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# Extended use of demonstrative pronouns in two generations of Mandarin Chinese speakers in the Netherlands

Evidence of convergence?

Suzanne Aalberse, Yiwen Zou and Sible Andringa  
University of Amsterdam, Amsterdam Center for Language  
and Communication

This study investigated the use of demonstratives in encoding already mentioned referents in two generations of Mandarin Chinese speakers in the Netherlands. Data from twelve families was compared to baseline data from eight native controls in China. Previous literature suggests that languages without dedicated morphology to encode definiteness might develop such morphemes in contact with a language with articles (cf. Backus, Doğruöz, & Heine, 2011). Demonstrative pronouns may be reinterpreted as articles and this process could result in an increase in demonstrative use. We accordingly expected to find such an increase in Mandarin Chinese spoken in the Netherlands and found confirmation for this in both generations of speakers. A preference for the distal demonstrative was observed only in the second generation.

**Keywords:** cross-linguistic influence, heritage speakers, Mandarin-Chinese, demonstratives, grammaticalization

## 1. Introduction

Muysken (2013) argues for more interaction between different branches of bilingual contact. We attempt to bring two fields of bilingual contact closer together by investigating the use of demonstratives in a language without articles in contact with a language with articles. While this situation has been studied intensively in the domain of long term contact studies and areal linguistics (see Heine & Kuteva, 2006 for an overview), it has not received much attention in the domain of bilingual acquisition. Specifically, we studied heritage speakers of Mandarin Chinese in the

Netherlands, as well as their parents. We paired Dutch – a language that uses articles to encode definiteness, with Mandarin Chinese, which does not have dedicated morphology to express definiteness. In Mandarin Chinese, definiteness can be expressed via word order, via the context and indirectly via functional items that are inherently definite, such as demonstratives. The central question in this article is if the presence of obligatory articles in the dominant language of Dutch influences the encoding of nouns in Mandarin Chinese in the Netherlands.

## 2. Theoretical framework

In language contact situations, bilingual speakers are influenced by particular constraints on their linguistic behavior. Given different sociolinguistic circumstances (normativity, prestige of both languages), given the linguistic domain (phonology, lexicon, etc.) and given the similarities or dissimilarities between the languages involved, speakers may make use of several strategies to optimize or balance these different constraints and wishes optimally. What constraints and wishes are most prominent differs per situation and thus the impact of language contact can vary from one language pair to another. German-French language contact for example does not have one possible outcome but many different ones. The idea that the context or scenario matters for the outcome of language contact is referred to by Muysken (2013) as the ‘scenario approach’. To successfully compare outcomes of different fields of language contact (e.g., areal studies and acquisition), the scenario needs to be taken into account. The scenario for language contact in the German-French border area may be different from the scenario in French heritage speakers in Germany and may have a different impact.

Muysken (2013) identifies four optimization strategies: universal principles, strategies based on the L1, strategies based on the L2 and strategies that exploit similarities between the L1 and the L2. Universal principles (UP) are universally available processing strategies such as using a topic-comments structure or using the most unmarked phonological system with CVCV syllables. L1 strategies are strategies where the speakers rely on the L1. For example, speakers can rely on phonological rules of their L1 when speaking an L2. L2-strategies refer to the situation where speakers rely on the L2, for example when borrowing words from their L2 into their L1 such as using the English term “interface hypothesis” in an otherwise Dutch conversation. L1/L2 strategies are strategies where speakers search for correspondences between their two languages and exploit these correspondences by using shared structures frequently and avoiding structures that are disallowed in one of the languages. For example, Moro (2016) shows that heritage Ambon Malay heritage speakers used more adjectival resultative constructions in their Malay at

the expense of serial verb constructions and she interprets this shift as the result of convergence between the grammars of Malay and Dutch.

This article focuses on convergence between Dutch and Mandarin in the domain of definiteness marking in the context of Chinese families living in the Netherlands. Both the linguistic domain and the social circumstances make convergence a likely result in this context. Mandarin and Dutch share the possibility of encoding definiteness via a morphological marker, which means there is partial overlap between the languages that may somehow be receive emphasis in the speech of Mandarin Chinese-Dutch bilinguals. Matras (2009), building on work of Weinreich (1953) and Silva-Corvalan (1994), describes the situation of immigrant languages as a social situation that stimulates convergence in general. Speakers want to maintain their home language out of language loyalty but at the same time are driven to reduce the load of the selection and inhibition mechanism associated with speaking two languages. This load can be reduced by allowing patterns in the language to become more similar, e.g., to converge. By selecting Chinese lexical items while at the same time using a structure that is more Dutch-like, speakers optimize constraints that result from language loyalty with processing constraints.

In the case of definiteness marking, if two languages both need to encode the concept of definiteness, but one of the two languages lacks dedicated morphology to express definiteness, then speakers may look for a close equivalent in this language as a way of expressing definiteness. In Mandarin Chinese, demonstratives are a likely candidate for expressing definiteness as they share functional properties with (Dutch) articles for heritage speakers of Chinese in the Netherlands. Evidence of convergence to Dutch would be provided if these speakers show signs of increased use of demonstratives as a way of expressing definiteness. Such a change in frequency distributions as a result of language contact was coined 'indirect transfer' by Silva-Corvalan (1994, p. 4) and frequential copying by Johanson (2002, p. 292). This type of change refers to the preference bilinguals may have for a construction that is shared by their languages at the expense of a construction that is disallowed in one of their languages (cf. Jansen, Lalleman & Muysken, 1981). The idea that bilingualism can cause a shift in frequency presupposes that speakers can subconsciously make connections between elements or constructions of two or more languages. These connections are referred to as 'interlingual identification' by Weinreich (1953) or equivalence relations by Heine and Kuteva (2005). Schmid (2011) and Moro (2016) found that people who use both their languages actively are the greatest innovators: active use of both (or more) languages during the lifespan increases the likelihood that grammars converge because the languages are then frequently co-activated. The idea that definiteness marking is open to cross-linguistic influence is in line with Hulk and Müller (2000) who show that interface domains are open to influence when two languages show partial superficial overlap.

In the remainder of this section we will discuss previous studies into language contact effects in the domain of definiteness marking as well as language acquisition studies on articles. Both literatures suggest that definiteness is susceptible to convergence. Then we will zoom in on two studies that show how such convergence manifests itself in heritage languages without dedicated definiteness morphology.

### 2.1 Definiteness marking and cross-linguistic influence

Previous research has shown that in long term contact situations, languages without articles are likely to develop dedicated definiteness morphology under the influence of languages with articles. The process that language contact accelerates the process of grammaticalization is referred to by Heine and Kuteva (2005) as contact-induced grammaticalization. Backus, Doğruöz and Heine (2011) list many illustrative studies. For example, they report on work by Breu (2003) who describes the rise of indefinite markers in Molise Slavic, a Croatian language spoken in the Southern region of Italy. This Slavic language, whose sister variants are all without articles, has developed articles under influence of Italian. Another example provided by Backus, Doğruöz and Heine (2011) is the rise of definite and indefinite articles in Upper Sorbian, a Slavic language spoken in Eastern Germany (cf. Breu, 2003; Löttsch, 1996). This Slavic language was in contact with German for almost a millennium and as an effect of this contact the proximal demonstrative in this language developed into an article.

Backus, Doğruöz, and Heine (2011) also provide evidence for incipient grammaticalization in short term language contact situations. They show that the numeral *one* in heritage Turkish in the Netherlands can be used in a broader number of contexts than in Turkish spoken in Turkey. They suggest that the numeral *one* is developing into an indefinite marker due to cross-linguistic influence from Dutch. The presence of the indefinite article *een* ('a') in Dutch triggers the search for an equivalent morpheme in Turkish. In a similar way, the presence of definite articles in the dominant language could trigger a search for a translational equivalent in the heritage language. Language contact studies such as described in Backus, Doğruöz, and Heine (2011 and references therein) show that demonstratives are potential candidates for reanalysis into articles. This is not only true in language contact situations, but also for language internally motivated change (Greenberg, 1978; Lyons, 1999, pp. 330–334; van Gelderen, 2007).

Language acquisition studies similarly suggest that the domain of definiteness marking is susceptible to cross-linguistic influence. Learning a second language with articles when learners have an L1 with articles appears largely unproblematic. Montrul and Ionin (2012) showed that problems with the L2 article system are

restricted only to domains where the two languages show a mismatch. However, it has been widely documented that learners who have an L1 without articles have long and persistent problems learning a language with articles (see for example, Kharma, 1981; Huebner, 1983; Agnihotri, Khanna, & Mukherjee, 1984; Master, 1987; Thomas, 1989; Butler, 2002; Ionin, Ko, & Wexler, 2004; Ionin, Zubizarreta, & Philippov, 2009; Ionin, Baek, Kim, Ko, & Wexler, 2012; Goad & White, 2008; Mayo & Hawkins, 2009 among many others). Various types of errors are found in the production of such learners: omission errors where nouns that need an article are left bare (Trenkic, 2009), mix-ups between definite and indefinite articles (e.g., Ionin et al., 2009), overextension of the use of articles in places that do not need them (Ionin & Montrul, 2009) and the use of phonologically stronger and more lexicalized forms instead of the article (the use of *that* instead of *the* and the use of *one* instead of *a*) (e.g., Goad & White, 2008; Ionin et al. 2012).

The acquisition of languages without articles has not been researched much. Cho and Slabakova (2014) is a notable exception; they investigated the acquisition of Russian by speakers of Korean (language without articles) and English (language with articles). Cho and Slabakova show that English and Korean learners of Russian each have their own strengths and weaknesses in acquiring the encoding of definiteness in Russian and that these strengths and weaknesses can be connected to the characteristics of the L1. English learners of Russian were better at evaluating the acceptability of OVS orders in Russian than Korean learners. They found that both the English and the Korean learner groups rated too many forms as correct, but that English speakers gave lower ratings to OVS order with indefinite objects (as did the native Russian speakers), while Korean speakers did not distinguish between the two conditions (definite versus indefinite object in OVS order). Cho and Slabakova (2014) attributed the inability to distinguish between the two conditions by the Korean learners to the fact that Koreans go from a language where definiteness is encoded as non-primary function or via non-morphological strategies to a language where dedicated definiteness morphology is absent. They suggested that English learners of Korean were more successful, because they were supported by dedicated definite morphology in English.

## 2.2 Definiteness marking in heritage languages

Section 2.1 showed that definiteness is sensitive to cross-linguistic influence in language acquisition and that it is a domain that has been found sensitive to contact-induced change in language contact studies. Little is known however about acquisition patterns of speakers with an L1 with articles when learning an L2 without articles. Language contact studies suggest that when a language with

articles comes into contact with a language without articles, non-primary purpose definiteness markers can be reinterpreted as primary purpose definiteness markers. Frequently, a demonstrative is reinterpreted as an article. This section discusses two studies that investigate use of inherently definite morphemes in heritage languages without articles that are in close contact with a socially dominant language with articles.

Polinsky (2006) described the characteristics of heritage Russian in the US. Russian does not have articles whereas English does. One of the features Polinsky observed in heritage speakers of Russian is the extensive use of demonstratives in narratives. Polinsky (2006) found that the frequency of these demonstratives in heritage Russian was much higher than in homeland Russian. Polinsky (2006) argues for two possible explanations for the high use of demonstratives. Heritage speakers might avoid ambiguity by very specifically encoding the referent and/or they compensate for the lack of articles in Russian.

Similarly, Moro (2016) describes the use of the enclitic *-nya* in three groups of speakers: homeland speakers in Ambon, first generation Ambon Malay migrants and heritage Ambon Malay speakers in the Netherlands. The clitic *-nya* encodes possession and/or definiteness and is not used frequently in homeland Malay. Moro hypothesized that speakers subconsciously connect the suffix *-nya* to the definite article in Dutch via interlingual identification. She further hypothesized that because of this interlingual identification speakers of Ambon Malay in the Netherlands would use more *-nya* than homeland speakers due to cross-linguistic influence from Dutch and found this expectation confirmed: *-nya* was used more frequently by speakers of Ambon Malay in the Netherlands than by homeland speakers. There was no statistically significant difference between first generation speakers and heritage speakers.

Moreover, Moro (2016) observed that the use of the clitic *-nya* is more frequently attested in specific sociolinguistic circumstances. Sequential bilinguals who lived in a Dutch environment at the time of testing had the highest rates of demonstratives in their speech. Moro's explanation for this was that sequential bilinguals who spoke Malay only in the first part of their lives may have felt more comfortable speaking Malay than simultaneous bilinguals, who may have been more insecure about their Malay and therefore avoided using their heritage language. The continued use of Malay by simultaneous bilinguals Dutch may have caused cross-linguistic priming (cf. Kootstra & Muysken, 2016) and may in turn have accelerated contact-induced change. Moro's observations are in line with work by Schmid (2011) who shows that innovations occur most in speakers who speak both of their languages frequently causing them to be co-activated frequently.

### 2.3 Definiteness marking in Dutch and Mandarin Chinese

Dutch has dedicated morphology to encode definiteness. When a referent is already mentioned in the previous discourse or assumed commonly known, the definite article is obligatory (*het/de* for singular nouns; *de* for plural nouns), while a singular new referent that is unique in the discourse needs the indefinite article *een*. The Dutch definite article *de* is etymologically derived from the distal demonstrative *die* (Philippa, Debrabandere, & Quak, 2003). The close connection between the distal demonstrative can still be observed in pidgin and creole variants of Dutch that use the distal demonstrative as an article (Arends, Muysken, & Smith, 1995). Piwek, Beun and Cremers (2008) investigated the distribution of distal and proximal demonstratives in present day Dutch and they suggest that the distal demonstrative *die* is more neutral than the proximal demonstrative *deze*, e.g. the use of the proximal demonstrative *deze* requires salience in the immediate context and indicates strong/intensive meaning, whereas there is no such requirement for the distal demonstrative *die*, which can be used more neutrally and in more contexts. Their observations on the distribution and the meaning of the distal *die* and the proximal *dat* suggest that distal demonstratives *deze* and *die* are closest in use and meaning to articles in present day Dutch because of the communicatively more neutral and more frequent use of *die*.

Unlike Dutch, Mandarin Chinese lacks dedicated morphology that has definiteness marking as its primary function. Definiteness can be expressed via word order and via inherently definite elements such as demonstratives and possessive markers. Bare nouns are common in Mandarin and their interpretation depends on the position in the utterance, the situation type of the utterance and the use of adnominal modifiers. This section will first discuss the multiple interpretations of bare nouns with respect to word order, and then the use of demonstratives in marking definiteness.

Post-verbal position bare NP's in Mandarin Chinese can receive an indefinite, a definite or a generic reading (Sybesma 1992, pp. 176–178). Cheng and Sybesma (1), bare nouns are indefinite. When the verb expresses a telic event, bare nouns receive a definite interpretation (see Example (2)). If the verb expresses unbounded states such as liking something, bare nouns are interpreted as generic (see Example (3)).

- (1) Lisi kan dianying qu le.  
Lisi watch movie go PFV  
'Lisi went to watch a movie.'
- (2) Lisi kan wan le dianying.  
Lisi watch finish PFV movie.  
'Lisi finished watching the movie.'

- (3) Lisi hen xihuan manhua shu.  
 Lisi very like comic books.  
 'Lisi likes comic books very much.'

In contrast to postverbal bare nouns, preverbal bare nouns can only be interpreted as generic or definite, but never indefinite. The bare noun (*xiaohai* "kids") in Example (4) can either be interpreted as a definite and specific subject or as a generic concept.

- (4) Xiaohai yao wan zuqiu.  
 Kid(s) want play football.  
 'The kid wants to play football.'  
 'Kids want to play football.'  
 \*'A kid is playing football.'

Definiteness cannot only be marked by word order and pragmatic cues, but also by the use of demonstratives or a demonstrative plus a classifier, in both preverbal and postverbal position (see Example (5) and (6)). However, a demonstrative does not have definiteness marking as its primary function.

- (5) na ge xiaohai xiang mai shu.  
 That CL kid want buy book.  
 'The kid wants to buy a/the book.'
- (6) wo xiang mai zhe ben shu.  
 I want buy this CL book.  
 'I want to buy this book'

Some authors claim that demonstratives are grammaticalizing into articles in Mandarin Chinese in China. Huang (1999) suggests that the distal demonstrative *nage* is developing into a definite determiner in postverbal position. Chen (2004) suggests that both the proximal and the distal demonstrative are used in an increasing number of contexts, some of which are more definite than deictic, as illustrated in Example (7) taken from Chen (2004). However, Chen (2004) also suggests dedicated morphology in Mandarin Chinese has not been fully developed.

- (7) You yige lieren yang zhe yizhi gou.  
 Have one-CL hunter keep DUR one -CL dog.  
 zhezhi gou hen dongshi.  
 DEM-CL dog very intelligent  
 'There was a hunter who had a dog. The dog was very intelligent.'

## 2.4 The current study

The former section suggests that definiteness marking is a domain open to cross-linguistic influence and that demonstratives are a candidate for reinterpretation into articles in a language without articles in contact with a language with articles. In this study, we investigated the speech of adult heritage speakers in the Netherlands who grew up with Mandarin Chinese as their family language, while Dutch was the socially dominant language and the school language. We also tested their parents, because it has been suggested that language change observed in the speech of heritage speakers may be motivated by the quality of the input they received in childhood (Rothman, 2007; Pires & Rothman, 2009; Pascual y Cabo & Rothman 2012). Based on Polinsky's findings for Russian in the US (2006) and Moro's findings for Ambon Malay in the Netherlands (2016), we expected to find more use of morphological encoding of definiteness in speakers of Chinese in the Netherlands due to cross-linguistic influence. More specifically, we expected this to occur primarily with already mentioned referents, as one would typically expect these to receive definite markings; one would not expect definiteness morphology with first mentioned referents.

In addition, this study wanted to investigate whether there is intergenerational variation in Mandarin Chinese speakers in the Netherlands in the use of demonstratives. It is possible that first generation speakers are like homeland speakers and that the preference for overt marking only manifests itself in the second generation. This would mean that second generation heritage speakers are the motor behind the change and that the increased use of definiteness morphology in this context is linked to early bilingual acquisition. If first generation speakers are also found to show an increased use of overt marking (as Moro, 2016 did), this suggests either that the first generation is influenced by the second generation or that language use and language contact is a more important factor than age of acquisition,

We looked for signs of increased use of both proximal and distal demonstratives, without having clear expectations about which demonstrative might be the preferred candidate for expressing definiteness in Mandarin Chinese in the Netherlands. The replacement of articles by the distal demonstrative *die* in contact varieties of Dutch and the observation by Piwek et al. (2008) that the distal demonstrative *die* in Dutch has a more neutral meaning than proximal *dat*, suggests that the distal demonstrative is a good candidate. However, some authors suggest that grammaticalization of the demonstrative into an article is already on its way in China. Language contact could accelerate this language-internal process. The literature on language-internal grammaticalization of demonstratives does not allow for clear predictions on this point: Huang (1999) argues that only the distal demonstrative is grammaticalizing

in monolingual Mandarin Chinese, while Chen (2004) suggests that both distal and proximal demonstratives are being grammaticalized into articles.

### 3. Methodology

#### 3.1 Participants

In this study 12 Mandarin Chinese families living in the Netherlands (first and second generation) were tested. One parent and one child from each family were included in the analysis, yielding a total of 24 Mandarin Chinese speakers in the Netherlands. They were divided into two sub-groups: the first generation (age: range 43 to 55; mean: 47.9) and the second generation (age: range 15 to 27; mean: 20.5). The participants were recruited in a city in the middle of the Netherlands through the Traces of Contact project. The first generation speakers were Mandarin native speakers<sup>1</sup> who were born in a Mandarin speaking environment (11 in mainland China, and 1 in Malaysia). They moved to the Netherlands for study or work and have lived in the Netherlands ever since. The second generation were either born in the Netherlands or moved to the Netherlands before the age of 7. The study also included 7 Mandarin homeland speakers (mean age: 27;5) living in mainland China as a control group (homeland group).

#### 3.2 Materials

The elicitation materials were part of the CORE-elicitation kit of the Traces of Contact project (ERC project #230310). The CORE- elicitation kit consisted of three parts: (1) a simultaneous video-elicitation task where participants were asked to describe 14 videos while watching them. (2) a video-retelling task where participants had to describe short clips after watching them and (3) an oral sociolinguistic interview. For this study, the results from the simultaneous video-elicitation task were used because these videos lasted longer than the clips and thus allowed us to observe reference to already mentioned referents most frequently. The simultaneous video-elicitation task consisted of 8 videos from the German cartoon series *Die Sendung mit der Maus*, 3 videos created by Sotaro Kita and colleagues at the MPI (Kita 1995) and 3 videos created by Geoffrey Haig and Stefan Schnell at the

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1. Apart from speaking Mandarin Chinese, some of the Mandarin Chinese first generation speakers also have a dialectal background (family 3: Cantonese; family 4: Changsha dialect; family 7: Wenzhounese; 8: Zhengzhou dialect. In spite of their knowledge of these dialects, Mandarin Chinese according was always their family language.

University of Kiel (Haig & Schnell, 2015). The average length of the videos was about half a minute (shortest video 9 seconds, longest one 56 seconds) and they were organized in three random orders. The participants were assigned to one of these orders and they were instructed to describe the videos while watching them on a laptop in front of them.

Figure 1 shows screenshots of one of the videos that participants had to describe. In this particular video, a mouse is reading a book on a sofa when an elephant walks over and starts playing drum. The mouse gets annoyed and throws the elephant's drum sticks away. The elephant then starts to use his nose to play and the mouse throws away the drum as well. After that the elephant uses his belly as a drum and the mouse feels hopeless. As a result, the mouse can only tie his ears into a knot so that he does not hear anything from the little elephant anymore. A key element of each of the videos used was that there are recurring objects and referents to elicit the need to express definiteness.

Apart from the video elicitation task, we also used the sociolinguistic interview to collect information about our heritage speakers' family background (study/work, city of residence, place of birth place), language profile, and language use (age of onset for Dutch/Mandarin; family language, social language, interlocutors, media consumptions and language learning).

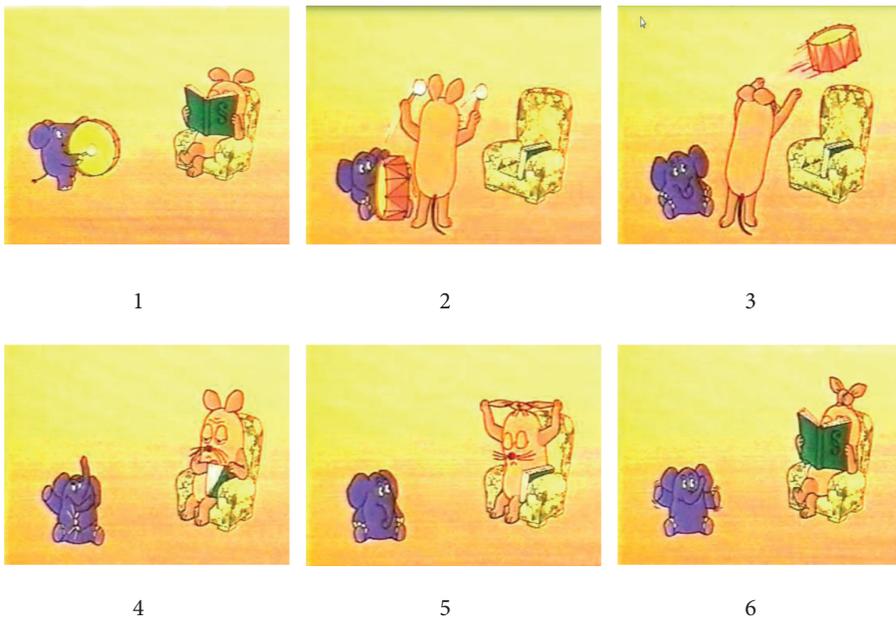


Figure 1. Screenshot of example video

### 3.3 Coding

The ELAN<sup>2</sup> program (Sloetjes & Wittenburg, 2008) was used to transcribe, code and analyze the data. All nominal constituents in the data were coded in one tier for information status: either as *first mentioned* if it was introduced by the participant for the first time, or as *already mentioned* if the referent had been introduced before. Some referents appeared in more than one of the experimental videos. In such cases, they were coded as unclear; if participants used numeral *one* (and a classifier) or clearly stated that it was the same referent, then it was coded as first mentioned or already mentioned respectively. For each referent, we coded on a separate tier whether it appeared pre- or post-verbally. On another tier, we coded whether referents had demonstratives attached, used numeral one, or were left bare. On yet another tier, we coded for demonstratives whether *this/these* or *that/those* was used. Wiedenhof (2015, pp. 110) suggests that demonstrative plus classifier constructions in Mandarin Chinese can also be used as hesitation markers. Therefore, when a long pause was observed between the demonstrative and the noun, or when the participants repeated the demonstratives were excluded from the analysis.

### 3.4 Analysis

Generalized linear mixed-effects logistic regression modeling was used to examine the data. We used three dependent variables: Whether a demonstrative was realized yes or no; whether *this* was used yes or no; and whether *that* was used yes or no. Predictor variables were Group (first and second generation speakers in the Netherlands and speakers of Mandarin in China); Information status (first or already mentioned); Sentence position (pre- or postverbal). As most models did not converge when random slopes were included, we ran random intercept models only. All analyses were run in R (R core team 2015) using the lme4 package (Bates, Maechler, & Bolker, 2011). As we were looking into the relationship between sentence position and information status, items that appeared with *ba*-structure were excluded. The use of *ba* usually results in uncanonical word order of Mandarin Chinese: direct objects tend to move into preverbal position (Liu, 2007). In total 1025 items (out of 4709 items in total) were preceded by *ba* (22%) and were excluded for further analysis.

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2. ELAN is a professional tool for the creation of complex annotations on video and audio resources designed by Max Planck Institute for Psycholinguistics, The Language Archive, Nijmegen, The Netherlands. <<http://tla.mpi.nl/tools/tla-tools/elan/>>

#### 4. Results

To test if speakers of Mandarin in the Netherlands may have extended their use of demonstratives when referring to already mentioned nouns, we investigated the use of demonstratives of first and second generation speakers of Mandarin in the Netherlands as compared to homeland speakers. We investigated demonstrative use both in first and already mentioned contexts to see if demonstratives were preferentially used with already mentioned contexts, which is what you would expect if they express definiteness.

As a first step, we describe the relationship between information status and sentence position as observed in our data, to confirm the generally observed pattern that first mentioned referents prefer sentence final position. Table 1 shows the distribution of first and already mentioned referents across sentence position for each group of speakers. The table shows that all three speaker groups preferred to use first mentioned referents in post-verbal position, but all three groups also used a considerable number of first mentioned referents in pre-verbal position and did not seem to differ in this respect (22% by homeland speakers, 25% by first generation speakers and 27% by second generation speakers). Similarly, all three groups seemed to have a small preference for using already mentioned referents in pre-verbal position, but frequently used them in post-verbal position as well (46%, 41% and 45%, respectively).

**Table 1.** The use of first and already mentioned referents pre- and postverbal sentence position, split by group

	Homeland speakers		First generation speakers		Second generation speakers	
	pre	post	pre	post	pre	post
First mentioned	93	335	161	479	169	462
Already mentioned	344	297	399	286	357	302

As a next step, we investigated the occurrence of demonstratives per speaker group (ignoring sentence position at this point) to find support for the expectation that speakers of Chinese in the Netherlands may overextend demonstratives in comparison to homeland speakers. Table 2 summarizes the observed patterns of demonstrative use. This table, too, shows that demonstratives were less likely to occur with first mentioned referents. Homeland speakers did not use demonstratives often with already mentioned referents, whereas first and second generation speakers of Mandarin in the Netherlands were increasingly likely to do so. A generalized linear mixed-effects logistic regression model in which we predicted the occurrence of

a demonstrative on the basis of information status (first mention or already mentioned) and group (homeland, first or second) showed that already mentioned referents were overall more likely to occur with a demonstrative ( $b = 1.035$ ,  $SE = 0.244$ ,  $p < 0.001$ ; OR = 2.82); that second generation speakers were less likely to use demonstratives at first mention ( $b = -1.245$ ,  $SE = 0.460$ ,  $p = 0.007$ ; OR = 0.29); and that both first ( $b = 0.762$ ,  $SE = 0.311$ ,  $p = 0.01$ ; OR = 2.14) and second ( $b = 2.372$ ,  $SE = 0.382$ ,  $p < 0.001$ ; OR = 10.72) generation speakers were more likely to use demonstratives than homeland speakers in already mentioned contexts. Odds ratios are difficult to interpret in multifactor models, but they do show clearly that second generation users were much more likely to supply demonstratives in already mentioned contexts than first generation users were.

**Table 2.** Number of demonstratives observed with first and already mentioned referents per speaker group

	Homeland	First	Second
First mentioned	23 of 428 (5%)	38 of 640 (6%)	13 of 631 (2%)
Already mentioned	90 of 641 (14%)	167 of 685 (24%)	239 of 659 (36%)

Table 3 zooms in on already mentioned referents only and displays for each participant how often they used a particular demonstrative. It shows that all participants used demonstratives, although some used very few. One participant used merely one, which constitutes two percent of the total number of demonstratives this participant could have used with already mentioned referents. On the other end of the spectrum, there was a participant who used demonstratives in 59 percent of the total number of already mentioned contexts this person created. The table also shows how many occurrences of *this* and *that* were used, which clearly suggest *that* seems to be the preferred demonstrative. It is difficult, however, to glean from this table if the use of *this* and *that* is related to group or generation. This will be further explored through a series of generalized linear mixed-effects logistic regression models.

To this end, a model was constructed to confirm that the occurrence of *this* or *that* in already mentioned contexts was predicted by group membership. As mentioned before, work by Huang (1999) suggests that the distal demonstrative *nage* ('that') is most prone to reanalysis into a determiner (pace Chen, 2004 who suggests both demonstratives are grammaticalizing into articles). We tested if second generation speakers would be more inclined towards the use of *that*. This expectation was tested against first generation speakers and the control group speakers of Mandarin in China. A model in which the occurrence of *that* was used as dependent variable and the group of second generation speakers was set as reference category,

**Table 3.** Use of demonstratives per participant (the age of acquisition onset is included between parentheses for second generation speakers; asterisks indicate they have siblings)

Fam	Generation	Total nr. already mentioned ref.'s	Total number of demon.'s used (% of total already mentioned)	Total nr. of <i>this</i> (% of total nr. of demon.'s)	Total nr. of <i>that</i> (% of total nr. of demon.'s)
1	First	41	14 (34%)	1 (7%)	13 (93%)
	Second (7)	101	16 (16%)	4 (25%)	12 (75%)
2	First	61	32 (52%)	32 (100%)	0 (0%)
	Second (4.6) *	31	6 (19%)	1 (17%)	5 (83%)
3	First	20	3 (15%)	1 (33%)	2 (67%)
	Second (0)*	78	46 (59%)	0 (0%)	46 (100%)
4	First	58	3 (5%)	3 (100%)	0 (0%)
	Second (1)*	38	19 (50%)	1 (5%)	18 (95%)
5	First	49	9 (18%)	5 (56%)	4 (44%)
	Second (3.5)*	39	9 (23%)	0 (0%)	9 (100%)
6	First	57	12 (21%)	10 (83%)	2 (17%)
	Second (3)	39	10 (26%)	2 (20%)	8 (80%)
7	First	40	17 (43%)	1 (6%)	16 (94%)
	Second (0)*	92	53 (58%)	0 (0%)	53 (100%)
8	First	36	5 (14%)	3 (60%)	2 (40%)
	Second (6)	52	20 (38%)	12 (60%)	8 (40%)
9	First	53	21 (40%)	11 (52%)	10 (48%)
	Second (0)*	46	27 (59%)	0 (0%)	27 (100%)
10	First	87	36 (41%)	4 (11%)	32 (89%)
	Second (4)	46	14 (30%)	11 (79%)	3 (21%)
11	First	88	6 (7%)	0 (0%)	6 (100%)
	Second (0)	45	9 (20%)	0 (0%)	9 (100%)
12	First	95	9 (9%)	5 (56%)	4 (44%)
	Second (6)	52	10 (19%)	0 (0%)	10 (100%)
Na	Homeland	108	18 (17%)	14 (78%)	4 (22%)
Na	Homeland	37	10 (27%)	7 (70%)	3 (30%)
Na	Homeland	96	7 (7%)	2 (29%)	5 (71%)
Na	Homeland	92	30 (33%)	3 (10%)	27 (90%)
Na	Homeland	84	12 (14%)	7 (58%)	5 (42%)
Na	Homeland	63	1 (2%)	0 (0%)	1 (100%)
Na	Homeland	98	8 (8%)	2 (25%)	6 (75%)
Na	Homeland	63	4 (6%)	1 (25%)	3 (75%)
<b>Total</b>		<b>1985</b>	<b>694</b>	<b>143</b>	<b>496</b>

confirmed this expectation. Both homeland speakers ( $b = -1.554$ ,  $SE = 0.472$ ,  $p < 0.001$ ;  $OR = 0.21$ ) and first generation speakers ( $b = -0.855$ ,  $SE = 0.290$ ,  $p = 0.003$ ;  $OR = 0.42$ ) were significantly less likely to use the demonstrative *that* than second generation speakers. Although first generation speakers were twice as likely to use *that* as control group speakers, this difference was not significant. A similar analysis with *this* did not converge due to the small number of occurrences of *this*. However, a simple contingency table shows the pattern observed for *that* was not present in the data for *this* (Table 4). If anything, *this* might be preferred slightly more by first generation speakers in the Netherlands than by control group and second generation speakers.

**Table 4.** Use of demonstratives per group

	Control group	First generation	Second generation
This	36 (6%)	76 (11%)	31 (5%)
That	54 (8%)	91 (13%)	208 (31%)
No demonstrative	551 (86%)	518 (77%)	420 (64%)

Finally, we considered the occurrence of demonstratives in already mentioned contexts in relation to sentence position to investigate the possibility that definiteness marking is obsolete in pre-verbal position, which implies known information. Table 1 already showed that already mentioned referents occur in pre-verbal position more often; however, a generalized linear mixed-effects logistic regression model that included sentence position and group obviously replicated the group effects, but there was no effect of sentence position: demonstratives were equally likely to occur pre- or post-verbally. Nor did we observe interactions between group and sentence position.

## 5. Discussion

The results of this study confirm that definiteness marking is subject to convergence when a language with and a language without articles enter into contact. First and second generation speakers alike showed a significant increase in the use of already mentioned nouns encoded with demonstratives in speakers in the Netherlands compared to homeland speaker controls from China. The data also showed that the effects were substantially larger for second generation speakers; in addition, they demonstrated a clear preference for demonstrative *that* for encoding already mentioned referents, a preference that was not clearly observed in first generation speakers. These observations are in line with Polinsky (2006) and Moro (2016); a

consistent picture seems to emerge from their research and ours, suggesting that when languages with and without articles are paired in a contact situation, morphological encoding of definiteness is likely to occur in the language without articles when an appropriate candidate form is present in that language.

However, one might argue that the increased use of demonstratives in this dataset were not markers of definiteness, but merely reflect increased use of deictic forms, triggered perhaps by the need to be explicit in this task. We consider this explanation unlikely. It is true that some uses of the demonstrative were deictic. However, even if the task triggered more deictic uses than would occur in natural speech, one would not expect differences between homeland speakers and speakers in the Netherlands, unless bilinguals somehow felt a stronger urge to be more explicit. Also, not all uses of demonstratives in already mentioned contexts can be as easily interpreted as deictic. Two contexts of frequent determiner use that we observed in speakers in the Netherlands that were absent in the controls were the use of demonstratives for multiple arguments in one utterance as shown in (8) and the use of demonstratives in reference maintenance context as shown in (9). In contexts like (9), the referent (“clothes”) is a maintained argument in the second half of the sentence. Homeland speakers tend to use bare forms in this case whereas speakers in the Netherlands use demonstratives.

- (8) 他就 把 那个 石头 放 在 那个 凳子上, 另外 那个  
He then BA DEM-CL rock put on DEM-CL chair top, other DEM-CL  
朋友 就站 上去。  
friend stand on.

‘He then put the rock on the chair, and the other kid stands on top.’

- (9) 他们 想 用 那个 球 扔 扔 那个 衣服 上, 希望  
They want to use DEM-CL ball throw at DEM-CL clothes up, hope  
那个 衣服 会 掉下来。  
DEM-CL clothes will fall down.

‘They want to throw the ball at the clothes, hoping that the clothes will fall off.’

Our data also provide an indication that demonstratives are used less for deictic functions in first mention contexts. As discussed in the theoretical background, the primary function of demonstratives in Mandarin Chinese is deictic. All three groups of participants display this function in using demonstratives with first-mentioned referents to indicate spatial contrast.

- (10) 他 然后 把 香蕉皮 扔到 那个 小 篮子。  
He then BA banana peel throw into DEM-CL small basket.

‘He then throws the banana peel into that small basket.’

Example (10) is extracted from our data. The referent “small basket” was mentioned in the previous discourse but is accompanied by a demonstrative. This is to indicate the locational and spatial contrast between the agent who throws away the banana peel and the position of the little basket. The use of the deictic function of demonstratives with first-mentioned referents to indicate spatial contrast remained the same in the first generation speakers of Mandarin Chinese living in the Netherlands. Second generation speakers, however, displayed a significant decrease of demonstratives in first mention contexts as compared to homeland speakers. This could be an indication that the association between demonstratives and already mentioned information is becoming stronger in the second generation.

Because word order is claimed to be an important indicator of definiteness in Mandarin Chinese, we also considered the use of demonstratives in relation to information status and position. As shown in the results section, homeland speakers, first generation speakers and second generation speakers did not differ in their association between information status and preference of word order. As predicted, already mentioned referents were almost equally often placed pre- and post-verbally. The post-verbal position was strongly preferred with first mentioned referents by all three groups. However, counter to our expectation based on Cheng and Sybesma (2005), there were occasions of first mentioned referents placed pre-verbally in all groups. We would like to argue that that this is a task effect. Participants described videos while watching. It is possible that the need to describe what was seen directly triggered use of an indefinite in preverbal position. In Example (11) a man showed up in the ongoing video, participants addressed him immediately with “a man”. As the video went on, the participants further described what he was doing in the scene.

- (11) 一个 男的 在 洗手间 洗 一个 苹果。  
 one-CL man at bathroom wash one-CL apple.  
 ‘A man is washing an apple in the bathroom.’

Apart from observing an increased use of demonstratives in speakers in the Netherlands, we also observed a clear preference for the distal pronoun *nage* (‘that’) in second generation speakers in the Netherlands only. A possible interpretation for the differences between the generations is that it reflects different stages in the process of convergence between Mandarin and Dutch. The first step may involve increased use of morphological markers for definiteness in general, while the second step may be the selection of a morphological marker that is closest to the Dutch definite article, namely the distal pronoun. Piwek et al. (2008) suggest that distal demonstratives in Dutch are more closely connected to definite articles than proximal demonstratives, since distal demonstratives and definite articles in Dutch have a neutral association, as opposed to proximal demonstratives that convey more

marked uses. From a Dutch perspective, then, the distal demonstrative would be the best translational equivalent for a definite article and the preference for distal demonstratives may be an indication of the next step in the convergence process.

If one is willing to accept that the patterns observed in this dataset reflect contact-induced change, then the question becomes: How did this change come about? It has been suggested that change in heritage speakers is due to incomplete acquisition (Benmamoun, Montrul, & Polinsky, 2013 and references therein.). Because the heritage speakers of Mandarin Chinese in the Netherlands grew up in a Dutch dominant society, they may not have learned Chinese to the fullest extent, leaving particular domains prone to change. The results offer some support for such an explanation, as the effects were most pronounced for second generation speakers. This could mean that the experience of learning two languages early in life is the driving force behind contact-induced change. While early bilingual acquisition may certainly be one of the factors in play, this explanation does not seem satisfactory, however, in light of the fact that first generation speakers also clearly showed signs of increased use of demonstratives, a result also reported in Moro (2016). This is unexpected in an explanation exclusively based on incomplete acquisition.

It seems likely, though, that first generation speakers have been subject to similar contact-induced forces of change, which means that explanations need to be sought in patterns of language use. Such sociolinguistically motivated patterns of use have been claimed to be relevant by many (cf. Cornips & Hulk, 2013; Muysken, 2013). This particular dataset is not large enough to quantify the effect of sociolinguistic factors, but some observations are worth mentioning.

For example, the four second generation speakers that showed the highest percentages of demonstrative use (between 50% and 59% in families 3, 4, 7 and 9 respectively) all used Dutch as a language of communication with their siblings and they consumed mostly Dutch media. These four speakers also all arrived in the Netherlands before the age of one (unlike other second generation speakers who arrived between the ages of three to seven). In her study on heritage Malay, Moro (2016) found no effect of age of onset of acquisition (AoA) on the use of overt definiteness morphology. High use of overt definiteness morphology in her data was best predicted by frequent co-activation of Dutch and Malay. Finding out to what extent age of onset and/or co-activation of the two languages predicts demonstrative use in Mandarin heritage speakers would be an interesting avenue for future research.

This study also provides indications that co-activation of the languages may drive contact-induced change. Some first generation users used high rates of demonstratives. For example, the mother in family 2 used demonstratives with 52 percent of the already mentioned referents she produced, although she began to learn Dutch as an adult. This mother was fluent in Dutch and generally watched

Dutch television. What she shared with second generation high demonstrative users is Dutch-oriented media consumption and the use of Dutch outside the school/work context. Her daughter was found not to use many demonstratives (only 19 percent), which may have been due to the fact that she watched Chinese soaps mostly and that many of her friends at university were exchange students from mainland China.

A last question that needs to be addressed is whether the extended use of demonstratives in Chinese was triggered by the presence of articles in Dutch or whether this is an effect of bilingualism more generally. Sorace, Serratrice, Filiaci, and Baldo (2009), who investigated the use of overt subjects in different groups of bilingual speakers, suggest that not only cross-linguistic influence, but also general effects of bilingualism (dealing with a higher processing load for example) may motivate the use of extra overt material. They showed that even when bilinguals have two pro-drop languages, their use of overt subjects is higher than in monolingual speakers. Sorace et al. (2009) note that sensitivity to redundancy may require much input. Similarly, increased use of demonstratives as observed in our data could be a general effect of bilingualism rather than an effect of convergence. To know for certain if the presence of articles in Dutch caused the increase in the use of overt demonstratives in Mandarin Chinese or language contact more generally, it would be good to investigate the use of overt definiteness morphology in a bilingual situation where both languages do not have dedicated definiteness morphology, for example the use of heritage Russian in China. If the bilingual situation itself creates a need for more explicitness (cf. Polinsky 2006) or insensitivity to redundancy, one would expect to see an increase of demonstrative use in such situations despite the absence of articles in Chinese. If on the other hand the observed increase in use of demonstratives is the result of a strategy to increase the structural similarity between the two languages, then one would expect no such increased use of demonstratives when two languages without articles are in contact.

## 6. Conclusion

To conclude, this paper investigated the extended use of demonstratives in speakers of Mandarin Chinese living in the Netherlands. Based on long-term contact studies we predicted and found a higher rate of demonstratives with already mentioned referents in both first and second generation speakers in the Netherlands compared to speakers in China. We expected speakers to use more demonstratives in order to make their Mandarin Chinese structurally more similar to Dutch, their other language, which encodes definiteness obligatorily with articles. We indeed found

that demonstratives were used at a higher rate in Dutch speakers, but additional evidence is needed from a heritage language without articles that is in contact with a dominant language without articles to disentangle general effects of bilingualism from cross-linguistic influence.

Apart from an increase in the use of demonstrative pronouns, our data show a strong preference for the distal pronoun *nage* with already mentioned referents in the second generation, but such effect was not found in the first generation. In Dutch the distal pronoun and the article are more closely connected than the proximal demonstrative and we thus find a more Dutch-like pattern in the second generation. We also observed extensive individual differences in our data. Following Moro (2016) we argue that the process of convergence is influenced most by frequent co-activation of the two languages. Speakers who use both Mandarin and Dutch frequently, preferably in similar sociolinguistic situations, will be most likely to show convergence. In our data, co-activation seemed to explain why we found high rates of demonstratives in some first generation speakers.

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