

Naïve English-speaking Learners' Use of Indirect Positive Evidence: The Case of Mandarin Plural Marking

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Abstract:

When second language (L2) learners are faced with acquiring a grammar that is a subset of their native language (L1) grammar, direct positive evidence is often unavailable. In view of this, we experimentally examine whether learners can instead use indirect positive evidence: evidence drawn from errors in a learner's L1 made by native speakers of the learner's L2. We test whether naïve English-speaking learners of Mandarin can determine that plural morphology is not obligatorily marked on Mandarin nominals. Participants were exposed to a dialogue in English providing indirect positive evidence for the absence of plural marking in Mandarin: plural deletion errors in the Mandarin speaker's English productions. After learning 12 pseudo-Mandarin nouns in singular contexts, participants were tested on their word learning knowledge, using both singular and plural pictures as prompts. 40% of learners correctly deduced that the same string to which they had assigned some singular interpretation was also appropriate in plural contexts, demonstrating sensitivity to the indirect positive evidence they were exposed to in the dialogue. We conclude that indirect positive evidence is likely an effective way for language learners to acquire a grammar that is a subset of their native language grammar.

Keywords:

indirect positive evidence, subset grammar, inflectional morphology, plurals, Mandarin

1. Introduction

In second language acquisition, when the learner's native language (L1) is a subset of the language being acquired (L2), acquisition can be successful based on direct positive evidence alone: evidence in the ambient data that a particular construction is present in the language being learned.¹ In acquiring the phonology of English, for example, the initial clusters in words like *store* and *smile*, if appropriately perceived, indicate to Brazilian Portuguese- or Mandarin-speaking learners that *sC* clusters are well-formed in English, thereby signalling the need for a change to the transferred L1 grammar, which lacks this type of complexity.

When the learner's L1 is a superset of the L2, direct positive evidence that a particular construction is ill-formed in the target grammar is not always available. Acquisition may nevertheless be successful, leading some researchers to propose that L2 learners can make use of negative evidence, either direct negative evidence, where learners are explicitly taught that a particular construction is ill-formed in the language being acquired (see, e.g., White, 1991), or indirect negative evidence, where learners deduce that a construction is ungrammatical from its absence in the available data (see, e.g., Trapman and Kager, 2009). Schwartz and Goad (2017) explore the possibility that L2 learners of subset grammars may have access to another type of evidence, what they call *indirect positive evidence*. Indirect positive evidence is evidence drawn from errors in the learner's L1 made by native speakers of the learner's L2. To illustrate, if a native speaker of English hears a native speaker of Brazilian Portuguese (BP) repair *sC*-initial words in English via [i] epenthesis (e.g., *I went to a really cool [i]store*), the English speaker may correctly surmise that BP does not permit *sC* clusters in initial position. This type of evidence is *indirect* because the constraints that are operative in one language are detected through errors made in the other language.

Schwartz and Goad (2017) experimentally examined the efficacy of indirect positive evidence by probing what English speakers can learn through exposure to L2-accented English via a dialogue between two talkers whose L1 is BP and, thus, contains no initial *sC* clusters. In the dialogue, the talkers repaired all *sC*-initial English words via [i] epenthesis. After exposure, one-third of naïve English learners demonstrated that they appropriately deduced that initial *sC* clusters are ill-formed in BP. The authors thus conclude that indirect positive evidence is likely an effective way for L2 learners to acquire a subset grammar.

In this paper, we probe the potential role that indirect positive evidence may play for learning a subset grammar in another domain: inflectional morphology. Constraints on the marking of inflection are, of course, completely different from those that regulate syllable structure well-formedness, yet the repairs that learners apply when confronted with an L2 that differs from the L1 in either of these domains can overlap, namely, deletion of the offending material. This calls for experimental examination of learners' ability to use indirect positive evidence for inflection. Specifically, we test whether naïve English-speaking learners of Mandarin can detect deletion of plural morphology in the English productions of Mandarin speakers; and, if so, whether they can appropriately conclude that deletion indicates that plural is not (obligatorily) marked on Mandarin nominals.

¹ This type of evidence is simply called positive evidence (or primary linguistic data) in previous literature (e.g., Schwartz, 1993; White, 2003). We use the term direct positive evidence because we will contrast it with indirect positive evidence below in the text.

2. Learning a subset grammar

When the learner's L1 is a superset of the language being learned, direct positive evidence that a particular structure is ill-formed in the target grammar may be available, but it is not guaranteed. We first demonstrate this in the phonological domain, using *sC* clusters for English-speaking learners of three languages, Spanish, BP and Mandarin, which differ in the type of evidence available (§2.1). We then turn to the inflectional domain, focusing on plural constructions for English-speaking learners of Mandarin (§2.2). Although the focus of the experiment we undertake is on inflection, we begin with syllable structure because our intention is to compare, to the extent possible, the results of our study with those of Schwartz and Goad (2017). To our knowledge, these are the only two studies on indirect positive evidence and, thus, a comparison is warranted to try to determine the potential scope of this type of evidence across multiple domains of the grammar.

2.1 Positive evidence in the phonological domain

In this section, we return to the challenge that learners from an L1 that permits *sC* clusters (e.g., English) face in acquiring a language that does not (e.g., Spanish, BP or Mandarin).² Direct positive evidence that this type of complexity is ill-formed in the language being learned could be available through morphophonemic alternations. For *sC* clusters, this holds for learners of Spanish but not for learners of BP or Mandarin.³ To determine that *sC* clusters are illicit in Spanish, learners can compare verbs like *subscribir* 'to sign, endorse' and *subtitular* 'to subtitle' with their nonprefixed counterparts, *escribir* 'to write' and *titular* 'to title', to arrive at the conclusion that *sub-* is a prefix. Further pairwise comparisons of the data should lead learners to conclude that the initial vowel in *escribir* (pronounced [e]) has no morphological function (it is not a prefix), given its corresponding absence from *titular* and *subscribir* and must have been epenthesis due to a ban on *sC* clusters in initial position. For this type of evidence to be accessible to learners, however, the patterns must be productive: frequent enough throughout the lexicon with relatively transparent similarities in meaning across related words.

For certain L1–L2 combinations, direct positive evidence may also or alternatively be available through a comparison of cognates. For example, English-speaking learners may determine that initial *sC* is ill-formed in Spanish or BP by comparing pairs like English *school* and Spanish [e]*scuela* or BP [i]*scola*. Finally, again for certain L1–L2 combinations, direct positive evidence may come in the form of loanword adaptations. English-speaking learners of Spanish, BP or Mandarin may determine that initial *sC* is ill-formed in these languages by recognising that the source of Spanish [e]*scúter*, BP [i]*scooter* and Mandarin [sùkèdá] is English *scooter*. For both cognates and loanword adaptations to be effective as direct positive evidence, not only must suitable words be robustly attested across the lexicon of the target L2, but the shapes of related words and associated meanings must be sufficiently close for learners to make the appropriate pairings.

² The arguments in this section closely follow Schwartz and Goad (2017).

³ Mandarin has no suitable morphophonemic alternations that learners could draw on. BP has morphologically-related pairs like those discussed for Spanish in the text, but epenthesis also applies in prefixed forms. Consider, for example, the following pairs, selected to mirror as closely as possible those provided for Spanish: [i]*screver* 'to write' vs. *sub*[i]*screver* 'to underwrite'; *título* 'title' (N) vs. *sub*[i]*título* 'subtitle' (N).

Clearly, learning the phonology of a subset grammar poses challenges that are not present when learning a superset grammar. For some languages, there may be no alternations signalling the ungrammatical status of a particular structure in the language being learned. For others, there may be no available or accessible cognates or loanwords. In view of this, we may be tempted to conclude that learners exposed to a subset grammar will have great difficulty acquiring the target grammar, unless they can draw conclusions based on negative evidence. We mentioned above, however, that Schwartz and Goad (2017) propose that another type of positive evidence may be available when learning a subset grammar, namely indirect positive evidence. In the case of *sC* clusters, the evidence should be relatively accessible to learners: English-speaking learners of BP, for example, should be able to correctly surmise from BP speakers' productions like [i]store for English *store* that BP does not permit *sC* clusters in initial position. We illustrate next that the situation with inflectional morphology, at least in the language under consideration, Mandarin, is less straightforward.

2.2 Positive evidence in the inflectional domain

As mentioned, our goal is to explore the potential value of indirect positive evidence in the domain of inflectional morphology, by focusing on naïve English-speaking learners' understanding of plural marking on Mandarin nominals. Unlike in English, where plural morphology must be obligatorily marked on count nouns in contextually plural contexts, nouns are generally not marked for number in Mandarin; see (1a-b). The suffix *-men* optionally appears on human nouns, although there are conditions on its use: *-men* restricts interpretation to definite reference, (1c); and it cannot cooccur with numerals or measure word expressions, (1d)-(1e) (examples adapted from Po-Ching and Rimmington, 2016).

- | | | |
|--------|--------------------------------|----------------------------------|
| (1) a. | xīn shū | 'a new book'/'new books' |
| b. | háizi | 'child'/'children' |
| c. | háizimen | 'the children', *'some children' |
| d. | sān ge háizi, *sān ge háizimen | 'three children' |
| e. | jǐ ge háizi, *jǐ ge háizimen | 'several children' |

The first question we ask is: what might actual English-speaking learners conclude about plural marking in Mandarin when exposed to constructions like those in (1)? The presence of *-men* in (1c) provides direct positive evidence to learners that plural can be overtly marked on Mandarin nominals. There is, however, no positive evidence available that the constructions in (1a-b) and (1d-e) with *-men* are ungrammatical. That is, although the presence of both marked and unmarked forms in contextually plural contexts for items like (1c) will lead learners to recognize that plural marking is in some sense optional in Mandarin, it is unclear what kind of direct positive evidence could lead learners to conclude that plural marking is not optionally permitted in constructions like those in (1a-b) and (1d-e) as well.

In view of this, the second question we ask is: could English-speaking learners of Mandarin employ indirect positive evidence to inform them about plural marking in Mandarin? If the Mandarin speakers who these English-speaking learners converse with in English fail to reliably mark plural in their English productions, the English speakers could use these errors to conclude that Mandarin either does not mark plural or marks it in a subset of the conditions under which it is marked in English. Whether the English speakers can truly use this evidence requires, of course,

that the errors be detected.⁴ Detection of errors would seem to be more likely if Mandarin speakers' failure to mark plural in English led to misinterpretation on the part of their English-speaking interlocutors. Misinterpretation, though, is not inevitable, if the pragmatic context is sufficiently rich or if syntactic cues, such as a disambiguating determiner (*two book, some book*), are present.

The third question we therefore ask is: if there is a low probability of widespread misinterpretation, does this mean that errors in the Mandarin-speaking learners' productions of English will go unnoticed by English-speaking interlocutors? We might be tempted to conclude that the answer is no. After all, in English-type languages, where uninflected stems can surface as words, every time inflection is deleted (*books* → *book*), the learner's production will inadvertently collide with the word's uninflected counterpart (*book*).⁵ At the same time, though, since the core meaning and lexical category of the word have not changed, errors may be detected by some, but perhaps not by all, English speakers.

Assuming that at least some English speakers can detect the plural deletion errors made by Mandarin speakers, the fourth question we must ask is whether these English speakers (who, recall, are striving to learn Mandarin) can use the errors to inform their understanding of plural marking in Mandarin: English speakers may fail to connect the behaviour observed with the Mandarin grammar it reflects; alternatively, they may be unsure how to interpret the behaviour observed, that is, how to determine what part of the Mandarin grammar is implicated.

If the contexts of plural suppliance and omission in Mandarin speakers' English productions aligned with the syntactic constraints observed in (1), the indirect positive evidence available to English-speaking learners of Mandarin could be particularly informative.⁶ However, other factors are also at play, notably phonology (Young, 1991). Consistent with this, Lardiere (2007, 2009) points out that even when Mandarin learners of English have overcome the L1 restrictions identified in (1), they still often fail to mark plural morphology in their productions. Viewed more broadly, then, omission of plural morphology could arise from mismatches between the L1 (Mandarin) and L2 (English) grammars on multiple levels. It could indicate a syntactic mismatch between the L1 and L2: that plural marking in the L1, as optional or forbidden, is determined by constraints on syntax and interpretation that do not hold in the L2 (Lardiere, 2007,

⁴ Of course, the same concern also holds for the English-speaking learner of BP exposed to words like [i]store. As we discuss in section 3, there are differences between errors like [i]store for store and book for books that lead us to question whether both types of errors are equally detectable.

⁵ Compare deletion in segmentally similar monomorphemic words: the output of *s* deletion in [fiks] 'fix' does not collide with an existing word (*[fik]), whereas it does in [læks] 'lax' (cf. [læk] 'lack') and, in the latter case, both the core meaning and lexical category of the word have changed, unlike with the deletion of inflection.

⁶ We say *if* because results available from the literature on Mandarin speakers' English productions do not seem to align with (1). Young (1991) observes: (i) that definite DPs do not favour plural marking, even though *-men* restricts interpretation to definite reference; (ii) that animacy inhibits plural marking for low proficiency learners, which is unexpected from the marking of *-men* on human nouns only; and (iii) that the presence of redundant plural marking, as in plural constructions containing numerals or measure word expressions, which disallow *-men*, promotes plural marking, in contrast to DPs where there is no other indication of plurality. The latter has also been found for Japanese- and Korean-speaking learners of English (Mellow and Cumming, 1994; Austin, 2014), two languages with similar constraints on plural marking as hold in Mandarin (Song, 2005; Martin, 1975).

2009; Young, 1991); it could signal a phonological mismatch between the L1 and L2: the absence of necessary syllable structure or segmental complexity at the right edge of Mandarin words (Lardiere, 2009; Young, 1991); and/or it could signal a morpho-phonological mismatch between the L1 and L2: differences in the organisation of inflection into higher prosodic structure in the two languages (Goad and White, 2019; Goad, White, and Steele, 2003).

Clearly, the real world value of indirect positive evidence for the problem at hand – understanding (the absence of) plural marking on Mandarin nominals – is difficult to determine, because constraints on the grammar of Mandarin conspire such that there are many potential sources for omission of plural in Mandarin speakers' English productions. This is strikingly different from the case of *sC* cluster well-formedness discussed earlier: only a mismatch between the L1 (BP) and L2 (English) at the level of syllable structure could be responsible for the epenthesis pattern observed in BP speakers' English productions (*store* → [i]*store*). In view of this, as our goal in this paper is to examine the potential efficacy of indirect positive evidence for the learning of inflectional morphology, we limit the number of factors that could be at play in the errored data that naïve learners of Mandarin are exposed to, as we discuss more concretely in section 4.2. We first present the research questions that underlie our study.

3. Research questions

The overarching research question (RQ) that drives our research is whether indirect positive evidence can be used when acquiring a subset grammar in the domain of inflectional morphology. This is expressed as RQ1, which has two sub-questions, RQ1(a) and RQ1(b), that we explicitly test in our experiment:

- (2) RQ1: Can indirect positive evidence be effectively used in the domain of inflectional morphology?
 - RQ1(a): Can learners' errors in the inflectional domain be detected by native speakers?
 - RQ1(b): Can native speakers connect the errors observed in learners' productions with the grammar of inflection it reflects?

If our experimental results suggest that the answer to RQ1 is yes, this would extend the potential benefit of indirect positive evidence beyond the realm of syllable structure (examined in Schwartz and Goad, 2017). RQ2 and RQ3, however, draw attention to other factors that might impede success in the inflectional domain: RQ2 concerns the type of repair involved in the data to which learners are exposed; RQ3 concerns the edge of the word where the repair takes place.

The type of repair observed in the productions of Mandarin-speaking learners of English plural inflection is different from that observed in the productions of BP-speaking learners of English *sC* clusters. Accordingly, the type of indirect positive evidence available to native English-speaking interlocutors is different. In the latter case, where Schwartz and Goad (2017) found that indirect positive evidence was utilised by some English speakers, the evidence available was *additive*: it came in the form of insertion of material in relation to native speaker productions (namely, epenthesis; e.g., *store* → [i]*store*). In the case under present investigation, the indirect positive evidence available to English speakers is *subtractive*: it comes in the form of absence of material relative to native speaker productions (namely, *-s* omission: *books* → *book*). This leads to our second research question:

- (3) RQ2: Can indirect positive evidence be effectively used when the error in non-native speakers' productions is subtractive: the absence of material obligatorily marked in the target L2?

The comparison we have made here is not intended to imply that repairs of syllable structure mismatches between the L1 and L2 are always additive (e.g., vowel epenthesis to repair initial *sC* clusters). In fact, syllable structure mismatches, especially at the right edge of words, commonly lead to repairs that are subtractive (as in fn. 5); for example, final clusters in monomorphemic words are reduced to singletons in Vietnamese- and Thai-speaking learners of English (see Sato (1984) and Hancin-Bhatt (2000), respectively). Phonological mismatches between the L1 and L2 could also be responsible for the omission of plural morphology in the productions of Mandarin-speaking learners of English, as mentioned in section 2.2. Difficulties that L2 learners have with the production of inflectional morphology, however, are rarely additive; inflection is seldom oversupplied but, rather, undersupplied in obligatory contexts (Lardiere, 1998; Prévost and White, 2000), even when the L2 is more restrictive than the L1 (see, e.g., Hwang and Lardiere, 2013 on English-speaking learners' production of Korean intrinsic plural *-tul*).^{7,8} In view of this, we expect that subtractive errors will pose a greater challenge for learners trying to understand the indirect positive evidence available to them because many mismatches between the L1 and L2 grammars could lead to such errors, as discussed in section 2.2.

Another difference between Schwartz and Goad (2017) and the current study concerns the edge of the word where errors are present. For BP-speaking learners of English, initial *sC* clusters are repaired via prothesis: epenthesis before the cluster (*store* → [i]store). This kind of repair can impede word recognition (Marslen-Wilson, 1984; Marslen-Wilson and Zwitserlood, 1989) and, thus, errors of this sort should be more detectable to English-speaking interlocutors than errors present at the right edge of words. Indeed, material at the right edge tends to erode across languages, and lenition or deletion can target segments in monomorphemic words as well as segments that have a morphological function. For example, in Andalusian, Caribbean and coastal varieties of Latin American Spanish, the trajectory *s* → *h* → ∅ is observed in final position (Alcina Franch and Blecua, 1975; Lipski, 1994), in both monomorphemic (e.g., /brindis/ → [brindis] ~ [brindih] ~ [brindi] 'toast, party') and plural contexts (e.g., /baka-s/ → [bakas] ~ [bakah] ~ [baka] 'cows'; examples from Miller and Schmitt, 2012). Similarly, in English, *t-d* deletion can apply in both monomorphemic contexts (e.g., *find*) and in words inflected for past tense or participial

⁷ As mentioned in the text, additive means insertion of material in comparison to native speaker targets. In the realm of inflectional morphology, this can only manifest as oversuppliance of inflection in unmarked contexts (e.g., *a books*) or suppliance of one inflection in a context where another is contextually appropriate (e.g., *yesterday, she walks to the store*). If a learner produces *some books* with a final vowel ([səm bʊksɪ]), this is not additive from the perspective of morphology but, rather, from the perspective of phonology.

⁸ Jia (2003) reports that child L2 Mandarin-speaking learners of English oversupply plural on count nouns in singular contexts. From the way the data are reported, it is not possible to determine exactly how many errors were of this type, but Jia notes (p.c., 13 June 2020) that they were comparatively rare. McIlwain and Peterson (2005) report a handful or such errors in two French-speaking 'post-basic' learners of English (1% and 7% of target regular plurals). As discussed below (§5), orthographically-expressed plural marking on French nominals is rarely overtly produced.

morphology (e.g., *fined*) (e.g., Coetzee, 2004; Guy, 1994; Labov, 1989). This leads to our third research question:

- (4) RQ3: Can indirect positive evidence be effectively used when the error in non-native speaker productions is at the right edge of words?

In our study, the three research questions we have discussed are connected in that the empirical focus, deletion of plural morphology in Mandarin speakers' English, does not allow us to address one in the absence of the other. This means that if naïve learners cannot use the indirect positive evidence available because the errors are not costly enough (where high cost may lead to miscommunication and thus to greater potential detection of the error), we will not be able to determine exactly where the challenge lies: with the detection of errors in the inflectional domain, errors that are subtractive, or errors at the right edge of words. Nevertheless, we can evaluate the potential cost that this cluster of properties presents by comparing our experimental results with those of Schwartz and Goad (2017). Although their study involved detection of errors in the syllable structure domain, errors that are additive, and errors that occur at the left edge of words, participants in both studies had similar experience with the available indirect positive evidence, both in the length of exposure via a dialogue and in the density of errors, as we will discuss in the next section.

4. Experiment

We experimentally examine whether naïve English-speaking learners of Mandarin can use indirect positive evidence – in the form of subtractive errors in final position – to conclude that Mandarin (generally) does not employ plural morphology to signal more than one interpretations. To probe this question, participants listened to a dialogue in English providing indirect positive evidence for the absence of plural marking on Mandarin nouns. The dialogue was designed to mimic a real-world interaction between a Mandarin-speaking learner of English and a native speaker of English. In this way, the methodology builds on that employed by Schwartz and Goad (2017). Participants in their study were also exposed to indirect positive evidence in the form of a dialogue; however, the two interlocutors were both BP-speaking learners of English. In a naturalistic setting, interlocutors who share the same native language are unlikely to converse in their L2, which is why our dialogue involved interlocutors who do not share the same L1. The type of interaction we employed is thus likely to more closely reflect the indirect positive evidence a real language learner would be exposed to.

Subsequent to hearing the dialogue, participants were required to learn the names for several Mandarin nouns in singular contexts. They were then tested on their word learning knowledge, using both singular and plural pictures as prompts. If learners are sensitive to the indirect positive evidence they were exposed to in the dialogue, it was expected that they would correctly deduce that the same string to which they had assigned some singular interpretation would also be appropriate in plural contexts, that is, that Mandarin does not mark plural morphology on nouns.

4.1 Participants

Participants were 43 native speakers of English, 19-35 years in age. They all had no knowledge of or previous exposure to any Chinese language (aside from hearing Chinese spoken now and again in their environment). Other exclusionary criteria were as follows: participants could not have attained higher than an intermediate level of proficiency in any other language; they could not have a hearing deficit; and they could not have had chronic ear infections as children. Participants were recruited via online advertisements, were tested in person, and were compensated for their time.

Participants were randomly assigned to two experimental groups: an exposure group ($n = 21$; 9 males, 12 females) and a control group ($n = 22$; 10 males, 12 females) (see further §4.3). One participant from the exposure group was excluded due to the level of proficiency he had attained in Japanese; Japanese is similar to Mandarin in the conditions under which plural morphology, which is optional, can be marked on nouns (Martin, 1975).

4.2 Materials

The method used to expose participants to indirect positive evidence was a 4-minute dialogue (736 words in length) between a native speaker of Mandarin and a native speaker of English (see Appendix). Productions were relatively balanced across interlocutors (Mandarin speaker: 359 words; English speaker: 378 words; 19 turns each). In the Mandarin speaker's utterances, there were 24 nominals in contextually plural contexts, all of which were incorrectly produced as their singular counterparts. In contrast, to limit the number of factors that could be responsible for plural deletion, the speaker's productions of agreement morphology, *s*-shaped clitics, and [s~z] at the right edge of monomorphemic forms were error free. Participants listened to the dialogue twice (see §4.3), for a total of 48 errored productions over 8 minutes, which is similar to the amount of exposure participants were reported to have had in Schwartz and Goad (2017) (48 errored productions over 7 minutes).

As mentioned, the participants were also required to learn 12 pseudo-Mandarin words: real Mandarin words, each of which was paired with a novel singular referent to ensure picturability and facilitate learning.⁹ All words were CVV or CVN in shape. Segments were selected to ensure that the words would be distinct enough from each other to minimise perceptual difficulties for the English-speaking participants who, recall, had had no previous exposure to Mandarin. All words were produced with tone 4 (falling tone) to ensure that they would sound natural to anglophones when produced in isolation, a context where falling intonation is observed in English. The words and associated meanings are provided in (5) (transcribed in IPA; a grave accent indicates tone 4):

(5) [pèi]	'cup'	[bìn]	'fan'	[màu]	'cat'	[sùn]	'cake'
[tòu]	'plum'	[dàn]	'star'	[màn]	'hat'	[lìn]	'tree'
[kài]	'car'	[gòu]	'book'	[nèi]	'bag'	[lùn]	'mop'

The English counterparts of the nouns in (5) did not appear in the productions of the Mandarin speaker in the dialogue, in neither singular nor plural contexts. Thus, participants should not have made a connection between the dialogue and the word learning task at the point when

⁹ Participants were told that the words were actual words of Mandarin. At the end of the experiment, they were informed that this was not, in fact, the case.

they were learning the sound–meaning pairings. Any connection would be made later, if at all, when participants were tested on their ability to use the indirect positive evidence that they were exposed to in the dialogue in order to generalise the names for the singular items in (5) to plural contexts. We provide further details on this in the Procedure section.

The dialogue and pseudo-Mandarin words were recorded in a sound-attenuated booth, using a Roland-05 recorder (settings: 16-bit mono channel, 44.1 KHz). The voices for the dialogue were a male native speaker of English and a female native speaker of Mandarin. The pseudo-Mandarin words were recorded by the same female speaker who participated in the dialogue. All recordings were saved in wav format and later transferred to computer.

4.3 Procedure

The experiment involved four activities: listening to the dialogue; training on Mandarin singular nouns; testing on Mandarin singular nouns and their plural counterparts; and answering follow-up questions. Participants in the exposure group were involved in all four activities, whereas participants in the control group were involved in three: only the exposure group listened to the dialogue and, thus, only this group received indirect positive evidence about the absence of plural marking in Mandarin. Participants in both groups received identical training on the 12 pseudo-Mandarin words and were involved in the same testing sessions on these words. All of them answered questions about their responses to the last testing session, although the questions differed somewhat for the two groups (see below).

The experiment was conducted on a MacBook Pro laptop and took place in a sound-attenuated booth. All participants wore headphones (Beats ML992LL/A). The training and testing activities were presented using PsychoPy v3.0 (Peirce et al., 2019). After giving informed consent, participants filled out a questionnaire, which solicited basic demographic and language background information. They then proceeded to the experiment.

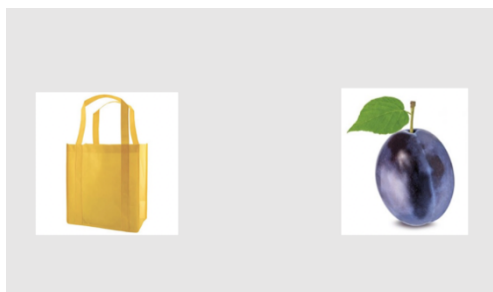
The experiment took place over two consecutive days, for approximately one hour per day (see Table 1). The two days were structured similarly in terms of the activities that participants were engaged in and the order in which tasks were conducted within these activities. The difference between the two days concerned the nature of the final task: maxi test 1 vs. maxi test 2, detailed below.

Table 1. Schedule for experiment: exposure and control groups.

	Exposure group	Control group
Day 1	Step 1: listen to dialogue	Step 1: mini training 1
	Step 2: mini training 1	Step 2: mini test 1
	Step 3: mini test 1	Step 3: mini training 2
	Step 4: mini training 2	Step 4: mini test 2
	Step 5: mini test 2	Step 5: mini training 3
	Step 6: mini training 3	Step 6: mini test 1
	Step 7: mini test 1	Step 7: maxi text 1
	Step 8: maxi text 1	
Day 2	Repeat steps 1-7 from Day 1	Repeat steps 1-6 from Day 1
	Step 8: maxi text 2	Step 7: maxi text 2
	Step 9: follow-up questions	Step 8: follow-up questions

Participants in the exposure group first listened to the dialogue. Training and testing on the 12 pseudo-Mandarin words followed for both groups. To optimise learning, the 12 words were divided into three training sessions (mini training 1-3), each of which focused on four words. In a given mini training session, each auditory stimulus and its corresponding picture was presented three times, yielding a total of 12 trials per session. The stimuli were presented in random order using PsychoPy. Each stimulus was separated by an interval of 350ms.

Each mini training was immediately followed by a mini test on the four words previously taught. Each word occurred twice, in two different trials, yielding a total of eight trials per mini test. Words were presented in random order. In each trial, a single auditory stimulus was heard (using the same audio recording from the training session). Its corresponding picture and another picture randomly selected from the other three in the same session occurred synchronously on the laptop screen, as exemplified in Figure 1. Participants were asked to listen to the word and select its corresponding picture by pressing LEFT (referring to the left-hand picture) or RIGHT (referring to the right-hand picture), as per labels attached to keys on the computer keyboard. Their response triggered a 350ms interval of silence, after which the next trial began. Feedback on participants' selections was provided immediately after a response was made: a high-pitched *ding* indicated a correct response, while a low-pitched *buzz* referred to an incorrect response. The correct answers (LEFT or RIGHT) were counterbalanced.

**Figure 1.** Sample trial in mini test, for target word [nèi] ‘bag’.

In maxi test 1, at the end of Day 1, all 12 words were tested with the same method used in the mini tests. Each word occurred twice in two different trials, yielding 24 trials presented in random order. Feedback was provided, as in the mini tests.

Day 2 repeated the same steps from Day 1 to ensure that participants remembered the words they had previously been trained on. For the exposure group, this was preceded by participants once again listening to the dialogue. At the end of Day 2, participants completed maxi test 2, which was designed to probe whether participants in the exposure group could use the indirect positive evidence they were presented with in the dialogue to generalise the names for the singular items on which they were trained to plural contexts. Importantly, participants were not given feedback in maxi test 2; thus, we also used this test to determine how well they had learned the Mandarin names for the nouns, that is, in singular contexts.

In maxi test 2, participants were asked to listen to a word and select a corresponding answer among three choices: two objects (pictures), in singular or plural form, displayed on the left and middle of the screen, and NEITHER shown on the right side of the screen to be selected if neither the left nor middle object was the correct answer, as shown in Figure 2. The plural pictures did not involve two identical copies of the corresponding singular picture (as is common in wug tests designed for children), because pilot testing suggested that this increased participants' decision-making based on analogy.

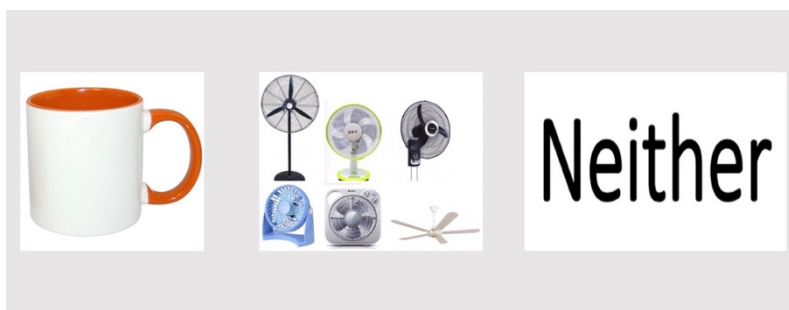


Figure 2. Sample trial in maxi test 2 for target word [bin] ‘fan’.

In addition to the 12 words that participants had been trained on, six new pictures that had not appeared in the mini training sessions, mini tests, or maxi test 1 were added. The pictures were of words that are semantically similar to six of the words that participants were trained on: *bowl* (similar to *cup*), *moon* (similar to *star*), *broom* (similar to *mop*), *air conditioner* (similar to *fan*), *grape* (similar to *plum*), and *truck* (similar to *car*). Each of their pictures occurred twice, once as a single object and once as multiple objects, where they substituted for the semantically matched stimuli that appeared in the corresponding trials in maxi test 2.¹⁰ This was done to try to disguise the purpose of the task; we hoped that introducing stimuli that were semantically similar to those that participants has been trained on would detract away from participants' noticing that all training

¹⁰ For example, in Figure 3, the singular- and plural-form pictures of *bowl*, displayed in trials 4 and 7, respectively, substituted for the singular- and plural-form pictures of *cup* in the two corresponding trials that appeared in maxi test 2.

words were paired with their plural counterparts in testing.¹¹

There were a total of 96 trials in maxi test 2: 24 singulars and 24 plurals as well as 48 distractors, which were added to mask the intended goal of the study. Each word on which participants were trained appeared in eight different trials, with stimuli presented in random order. Take the word [pèi] ‘cup’ as an example: in Figure 3, trials 1 and 5 served to test whether participants had learned the Mandarin words from the mini training sessions; trials 2 and 6 examined whether the indirect positive evidence in the form of plural errors in the dialogue was used to make correct responses (for the exposure group); and trials 3, 4, 7 and 8 were distractors.

















Trial No.	Auditory stimulus	Choices			Correct answer	Testing target
		LEFT	MIDDLE	NEITHER		
1	[pèi] ‘cup’			neither	LEFT	singular
2	[pèi] ‘cup’			neither	LEFT	plural
3	[bìn] ‘fan’			neither	NEITHER	distractor
4	[pèi] ‘cup’			neither	NEITHER	distractor
5	[pèi] ‘cup’			neither	MIDDLE	singular
6	[pèi] ‘cup’			neither	MIDDLE	plural
7	[màn] ‘hat’			neither	NEITHER	distractor
8	[màn] ‘hat’			neither	NEITHER	distractor

Figure 3. Test trials for the target word [pèi] ‘cup’ in maxi test 2.

¹¹ No participant incorrectly selected the newly added words as the correct answer. For example, in the trial when the word [pèi] ‘cup’ was heard, no one selected the semantically matched *bowl* (or *bowls*) as the correct answer. Thus, we do not discuss these words further.

After maxi test 2 was complete, participants were asked some follow-up questions, the answers to which were used to help interpret their results. Participants in the exposure group were asked questions 1-3 below; participants in the control group were asked question 3 only.

1. Did you notice anything unusual or anything wrong with the dialogue; if yes, what did you notice?
2. Did you see any connection between the dialogue and the training/testing sessions; if yes, what was the connection?
3. In the final testing session, were there any cases when a word was heard, such as [pèi] meaning ‘cup’, where you selected the plural picture (*cups*) as the correct answer; if yes, why?

4.4 Results

In this section, we report on the data collected from maxi test 2. Individual participants’ accuracy rates in responding to singular and plural test items were first calculated. To ensure that poor performance on the plural stimuli was not due to deficiencies in learning the names for the singular objects on which participants were trained, minimum performance on the singulars was set at 21/24 (87.5%) correct. The probability that a participant could randomly select the correct answer among three equally likely options 21 times out of 24 is less than 0.0001%. Two participants from the control group and one from the exposure group did not meet this criterion and so were excluded from further analysis.

4.4.1 Results by group

The results by group for the remaining 39 participants (control group: $n = 19$; exposure group: $n = 20$) are provided in Table 2. As can be inferred from the table, the majority of participants in both groups achieved high accuracy rates on the singulars: both groups had a minimum score of 87.5% with similar means: 96.3% for the control group and 95.4% for the exposure group. Unsurprisingly, a one-way ANOVA revealed that there was no significant difference between the two groups’ performance on the singulars ($F(1, 37) = 0.91, p = 0.345$).

Table 2. Performance of the control and exposure groups on maxi test 2.

Test items	Group	Minimum score (%)	Maximum score (%)	Mean (%)	S.E.
singulars	control	87.5	100	96.3	0.95
	exposure	87.5	100	95.4	0.94
plurals	control	0	91.7	20	7.16
	exposure	0	95.8	55.5	8.54

Table 2 shows that the situation is markedly different for the plurals: performance was overall much lower, and for some participants in both groups, it was as low as 0%. Although the minimum and maximum scores provided may suggest that the two groups performed similarly, the means are considerably different: 20% and 55.5%, respectively. A one-way ANOVA indicated

that the exposure group's plural accuracy was significantly higher than that of the control group ($F(1, 37) = 9.10, p = 0.005$).

4.4.2 Results by individual

Figures 4 and 5 provide individual results on the singular and plural stimuli for the control and experimental groups, respectively. Participants in each group are ordered according to their performance on the plurals. For participants in the control group, who were not exposed to the dialogue, we would expect to find near 0% correct on the plurals. Figure 4 shows that this holds for 16 of the 19 participants (C10 to C12, who got 0%-16.7% correct). There are, though, three participants (C5, C4, C15) whose performance is 87.5% or higher. Participants thus follow two markedly different patterns of behaviour, which requires some explanation.

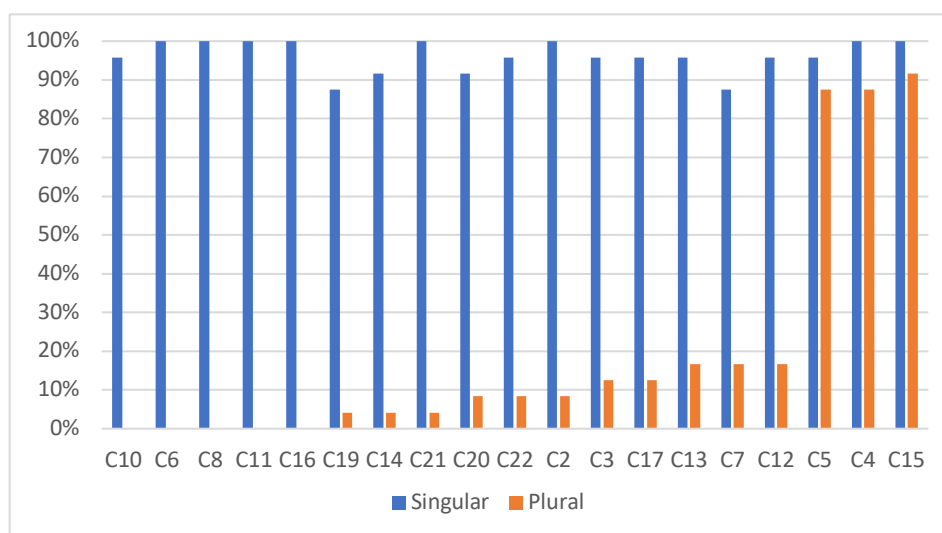


Figure 4. Results by individual for the control group.

Recall that participants in the control group were asked the following question after they completed maxi test 2: In the final testing session, were there any cases when a word was heard, such as [pèi] meaning 'cup', where you selected the plural picture (*cups*) as the correct answer; if yes, why? The 11 participants in the middle of Figure 4 (C19 to C12), who got 4.2%-16.7% of plurals correct, responded that their plural responses were random guesses. In contrast, participants C5, C4 and C15, who got a minimum of 87.5% of plurals correct, responded that their plural responses were based on analogy with the singulars they had learned.

Figure 5 provides the results for the exposure group. Recall that participants in this group listened to the dialogue and, thus, they could, in principle, take advantage of the indirect positive evidence it provided and generalise the names for the singular items that they were trained on to plural contexts. In view of this, we might expect these participants to be near ceiling on the plurals, parallel to their performance on the singulars. Like the control group, however, participants in the exposure group showed two distinct patterns of behaviour: ten participants were correct on the plurals 0%-25% of the time, while the other ten were correct 75-95.8% of the time.

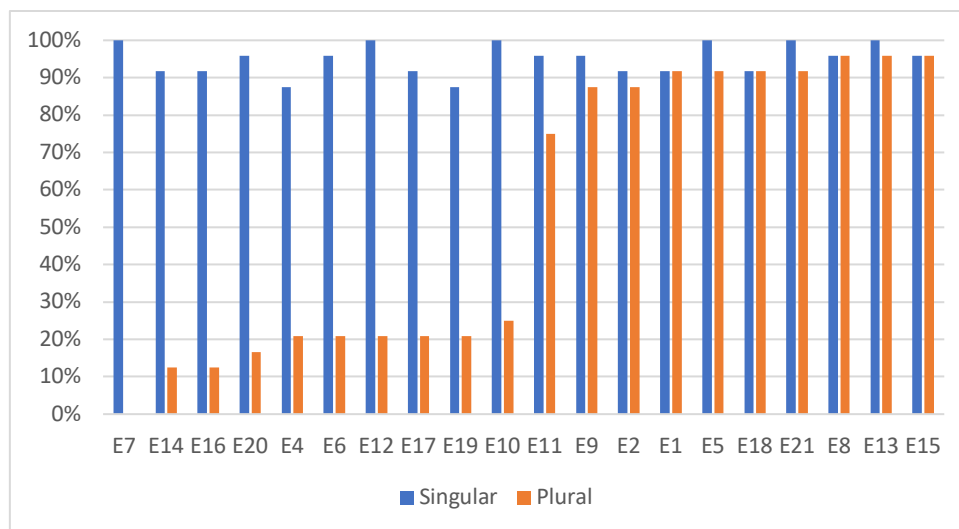


Figure 5. Results by individual for the exposure group.

Since the three learners in the control group who performed well on the plurals reported using analogy, we must assess whether the ten high performing participants in the exposure group similarly used analogy or whether they instead used the indirect positive evidence available in the dialogue. To tease these options apart, we examine participants' responses to the first two questions they were asked after they completed maxi test 2: Did you notice anything unusual or anything wrong with the dialogue; if yes, what did you notice? Did you see any connection between the dialogue and the training/testing sessions; if yes, what was the connection?

We begin with the ten participants in the exposure group whose performance ranged from 0% to 25%. Five of these participants (E7, E14, E4, E12, E17) reported that they failed to notice the plural mistakes in the dialogue and therefore did not see a connection between the dialogue and the training/testing sessions. The other five (E16, E20, E6, E19, E10) said they noticed several plural mistakes in the dialogue but did not see any connection between these mistakes and the training/testing sessions. Clearly, these ten participants did not use the indirect positive evidence available. Not surprisingly, then, in response to the final question (In the final testing session, were there any cases when a word was heard, such as [pèi] meaning 'cup', where you selected the plural picture (*cups*) as the correct answer; if yes, why?), these ten participants, like the 11 controls in the middle of Figure 4, responded that their plural responses were random guesses.

Let us now turn to the ten participants whose performance on the plurals was at 75% or higher. Success on the plurals could be due to analogy or it could be due to their use of indirect positive evidence. In response to the first question, all participants reported that they noticed the plural errors in the dialogue. Two participants (E11, E9), though, failed to see a connection between these mistakes and the training/testing sessions. In response to the third question, these two reported that their correct responses were based on analogy. These participants are not using (or are not aware that they are using) the indirect positive evidence available.

Turning, finally, to the eight remaining participants (E2, E1, E5, E18, E21, E8, E13, E15), all of them reported that they saw the connection between the dialogue and the training/testing sessions. In response to the third question, they reported that they concluded from the errors they observed in the dialogue that Mandarin does not mark plural and they used this to generalise the

names for the singular items they were trained on to plural contexts, thereby using the indirect positive evidence available.

5. Discussion

The principal finding of our experiment serves to answer our first research question: RQ1: Can indirect positive evidence be effectively used in the domain of inflectional morphology? We can answer this question affirmatively for eight out of 20 (40%) participants in the exposure group. These participants successfully used the indirect positive evidence available in the dialogue – absence of plural marking in the Mandarin speaker’s English productions – to appropriately deduce that plural is not (obligatorily) marked on Mandarin nominals. Specifically, these learners correctly concluded that the same string to which they had assigned a singular interpretation in the word learning task was appropriate for use in plural contexts, evidenced through their performance on maxi test 2 and their answers to the follow-up questions we posed.

Our first research question contained two sub-questions: RQ1(a): Can learners’ errors in the inflectional domain be detected by native speakers? RQ1(b): Can native speakers connect the errors observed in learners’ productions with the grammar of inflection it reflects? We can answer RQ1(a) positively for 15 of the 20 (75%) participants in the exposure group. These participants noticed plural mistakes in the dialogue. However, this is only the first step toward being able to use indirect positive evidence. Detecting the deletion errors and connecting these errors to the appropriate property of the Mandarin grammar, the focus of RQ1(b), was only attained for eight of these 15 participants, as discussed in the preceding paragraph. We return to the remaining seven participants below.

Our two other research questions were as follows: RQ2: Can indirect positive evidence be effectively used when the error in non-native speakers’ productions is subtractive: the absence of material obligatorily marked in the target L2? RQ3: Can indirect positive evidence be effectively used when the error in non-native speaker productions is at the right edge of words? We conjectured that deletion errors at the right edge might be difficult for learners to interpret and possibly even to detect, given that deletion can reflect many types of L1–L2 mismatches and that final position is where languages commonly display lenition. This contrasts with the errored productions of *sC* clusters in Schwartz and Goad (2017): in their study, errors were additive and occurred at the left edge; such errors could only be attributed to a mismatch at the level of L1–L2 syllable structure and could impede lexical access and thus be better detected by interlocutors. In view of these differences, we might have expected that the participants in our study would have performed less well than those in Schwartz and Goad (2017), where 11 out of 32 (34%) participants successfully used the indirect positive evidence available to infer that *sC* clusters are ill-formed in BP.¹² Surprisingly, however, participants in our study performed somewhat better than this: eight out of 20 (40%) were successful. The two studies cannot be directly compared, due to the many methodological and empirical differences between them; nevertheless, we can use the results from both studies to inform our understanding of why so many of the participants in our study were successful.

¹² Note though that most of the participants in Schwartz and Goad (2017) who demonstrated an ability to use indirect positive evidence overgeneralized their understanding of when epenthesis applies to include all *s*-initial contexts.

We expect that the high success rate among our participants may be due to the prosodic profile of many of our stimuli, in contrast to the prosodic profile of the stimuli in Schwartz and Goad (2017). We mentioned earlier that prothesis can impede word recognition (Marslen-Wilson, 1984; Marslen-Wilson and Zwitserlood, 1989), which would seem to make vowel insertion before *sC* clusters detectable and, thus, a good source of indirect positive evidence for learners. However, the prothetic vowel in the Schwartz and Goad study was unstressed and low in sonority (high front), potentially enabling listeners to overlook it more readily than its initial position might otherwise suggest. In our study, by contrast, deletion of plural morphology occurred from nouns with final stressed syllables in 15 of the 24 (63%) cases, and from nouns at the right edges of phonological or intonational phrases in 11 of the 24 (46%) cases. Both of these contexts are prominent: Cole and Jakimik (1976) observe that pronunciation errors are detected more readily in stressed syllables than in unstressed syllables; and lengthening in phrase-final position is observed in many languages, including English (Wightman, Shattuck-Hufnagel, Ostendorf and Price, 1992) and Mandarin (Yang and Wang, 2002). In short, these prosodic factors could enhance detection of plural deletion in many of our stimuli.

If prosodic factors truly underlie the success of the participants in our study, we might wonder why seven participants stated that they noticed the plural errors in the dialogue but did not connect these errors with the grammar of inflection it reflects (see RQ1(b) above). We speculate that this might be because these participants observed that [s~z] in final position was deleted on occasion, but they did not generalize a regular pattern of plural deletion; that is, they failed to connect all instances of deletion specifically to plurality. Recall that the dialogue was designed to limit the number of factors that could be responsible for plural deletion, and so the speaker's productions of agreement morphology, *s*-shaped clitics, and [s~z] at the right edge of monomorphemic forms were produced as error free (see §4.2). Nevertheless, given that [s~z] deletion and [s~z] retention both occurred with some frequency in the dialogue (24 plural items with [s~z] deleted vs. 16 other items with [s~z] retained), some of these listeners might have detected instances of [s~z] deletion but might not have unequivocally related them to plural. If this were the case, they would not have been equipped to connect the word learning task to the dialogue via their answers to maxi test 2.

Although we have shown that 40% of learners were able to make the appropriate connection and thereby use the errors in the dialogue to inform their understanding of plural marking in Mandarin, a number of questions arise from our study about the efficacy of indirect positive evidence for real language learning. In our experiment, deletion of plural morphology was categorical: participants were exposed to errored data in 100% of contexts where plural would be obligatorily marked in English. In real language learning contexts, however, the productions of L2 speakers are variable. For the case at hand, the challenge for the English-speaking learner of Mandarin is to try to identify the syntactic, semantic and pragmatic conditions (in (1)) under which plural is and is not marked in Mandarin using Mandarin speakers' variable production of English plural. In order to effectively use indirect positive evidence to tap into (1), however, the English speaker must be able to isolate other source(s) of variation in plural suppliance in the English productions of Mandarin speakers that could obscure the conditions in (1): most importantly, variable suppliance could reflect other linguistic factors, notably L1–L2 phonological mismatches, but non-linguistic factors (e.g., cognitive load) and speaker-specific factors (e.g., proficiency level) could also be at play.

The challenge with Mandarin plural marking is very different from that of *sC* cluster well-formedness discussed earlier: only a mismatch between the L1 and L2 at the level of syllable

structure could be responsible for the epenthesis pattern observed (*store* → [i]store), although variable epenthesis tied to related constraints (e.g., what type of consonant follows *s*), as well as to non-linguistic and speaker-specific factors could, of course, still play an obfuscating role. The comparison we have made between plural marking in Mandarin and *sC* clusters in BP might imply that we assume that indirect positive evidence is likely to be more effective in the phonological domain than in the inflectional domain. This might often be the case, because phonological constraints always have the potential to impact the realization of morphology. Accordingly, the value of indirect positive evidence for the acquisition of morphology will likely depend on how different the segmental and syllable structure constraints are for the two languages under consideration. As a comparison to the case of English speaking learners of plural marking in Mandarin, we can consider the case of English speaking learners of plural marking in Hexagonal French. In the latter case, the learner must determine that plural, which is orthographically suffixed to French nominals, is only produced when a vowel-initial word in the same phonological phrase (PPh) follows and only in formal speech (*cinq amis intelligents* [sɛ̃k ami (z)ɛ̃teliʒɑ̃]_{PPh} ‘five intelligent friends’); *les filles à côté* [le fij (z)akote]_{PPh} ‘the girls next door’).¹³ Plural marking is often deleted in the English of French-speaking learners (McIlwain and Peterson, 2005), but deletion is less likely to be attributed to segmental or syllable structure constraints due to English and Hexagonal French being similar in the profiles that they permit at the right edge of words.

In conclusion, we expect that indirect positive evidence will likely be more effective in the real language learning of a subset grammar when the hypothesis space for learners is (largely) confined to one area of the grammar, for example phonology in the case of *sC* clusters for English-speaking learners of BP and inflectional morphology in the case of plural marking for English-speaking learners of French. We leave exploration of the efficacy of indirect positive evidence for real language learning to future research.

¹³ Plural marking on determiners is, however, obligatorily realized before vowel-initial nouns (e.g., *mes amis intelligents* [me zami (z)ɛ̃teliʒɑ̃]_{PPh} ‘my intelligent friends’).

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Appendix:

Contextually plural nouns produced without *s* inflection are underlined.

1. Liu Hua: Excuse me, I'm looking for the Student Service Centre. Do you know where it is?
2. Jerry: Yes. I'm heading there now. We can go together if you like.
3. Liu Hua: That would be great! Thank you!
4. Jerry: So, are you a new student at McGill?
5. Liu Hua: Yes, I am. I just arrived in Montreal. What about you?
6. Jerry: I'm a 3rd year student. Where are you from?
7. Liu Hua: I'm from China. This is my first time abroad. What about you? Are you a Canadian? I mean, you have blue eye, which is just like what I saw in western movie.
8. Jerry: Haha, you're right! I grew up in Montreal, so I know every corner of this city. I can show you around if you like.
9. Liu Hua: Cool! Then I assume you know where I can buy some food, like real coffee bean and some fresh fruit. Oh, and some snack too. I love potato chip.
10. Jerry: You can find all that stuff in local supermarkets, like Metro and IGA. Where do you live?
11. Liu Hua: I live in LaCité. Not far from campus. I haven't had time to explore nearby place yet. Are there many shop near where I live?
12. Jerry: Lucky you – your place is within walking distance of the campus. I know that Metro and Provigo are both close to where you live.
13. Liu Hua: What about kitchen item, like plate?
14. Jerry: I usually go to Dollorama. Things are very cheap there. And you can find almost everything you need for your kitchen in that one store. Do you live alone or do you share an apartment with others?
15. Liu Hua: I live alone. Though I'd like to have some dog, but the building manager doesn't allow me to have any pet.
16. Jerry: Yeah, that's pretty common in Montreal. It's for sanitary and safety reasons. Is your apartment a 3 and a ½?
17. Liu Hua: What do you mean by a 3 and a ½? I have four room: one bedroom, a living room, a kitchen, and a bathroom. Is that a 3 and a ½?
18. Jerry: Yes, that's a 3 and a ½. The ½ is the bathroom. It must be spacious for you since you live alone.
19. Liu Hua: Definitely! And it is totally empty now. I mean, literally. So I'm thinking about buying some flower to brighten it up.
20. Jerry: Good idea! You can find flowers at the supermarket or in a flower shop.
21. Liu Hua: Great! How about cinema and bookstore or maybe a library? I love watching film and reading. They are definitely two of my favourite hobby.
22. Jerry: There are lots of cinemas and bookstores downtown. The ones I usually go to are on Sainte-Catherine Street, very close to the campus. And there's a library on campus, right next to the Student Service Centre.
23. Liu Hua: Sounds good! I'm planning on visiting some nearby city during the summer break. Do you have any suggestion where I should go?
24. Jerry: Well, you could begin with Ottawa. It's the capital of Canada.
25. Liu Hua: Is it far from Montreal?

26. Jerry: Not at all. It takes about 3 hours to get there by train or bus. There are many interesting places to visit in Montreal too.
27. Liu Hua: I heard that Mont-Royal is famous.
28. Jerry: Yeah, it's nice. And there are interesting places that are close to Montreal too, like the Granby Zoo in the Eastern Townships. My family and I used to go there a lot when I was a kid.
29. Liu Hua: A zoo? I used to visit the zoo in my hometown with other kid from my school. It was fun. I especially love the elephant, but usually you can't find them in an urban zoo. It's amazing that their trunk are so flexible and they can pick up so many different object. How about the Granby Zoo? Are there any exotic animal there?
30. Jerry: Of course! It's a big zoo. There are elephants there too. But it's a bit far from Montreal. You'll need a car to get there. Actually, my friends and I are planning on going there next weekend. You can join us if you like.
31. Liu Hua: That's wonderful! I'd love to, thank you!
32. Jerry: You're welcome. Okay, here we are. You see the building on the left-hand side? That's the Student Service Centre.
33. Liu Hua: Is it the one behind the wall?
34. Jerry: Yup. And that's the library beside it.
35. Liu Hua: Thank you so much! By the way, my name is Liu Hua.
36. Jerry: I'm Jerry. Nice to meet you Liu Hua.
37. Liu Hua: It's nice to meet you Jerry. This is my e-mail. I'll see you next weekend!
38. Jerry: Great, see you then!