the surface of further potential and needed studies of *de* and other elements in the realm of Hispanisation. Thus, additional and diachronic data is required to fully understand the development of *de* in the replica languages. Moreover, in addition to collecting texts and data, it may be helpful to resort to other experimental methods (rating, assessment) in order to obtain a complete picture of the borrowing of *de* that encompasses both typology and information processing.

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Abbreviations

1	=	first person
2	=	second person
3	=	third person
ABS	=	absolutive
ADJ	=	adjective
ADV	=	adverb
AOR	=	aorist
ASS	=	assertive
CAUS	=	causative
CLF	=	classifier
DEI	=	deitic
DEM	=	demonstrative
DESID	=	desiderative
DET	=	determiner
DIM	=	diminutive
FUT	=	future

HYP	=	hypothetical
IMP	=	imperative
IMPF	=	imperfect
INF	=	infinitive
INTR	=	intransitive
IPFV	=	imperfective
INAN	=	inanimate
INCH	=	inchoative
LIG	=	ligature
LOC	=	locative
N	=	noun
NEG	=	negation
NMLZ	=	nominalizer
NP	=	noun phrase
NUM	=	numeral
O	=	object
ORIG	=	origin
QUAN	=	quantifier
PFV	=	perfective
PL	=	plural
POSP	=	kinship possessive
POSS	=	possessive
PRED	=	predicativizator
PRF	=	perfect
PRS	=	present
PST	=	past
RED	=	reduplication
REFL	=	reflexive
S	=	subject
SG	=	singular
SPEC	=	specifier
TR	=	transitive
V	=	verb

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Appendix

Classification of Mesoamerican Languages (adapted from Suárez, 1983: xvi–xvii)

I.	Uto-Aztecan a. Pimic – Southern Tepehuán b. Taracahitic – Yaqui, Mayo c. Corachol – Cora, Huichol d. Aztecan – Nahuatl, Pipil	VII.	Huave – Huave
		VIII.	Mixe-Zoque q. Zoquean – Chiapas Zoque, Oaxaca Zoque, Sierra Popoluca, Texistepec r. Mixean – Mixe, Sayula Popoluca, Oluta Popoluca
II.	Totonac-Tepehua e. Totonacan – Totonac f. Tepehua – Tepehua		
III.	Otomanguean g. Pamean – North Pame, Chichimec h. Otomian – Otomi, Mazahua, Matlazinca, Ocuiltec i. Popolucan – Chocho, Ixcatec, Mazatec j. Subtiaba-Tlapanec – Tlapanec k. Amuzgo – Guerrero Amuzgo, Oaxaca Amuzgo l. Mixtecan – Mixtec, Cuicatec, Trique m. Chatino-Zapotec – Chatino, Zapotec n. Chinancan – Chinantec	IX.	Mayan s. Huastecan – Huastec, Chicomuceltec t. Yucatecan – Yucatec, Mopán, Itzá, Lacandon u. Greater Tzeltalan – Chol, Chontal, Chortí, Tzeltal, Tzotzil v. Greater Kanjobalan – Chuj, Tojolabal, Kanjobal, Jacaltepec, Acatec, Mototzintlec-Tuzantec w. Greater Mamean – Mam, Teco, Ixil, Aguacatec x. Greater Quichean – Quiché, Cakchiquel, Tzutuhil, Sacapultec, Sipacapa, Uspantec

IV.	Tarascan – Tarascan		X.	Xincan†
V.	Cuitlatec		XI.	Lenca†
VI.	Tequistlatec-Jicaque o. Tequistlatecan – Costal Chontal, Highland Contal		XII.	Chibchan – Paya
	p. Jicaque – Jicaque from La Flor		XII.	Arahuacan – Black Carib (Garífuna)
			XIV.	Misumalpan – Miskito – Sumu – Matagalpa