GENERIC REFERENCE IN ADULT GERMAN BILINGUALS: HOW BILINGUALS DEAL WITH VARIATION*

Tanja Kupisch & Dagmar Barton

Abstract. This study investigates subject nominals in German in adult simultaneous bilinguals (2L1s) with French or Italian as the other language, focusing on plural and mass nouns with a definite article. These have a specific interpretation in written Standard German, while they are ambiguous between a specific and a generic interpretation in the Romance languages and in some varieties of German. The aims are to (i) characterize the end state grammar regarding a phenomenon that does not only show partially overlapping syntactic properties in the two target languages but also intra linguistic variation, (ii) compare 2L1 and L1 end state grammars, (iii) investigate the role of frequency of exposure and (iv) study the role of overlap with the contact languages. Results from an acceptability judgment task and a truth value judgment task suggest that 2L1s with frequent exposure to German are more conservative than monolinguals, tending towards overcorrection rather than cross linguistic influence.

1. Introduction

A target grammar that mirrors the rules stated in a grammar book is a theoretical construct that rarely, if ever, matches the situation found in a given linguistic community. This paper is concerned with the acquisition of a phenomenon that is subject to variation in German: article use with plural and mass subjects that have generic reference. Moreover, we investigate how such an unstable phenomenon is acquired by simultaneous bilingual speakers (2L1s) who have faced the additional challenge of being exposed to two languages.

As far as generic nominals are concerned, the theoretical literature has largely been concerned with English. With plural and mass subject nominals, English requires nouns to be preceded by a definite article (henceforth DPs) when reference to a specific entity is made, as in (1), while requiring bare noun phrases (henceforth NPs) with generic reference, as in (2).

(1) a. The sunflowers (in my garden) are artificial. (specific)
    b. #Sunflowers (in my garden) are artificial.1

*The research presented in this article was funded by the German Science Foundation (DFG) as part of the project E11 at the Research Centre on Multilingualism in Hamburg. We thank Giulia Bianchi, Nadine Kolb, Tom Roeper, Neal Snape, Marit Westergaard as well as three anonymous reviewers for discussion and comments. Special thanks to Ilse Stangen for designing the pictures for the TVJT and Timm Lehmberg for programming the AJT.

1 The number sign indicates that the sentence is in principle grammatical, but a certain reading (here: the generic one) is unavailable.
Monolingual English-learning children overaccept definite articles in generic sentences, such as (2b) (Pérez-Leroux, Munn, Schmitt & De Irish 2004; Serratrice, Sorace, Filiaci & Baldo 2009). Bilingual children acquiring English simultaneously with Italian show an even stronger inclination to do so, possibly due to influence from Italian, where the equivalent of (2b) is well-formed (Serratrice et al. 2009).

It has often been pointed out that German differs from English in allowing article use with generic nominals (Brugger 1993; ter Meulen 1995; Longobardi 1994; Krifka, Pelletier, Carlson, ter Meulen, Chierchia & Link 1995; Dayal 2004; Oosterhof 2004). In other words, while German shares with English the option equivalent to (2a), it also allows the translation equivalent of (2b). However, as outlined in more detail below, approaches differ in terms of whether this article is considered “expletive” (e.g. Longobardi 1994), “optional” (e.g. Dayal 2004), semantically driven (e.g. Brugger 1993), or subject to a Standard/Non-Standard dichotomy (e.g. Oosterhof 2004). Empirical studies on this phenomenon in German are scarce. The only study published so far (Kupisch & Pierantozzi 2010) showed that monolingual German and German-Italian bilingual children allowed generic readings for definite marked DPs. Although decreasing with age, this tolerance was still found in the adult control group. (But note that even monolingual English-speaking adults overaccept a small percentage of definite plural generics; see Pérez-Leroux et al. 2004).

The question we address here is what happens when speakers have to deal with two grammars at the same time, especially when there is variation in one of these grammars. We investigate generic nominals in adult simultaneous bilingual speakers (2L1s) of German, 19 with Italian and 22 with French as their second L1, addressing the following questions:

(i) What is the end-state grammar in acquisition of a phenomenon that differs in the two languages of a bilingual speaker and shows additional variation in the target language (here: German)?
(ii) How does the bilingual end-state grammar differ from that of a monolingual speaker?
(iii) What difference does it make whether German was the dominant language of the linguistic community when the languages were acquired?
(iv) What is the role of structural overlap with the contact language (here: Italian or French)?
2. Generic noun phrases

Generic nominals are used to denote abstract classes of objects (kinds), while specific nominals denote entities or objects identifiable from the linguistic or extra-linguistic context. Languages may use DPs or bare NPs (as well as other devices less relevant here) to express genericity. There is no linguistic device that is used exclusively for generic reference, and genericity is only one of several functions that articles can express.

Generic nominals can be singular or plural. German, French and Italian require articles with generic nominals in the singular, as in (3). The German examples in (3) and (4) are taken from the German dictionary *Duden* (1998: 318f). (Examples are not glossed separately if the sequence of words is the same in all three languages.)

(3) a. Ge. Die Katze ist ein Haustier.
   b. Fr. Le chat est un animal domestique.
   c. It. Il gatto è un animale domesticato.

   the cat is a domestic animal
   ‘The cat is a domestic animal.’

This paper is concerned with plural and mass nouns having a generic reading, where written Standard German uses bare NPs, similar to English, while French and Italian require nouns to be preceded by definite articles, as shown in (4) for plural nouns:

(4) a. Ge. Katzen sind Haustiere.²
cats are domestic animals
   b. Fr. Les chats sont des animaux domestiques.
      the cats are of-the animals domestic
   c. It. I gatti sono animali domestici.
      the cats are animals domestic
      ‘Cats are domestic animals.’

By contrast, all three languages require the definite article when reference to specific entities is made:

   b. Fr. Les chats sont noirs.
   c. It. I gatti sono neri.

   the cats are black
   ‘The cats are black.’

In the absence of additional cues for genericity (e.g. adverbs, aspect, non-linguistic contextual information, type of predication), plural DPs

² In fact, the Duden also mentions *Die Katzen sind Haustiere* (literally: the cats are domestic animals) as a grammatical option, referring to it as an "extensional generalization of the article".
in French and Italian are semantically ambiguous. For instance, It. I gatti dormono molto (lit.: the cats sleep a lot) can mean ‘Cats sleep a lot’ or ‘The cats sleep a lot.’ The same is true for DPs with mass nouns.

2.1. Variation with generic plural nominals in German

As mentioned above, there is some controversy surrounding the question whether German or varieties of German are similar to Romance in allowing definite marked singular and plural DPs for generic reference.

According to several authors, articles may appear before plural or mass nouns in German if they have generic reference, although bare NPs are also used (Longobardi 1994; Krifka et al. 1995; Ter Meulen 1995; Oosterhof 2004). Following Longobardi (1994:653), the sentences in (6) and (7), with and without the article, are synonymous, and he considers the definite article to be an expletive.

(6) a. (Die) Biber bauen Dämme.
   the beavers build dams
   ‘Beavers build dams.’

   b. (Die) Milch ist weiß.
   the milk is white
   ‘Milk is white.’

Longobardi (1994) does not explicitly mention any asymmetries between plural count and mass nouns, and, despite assuming regional variation, does not specify the varieties to which this applies. Krifka et al. (1995:68) also mention variation in German, pointing out that generic DPs are allowed more often with mass nouns than with plural count nouns, again, without specifying the alleged varieties. Oosterhof (2004:16) postulates a difference between Standard and Non-Standard German and, similar to Krifka et al. (1995), only with respect to mass nouns: Non-standard varieties of German allow a definite article here, as in (6b); Standard German disallows it. Importantly, none of the relevant papers (see also Dayal 2004; Ter Meulen 1995:355f.) makes reference to particular varieties.

According to Brugger (1993), article use is more frequent with kind-level predicates (e.g. die out, be extinct, be widespread; see (7)) than with individual-level predicates (e.g. have four legs, build dams; see (6)). He assumes that generic sentences can be expressed using either bare NPs or

3 The relevant distinction is that between stage, individual and kind level predicates (Carlson 1977). A stage level predicate is true of a temporal stage of its subject (e.g. John is tired); an individual level predicate is true throughout the existence of an individual (e.g. John is generous); a kind level predicate is true of a kind of thing, but cannot be applied to individual members of the kind (e.g. Mosquitos are widespread in Lapland).
DPs, with a tendency for DPs to denote kinds. Bare NPs have an existential interpretation and are not allowed in kind-referring sentences (cf. (7a) vs. (7b)). However, not all authors consider the distinction between individual- and kind-level predicates to be relevant for article use with generic statements (e.g. Ter Meulen 1995:356).4

(7) a. dass Dinosaurier dabei sind auszusterben.
   that dinosaurs in.the.process are die out
   ‘that dinosaurs face extinction.’

b. dass die Dinosaurier dabei sind auszusterben.
   that the dinosaurs in.the.process are die out
   ‘that the dinosaurs face extinction.’ (Brugger 1993:4)

Barton, Kolb & Kupisch (in prep.) tested these claims about German on the basis of an acceptability judgment task (AJT) with monolingual native speakers of German from different regions. Six conditions were compared: Definite DPs in generic statements with an individual-level predicate and an adverbial expression (in bold print) cueing genericity (8a), definite DPs in generic statements with an individual-level predicate but without such a cue (8b), definite DPs containing kind-level predicates (8c), as well as sentences of the same three types containing bare NPs. (For reasons of space, the examples are not glossed. Relevant DPs are underlined. In the English translations, the definite article is not required). All statements were preceded by a context sentence, as shown in the examples:

(8) a. An alle Vielflieger: Die Flugzeuge sind im Allgemeinen schlecht
    für die Umwelt.
    ‘To all frequent flyers: In general, (the) planes are bad for the
    environment.’

    ‘As a child I already knew: (The) pencils cause allergies.’

c. Der leckere Sirup ist in Kanada viel billiger, denn die Ahornbäume
    sind dort weit verbreitet.
    ‘The delicious sirup is much less expensive in Canada, because
    (the) maple trees are more widespread there.’

Speakers living in Hamburg (North West Germany, n = 11) tolerated articles more readily with kind-level predicates than with individual-level (i.e. generic) predicates. In statements with kind-level predicates, DPs were replaced by bare NPs only 23% of the time. With individual-level predicates, such corrections were made 52% of the time in the absence of

4 When designing our study, we intended to look at structures in which German and Romance languages differ. Due to the postulated difference between individual and kind level predicates (which implies similarities between German and Romance with regard to the latter) we had excluded kind level predicates. While the study was ongoing, we observed that speakers of German also accepted definite articles with individual level predicates.
a cue, and 63% of the time if there was a cue. Bare NPs remained the default for generic nominals with acceptance rates of 100% for all types of contexts. The study was replicated in Southern Germany (Freiburg i. Br.) and in Central Germany (Rhein-Main). Again, in generic contexts both bare NPs and DPs with definite articles were accepted; definite articles were tolerated more often with kind-level predicates than with individual-level predicates.

Summarizing, there is little consensus on how the observed variation in German can be characterized semantically and diatopically. We proceed from the assumption that bare NPs are the default for plural and mass nouns with generic reference in German. However, it is an undeniable fact that German differs from English in also tolerating generic DPs here.

2.2. Cross-linguistic variation within Romance

A well-known difference between French as compared to Italian (and other Romance languages) is that French is more restrictive in the use of bare NPs (Lyons 1999; Longobardi 1994, 1999). Longobardi (1999:584) proposes the following typology:

(9) a. languages with no bare nouns (French)
   b. languages with stricter bare nouns (apparently the rest of
      Romance: Spanish, Italian …)
   c. languages with freer bare nouns (English and perhaps most of
      Germanic)

“English bare plurals and bare mass nouns are syntactically and semantically rather unrestricted, but in Romance, when possible at all (French essentially does not allow them), they may survive only in lexically governed contexts and may have only the existential reading (and not the generic one”). (Longobardi 1994:630; our emphasis)

The most obvious difference between French and Italian is found with objects that have an existential interpretation, as in (10) (Italian example from Longobardi (1994:615)): Italian allows plural and mass nouns to be bare or accompanied by a partitive article (with a subtle difference in meaning), while the French translation equivalent requires an indefinite plural or partitive article.

(10) a. It. Ogni giorno mangia (delle) patate.
    b. Fr. Chaque jour il mange *(des) pommes de terre.

Italian also allows bare NPs with unaccusative verbs, but only in object position (11a). French does not allow the noun to be bare in any of the corresponding sentences, as shown in (11b) (but note that the first
sentence in (11b) is unacceptable also because *des filles can only be in subject position).

(11) a. It. Sono arrivate (delle) ragazze. vs. *(Delle) ragazze sono arrivate.
   b. Fr. Il est arrivé *(des) filles. vs. *(Des) filles sont arrivées.

Contrary to what is mentioned in the above quote, more recent work has identified further contexts for bare NPs in Italian (Longobardi 2000, 2001). These bare NPs can only be used when they are made extra-heavy by modification, and the more modified they are the more acceptable they become (see (12a,b); examples from Chierchia 1998:385). Bare NPs are more acceptable with individual-level predicates than with kind-level predicates (Longobardi 2001:343). Translations into French require a definite article, as shown in (13a,b).

(12) a. ??Ragazze in minigonna sono estinte.
   ‘Girls in miniskirts are extinct.’
   b. Insegnanti davvero dediti nella scuola di oggi sono quasi estinti.
   ‘Loyal teachers are almost extinct in today’s schools.’

(13) a. *(Les) filles en minijupe sont en voie d’extinction.
   b. *(Les) enseignants réellement voués à l’école d’aujourd’hui se font vraiment rare.

To sum up, Italian allows bare NPs more readily than French, although such bare NPs usually occur as (less formal) variants of DPs with articles. Italian bare NPs can have an existential or a generic reading, and they can appear in subject and object positions (under certain well-defined semantic and syntactic conditions). Therefore, with respect to article use in subject nominals, Italian is more similar to German than French.

3. Possible end-state grammars for generic DPs in a bilingual context

The grammars of adult bilingual speakers are often said to differ from those of monolinguals, and the term “incompleteness” has been used to

5 There are other contexts in which the Romance languages allow bare NPs, namely vocatives and predicate nominals, but since these concern non argumental positions, we do not discuss them here. Furthermore, both Italian and French allow bare argument NPs in coordinations (Roodenburg 2003, 2005 for French).
describe them (e.g. Montrul 2008). It is debatable whether the term “incomplete” is well-chosen in this context though. What distinguishes bilingual from monolingual grammars is that the former exhibit more optionality (in the case of end state grammars) or “protracted indeterminacy” (in the case of developing grammars), especially with respect to phenomena at the external interfaces (see Sorace, 2005; Sorace, 2011 for near-native L2ers and L1 attriters).

In order to investigate how bilinguals deal with variation in the input we examine a case where one of the bilinguals’ two languages (the target grammar) shows variation partially overlapping with the other language (the contact grammar) — a situation that has rarely been discussed in the literature. In the following, we outline possible end state scenarios.

We build on a distinction introduced by Sorace (1993) in the context of near-native L2 acquisition: The near-native grammar could be divergent, containing representations of L2 properties that are different from the native representations. An incomplete grammar, lacking a given L2 property P, leads to random, inconsistent, indeterminate judgments about P; a divergent grammar, on the other hand, since it incorporates an alternative representation of P, leads to judgments that are consistently different from native judgments.

With respect to generic nominals in German, there are four hypothetically possible (bilingual) end-state grammars:

A. Speakers may allow only bare plural and mass NPs with generic reference and only DPs with specific reference. Their grammar corresponds to the written Standard German variety, and we refer to it as a conservative grammar, because if bilingual speakers behave accordingly, they are more conservative than the monolingual speakers they interact with.6

B. Speakers may reject bare NPs with specific reference but they may accept both bare NPs and DPs with generic reference to a similar extent as monolingual speakers. This is the option found in the German input and we will refer to it as a motivated variation grammar.

C. Speakers may reject bare NPs altogether regardless of whether reference is specific or generic. They might do so because they have incorporated a property of the French/Italian grammar into German and ruled out a structural option that is only available in German. We will refer to this option as a mixed grammar, where “mixed” does not refer to inconsistent behaviour but to the

6 Relatedly, although in the context of language attrition and syntactic reduction, Andersen (1982:99) mentions: It is possible that “[t]he LA [language attriter, TK & DB] will preserve and overuse syntactic constructions that more transparently reflect the underlying semantic and syntactic relations.”
existence of a “Romance Default grammar for nominals” within German.7

D. Speakers may accept not only DPs but also bare NPs regardless of whether reference is specific or generic. This would be an option that is unmotivated given the properties of the input languages and we will refer to it as an unmotivated variation grammar. This option could occur when speakers do not understand the semantics associated with overt and covert articles in German and do not automatically transfer their knowledge from French or Italian.

Finally, one may also expect different outcomes depending on speakers’ learner profile: A speaker with low proficiency and few occasions to hear and use the language may end up with grammar D; a speaker who is fluent but nonetheless dominant in the Romance language may develop grammar C; a speaker who has had a lot of contact with spoken German, may develop grammar B; meta-linguistic awareness and explicit instruction in German may result in grammar A.

Among these four grammars, the conservative and mixed grammars could be considered divergent from the monolingual input. The unmotivated variation grammar is closest to an incomplete grammar, as NPs and DPs are used inconsistently. At first sight, the motivated variation grammar may also look incomplete according to the definition in Sorace (1993), because DPs are employed inconsistently. However, the existence of such a grammar in German (and perhaps other languages) calls for a non-judgmental use of the term “incomplete”, as this grammar may simply reflect existent variation in the target language. Table 1 summarizes the four possible end-state grammars.

Table 1. Theoretically possible end state grammars for specific and generic reference in German.

<table>
<thead>
<tr>
<th></th>
<th>conservative grammar</th>
<th>motivated variation grammar</th>
<th>mixed grammar</th>
<th>unmotivated variation grammar</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPs</td>
<td>Only generic reference</td>
<td>Generic reference</td>
<td>Specific and generic reference</td>
<td>Specific and generic reference</td>
</tr>
<tr>
<td>DPs</td>
<td>Only specific reference</td>
<td>Specific and generic reference</td>
<td>Specific and generic reference</td>
<td></td>
</tr>
</tbody>
</table>

7 This option too, can be viewed in terms of syntactic reduction, as suggested by Andersen (1982:99) for language attriters (LAs): “An LA will use a smaller number of syntactic devices (transformations, constructions) than an LC [linguistically competent individual, TK & DB] of the same language.”
4. Study

We designed an Acceptability Judgment Task (AJT) to investigate the acceptance of bare NPs and DPs with specific and generic reference in German, as well as a Truth Value Judgment Task (TVJT) looking into the interpretation of bare NPs and DPs. Although the AJT was bimodal and timed, there is a risk that those bilinguals who had relatively less experience in reading and writing German — which was to some extent true of those who grew up in France or Italy — were disadvantaged. We therefore tested the phenomenon in two different experiments, assuming that the TVJT would elicit more intuitive judgments than the AJT.

4.1. Participants

The participants were 41 adult simultaneous bilinguals (2L1s), 22 German-French and 19 German-Italian. All grew up in bi-national families and their parents followed the one person–one language strategy. Participants had used both languages actively at least until school entry. No subjects were dyslexic; all could read German and their Romance language.

Participants differed in terms of whether they had grown up predominately in Germany, France or Italy. One participant had spent most of his childhood in an Italian-German family in Belgium. We included him among the participants who grew up in Germany (see below). He fulfilled all other inclusionary criteria we had previously defined, German was his stronger language, and he had spent a long time in Germany, where he was living at the time of testing.

The Italian-German 2L1s who grew up in Germany (n = 11, including the aforementioned speaker) were between 19 and 39 years old (mean age: 29). They had spent an average of 2 years in Italy and used more German than Italian on a daily basis. None of them attended a bilingual school, but two were students of Italian language and literature at the University of Hamburg. All 2L1s in this group were recruited in Hamburg.

The French-German 2L1s who had grown up in Germany (n = 12) were between 20 and 42 years old (mean age: 27) and resident in Hamburg (Northern Germany) at the time of testing. They had spent an average of 18 months in a French-speaking country. Four of them went to a German-French bilingual school in Hamburg, 6 to a German school and 2 to a monolingual French school.

The 2L1s who had grown up in Italy (n = 8) were between 18 and 38 years old (mean age: 27). All participants but one in this group were recruited in Italy and had never spent more than 6 consecutive
months in Germany. They used more Italian than German daily and reported that they felt more at ease when using Italian than when using German. Five of them attended a German-Italian bilingual school.

The 10 German-French 2L1s who had grown up predominantly in France ranged in age between 24 and 41 years (mean age: 33). During the first 19 years of their lives, most of them travelled to Germany only for occasional holidays. Only one of them attended a German school. Unlike the 2L1s born in Italy, this group was recruited in Germany and had been living in Berlin (n = 9) or Hamburg (n = 1) between 4 months and 21 years (mean: 8.3 years) prior to testing. All but one used more German than French daily.

All 2L1s had a high school degree, and most of them were university students or had graduated from university. All participants but one claimed to have “good” or “very good” knowledge of English; many had additional knowledge of other foreign (often Romance) languages.

In the TVJT, the 2L1 speakers are compared to a group of ten monolingual L1 speakers of German — a subgroup of Barton et al.’s (in prep.) participants (see above). They had grown up with monolingual German parents in North Western Germany (mostly Hamburg) and were aged between 22 and 49 years at the time of testing (mean: 34 years). They all have a high-school degree and learnt their first foreign language at school at age 10 or later. All were proficient in English, and most of them (n = 8) in one or several other foreign languages.

4.2. Acceptability Judgment Task (AJT)

Test items
All participants completed an AJT with 40 items targeting article use in specific and generic subject contexts. A total of 8 sentences were constructed with a context calling for a specific interpretation (specific condition), while 32 test sentences were constructed with a context calling for a generic interpretation (generic condition). We used only individual-level predicates to test generics (see Footnote 6).

Of the 32 test items in the generic condition, 16 contained bare grammatical NPs, as in (14). These items (50% with mass nouns, 50%...
with count nouns) tested whether the participants would accept bare subject NPs in cases where the equivalent French and Italian sentences require a DP.

(14) Grammatical bare subject NP, generic condition
Hast du das auch in der Schule gelernt? Löwen leben in der Savanne.
Did you also learn that at school? Lions live on the savanna.

‘Did you also learn that at school? Lions live on the savanna.’

The remaining 16 items in the generic condition contained definite subject DPs, as in (15). Again, 50% of the DPs contained mass nouns and 50% contained plural count nouns. These items tested whether the participants would correct DPs with a definite article (to bare NPs) in cases where French and Italian require DPs, while German does not, although some varieties allow them.

(15) Subject DP with a definite article, generic condition (subject to variation)
Ein guter Koch weiß: Der Pfeffer macht jede Suppe würziger.
a good cook knows the pepper makes every soup more spicy

The remaining 8 stimuli tested whether the participants had problems using or not using a definite article when the preceding context was biased towards specific reference (compare (16) and (17)), where an article is required in all three languages.\footnote{11}

(16) Grammatical subject DP with definite article, specific condition
Ich wollte lernen, aber die Bücher sind zuhause.
I wanted to learn but the books are at home

‘I wanted to study, but the books are at home.’

(17) Ungrammatical bare subject NP, specific condition
Ich wollte lernen, aber Unterlagen sind zuhause.
I wanted to study but documents are at home

Items were constructed in pairs so that each sentence with a bare NP had a DP counterpart with a definite article, which was similar in length, context sentence and content.

\footnote{11 Fewer items were used in this condition since we were primarily interested in the generic condition. Moreover, among the 104 remaining AJT items 44 contained sentence initial DPs of which most (n 36) had specific reference and very few (n 8) generic reference. They are excluded from the present analysis as they were manipulated for other properties, such as gender.}
Procedure
The stimuli were randomized and presented acoustically and written in yellow on a black computer screen. Context sentences appeared in a different colour. The participants were instructed to read and listen to each example, and to repeat the yellow part of the stimulus if they thought it sounded good or correct it if they thought it sounded bad. Response time was limited and corresponded to three times the duration of the test sentence read by a native speaker.

Results
The participants’ repetitions and corrections were examined and classified as relevant or irrelevant. Any items for which participants failed to provide an answer in the given time frame were removed from the analysis (see bottom row in Table 3). The results of the AJT (mean accuracy in %) are shown in Table 3, indicating acceptance (i.e. repetition) of DPs in specific contexts and NPs in generic contexts, and rejection (i.e. correction) of NPs in specific contexts and DPs in generic contexts. Overall, participants were better at accepting than in correcting sentences, which may be due to the tendency to accept in cases of insecurity.

In the specific condition, where all three languages — German, French and Italian — require articles, almost all groups show ceiling performance both in accepting (i.e. repeating) grammatical DPs and as well as

Table 2. Overview of test conditions in the AJT.

<table>
<thead>
<tr>
<th>condition</th>
<th>type of noun</th>
<th>no. of items</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>generic bare NP</td>
<td>plural</td>
<td>8</td>
<td>Hast du das auch in der Schule gelernt? Löwen leben in der Savanne.</td>
</tr>
<tr>
<td>generic bare NP</td>
<td>mass</td>
<td>8</td>
<td>Hast du diese Studie gelesen? Sport macht fit.</td>
</tr>
<tr>
<td>generic DP</td>
<td>plural</td>
<td>8</td>
<td>Der Tierverein informiert: Die Katzen brauchen viel Freiheit.</td>
</tr>
<tr>
<td>generic DP</td>
<td>mass</td>
<td>8</td>
<td>Hast du diese Studie gelesen? Die Schokolade macht glücklich.</td>
</tr>
<tr>
<td>specific bare NP</td>
<td>plural</td>
<td>2</td>
<td>Ich wollte lernen, aber Unterlagen sind zuhause.</td>
</tr>
<tr>
<td>specific bare NP</td>
<td>mass</td>
<td>2</td>
<td>Lass uns in ein anderes Geschäft gehen. Kleidung ist mir zu altmodisch.</td>
</tr>
<tr>
<td>specific DP</td>
<td>plural</td>
<td>2</td>
<td>Ich wollte lernen, aber die Bücher sind zuhause.</td>
</tr>
<tr>
<td>specific DP</td>
<td>mass</td>
<td>2</td>
<td>Lass uns in ein anderes Geschäft gehen. Der Schmuck ist mir zu teuer.</td>
</tr>
</tbody>
</table>
Table 3. AJT Results.

<table>
<thead>
<tr>
<th>Country during childhood</th>
<th>Ge.-Fr. 2L1s</th>
<th>Ge.-It. 2L1s</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Germany (n = 12)</td>
<td>France (n = 10)</td>
</tr>
<tr>
<td>Acceptance/repetition of DPs specific context</td>
<td>100% (48/48)</td>
<td>98% (39/40)</td>
</tr>
<tr>
<td>Rejection/correction of NPs in specific context</td>
<td>100% (48/48)</td>
<td>97% (38/39)</td>
</tr>
<tr>
<td>Acceptance/repetition of NPs generic context</td>
<td>100% (192/192)</td>
<td>100% (158/158)</td>
</tr>
<tr>
<td>Rejection/correction of DPs in generic context</td>
<td>90% (170/190)</td>
<td>63% (100/159)</td>
</tr>
<tr>
<td>Excluded</td>
<td>0.4% (2/480)</td>
<td>1% (4/400)</td>
</tr>
</tbody>
</table>
correcting ungrammatical NPs. A non-parametric Kruskal-Wallis test indicated that there were no significant differences between the four groups in the acceptance of grammatical DPs in specific contexts ($H(3) = 3.10, p > .1$). By contrast, in the correction of bare NPs in specific contexts the non-parametric Mann-Whitney test showed that 2L1s who were born in Italy performed significantly less target-like than all other groups: the German-French 2L1s who were born in Germany ($U = 24.00$, $p < .01$), the 2L1s who were born in France ($U = 22.50$, $p < .05$), and the German-Italian 2L1s who were born in Germany ($U = 22.00$, $p < .05$).

The 2L1s who were born in Italy corrected bare NPs in specific sentences only 73% of the time, although articles would also be required in the corresponding Italian sentences. It should be noted, though, that failure to correct can mostly be attributed to two speakers. These two had used German less frequently than all other participants, and we suspect that they may have had difficulties understanding the sentences (percentage excluding these speakers: 91%).

In the generic condition, all groups accepted bare NPs 99–100% of the time. Statistically, the four groups do not differ significantly from each other (Kruskal-Wallis test, $H(3) = 4.13, p > .1$). By contrast, there are differences in the correction of DPs to NPs (see Figure 1). All groups but the 2L1s born in Italy showed a relatively strong tendency to correct them. The Mann-Whitney test reveals that the two bilingual groups who were born in Germany differ significantly from their 2L1 counterparts.

![Figure 1. Corrections of DPs to NPs in generic contexts (%).](image-url)

12 These two speakers also performed poorly in all other conditions, including the cloze test.
who grew up in France \( (U = 24.50, \ p < .05) \) and Italy \( (U = 20.00, \ p < .05) \), respectively. In other words, in generic contexts, 2L1s who did not grow up in Germany accepted DPs with definite articles significantly more often than 2L1s who grew up in Germany. The difference between the two 2L1 groups who grew up in Germany is also statistically significant \( (U = 31.00, \ p < .05) \), with the German-French group rejecting and correcting generic DPs significantly more often than the German-Italian group. By contrast, a comparison between the 2L1s who grew up in France and those who grew up in Italy did not yield a significant contrast \( (U = 21.50, \ p > .05) \), despite clearly visible differences in the percentage of corrections. The most pronounced contrast exists between German-French 2L1s who grew up in Germany and the 2L1s who grew up in Italy \( (U = 5.00, \ p < .01) \). There is no significant contrast between the German-French 2L1s who grew up in France (but lived in Germany at the time of testing) and the German-Italian 2L1s who grew up in Germany \( (U = 50.50, \ p > .05) \).

The test condition in which participants had to correct definite DPs in generic contexts is comparable to context (8b) from Barton et al.’s (in prep.) study with German monolinguals. Recall that with individual-level predicates monolingual speakers in Hamburg corrected DPs to bare NPs 52% of the time, i.e. more often than the 2L1s who were born in Italy, but less often than the three other bilingual groups.

4.3. Truth Value Judgment Task (TVJT)

Test items

The truth value judgment task was modelled loosely after similar tasks by Gelman & Raman (2003) and Pérez-Leroux et al. (2004). Twelve coloured pictures were designed, each showing three objects or characters of one kind, each with two anomalies. Providing two anomalies allowed us to refer to each picture twice, targeting the same referent in the subject noun phrase, without referring twice to the same property. Anomalies included e.g. blue sunflowers growing in the desert or flying monkeys eating ice-cream. Each picture was accompanied by three statements, which resulted in a total of 36 statements. An example is provided in Figure 2.

The 36 statements can be subdivided into three conditions, all balanced for truth value: half of the statements were true with respect to the picture but false with respect to real-world facts, with the opposite being the case for the other half of the statements. All sentences were grammatical and, like in the AJT, constructed with individual-level predicates. The sentences were not contextualized, as we wanted to know how our subjects would interpret NPs and DPs in the absence of

\[13\]

The distinction between plural and mass nouns was less crucial than originally expected, which is why we do not discuss it.
semantic or contextual cues. Unlike in the AJT, no mass nouns were included. Participants were asked to judge the statements as true or false. There was no time limit, but they were asked to answer quickly and spontaneously.

The first condition contained statements with DPs (n = 12). Recall that these yield a specific reading in Standard German, while they can have a specific or a generic reading in the Romance languages and in some spoken varieties of German. The assigned truth value served to identify the semantic status of the DP.

(18) Picture with kangaroos having no tails.

Die Kängurus haben Schwänze. (T = generic, F = specific)

The response "true" to a statement about canonical properties of the kind (e.g., kangaroos having tails) indicates a generic interpretation of the subject DP, while the response "false" indicates a specific interpretation. Conversely, the response "true" to a statement about the atypical (i.e. noncanonical) properties of the kind (e.g., fish having feet), as in Figure 2, points to a specific reading, while the response "false" indicates the acceptance of a generic interpretation.

Importantly, this condition indicates a "preference" for one of two possible readings of definite DPs in German. We expected that under the influence of the Romance languages, speakers should be more inclined to accept generic readings.

The second condition contained statements with bare NPs (n = 12). Recall that bare NPs can only have a generic reading in German and do
not exist in the Romance languages (with the aforementioned exceptions). Again, the assigned truth value served to identify the semantic status of the NP (although specific readings are unexpected here).

(19) Picture with blue sunflowers growing in the desert.

Sonnenblumen sind gelb. (T=generic, F=specific)

Again, the response “true” to a statement about canonical properties of the kind (e.g., sunflowers being yellow) indicates a generic interpretation of the subject DP, while the response “false” indicates a specific interpretation. Conversely, the response “true” to a statement about the atypical (i.e. noncanonical) properties of the kind (e.g., sunflowers growing in the desert) indicates a specific reading, while the response “false” indicates the acceptance of a generic interpretation.

The third condition consisted of control sentences in the singular (n = 12). These were different depending on whether the correct truth-value could be determined with the help of the picture (20a), or whether it required world knowledge (20b).

(20) a. Picture of flying monkeys (the rightmost one blue-eyed), singular control

Der rechte Affe hat blau Augen. (T and specific)

the right monkey has blue eyes

b. Picture with sunflowers

Die Sonnenblume dient zur Herstellung von Butter. (F and generic)

the sunflower serves to the production of butter

These items controlled whether participants paid attention to the meaning of the sentences, while increasing their awareness that statements in this test could in principle be interpreted with respect to the picture or with respect to the world in general.

The singular controls always appeared between the other two statements, while statements containing DPs and NPs alternated between the first and last position (for a more detailed test description, see Barton in prep., Kupisch 2012).

Procedure

The stimuli were presented in PowerPoint. Participants knew that they would see a series of pictures, each with three statements that they could hear and read and had to judge as true or false. They were explicitly told that the statements may be related to the pictures or not, and that they had to listen to and read all three statements before judging them. They were also told that at least one but maximally two statements were true.
The subjects saw each picture only once and were not allowed to go back to see previous pictures. There were two semi-randomized test versions.

**Results**

Responses were counted as specific interpretations if they were congruous with the picture, and as generic interpretations if they were not. If the participant changed her mind, we counted the final judgment. Table 4 summarizes the results. (Due to space limitations we will not report the data of the control sentences here.)

As for the first condition, definite DPs were predominantly interpreted with specific reference. Acceptance of generic readings for DPs in the four 2L1 groups is surprisingly low given the postulated variation in German. The two groups of 2L1s born in Germany were the least inclined to interpret DPs as generic (6 and 11%). According to the non-parametric Mann-Whitney test, there are no statistically significant differences between the two groups of 2L1s who grew up in Germany ($U = 39.50, p > .1$), between the two German-French groups ($U = 26.00, p > .1$), between the two German-Italian groups ($U = 27.00, p > .1$), and between the 2L1s born in Italy and those born in France ($U = 35.00, p > .1$). The only significant difference among the 2L1 groups exists between the German-French 2L1s born in Germany and the German-Italian 2L1s born in Italy ($U = 14.50, p < .05$). The L1 monolingual German speakers differed significantly from the 2L1s who were born in Germany, i.e. the German-French 2L1s ($U = 13.50, p < .01$) and the German-Italian 2L1s ($U = 21.50, p < .05$). By contrast, comparison between L1 monolingual German speakers and the 2L1s who were not born in Germany was not significant, neither for the German-French group ($U = 34.00, p > .1$) nor for the German-Italian group ($U = 31.50, p > .1$). Figure 3 compares the interpretation of DPs as specific across groups.

As for the second condition, bare NPs were predominantly interpreted as generic. Nevertheless, all groups showed a small amount of unexpected specific interpretations. This is especially surprising for the German-French 2L1s born in Germany (23% of specific interpretations), as they showed the most normative behaviour in all other conditions. However, the results look cleaner if two subjects are excluded who may have had problems with the task, almost consistently giving interpretations that were congruous with the pictures. A recalculation of percentages excluding these two speakers lowers the percentage of specific interpretations to 6%. Since all groups interpreted some bare NPs as specific — independently of their proficiency in German — we suspect that we created a task effect by presenting a prominent picture but no linguistic context cueing for genericity. According to Table 4, the 2L1 speakers who grew up in Italy were most inclined to interpret bare NPs as specific. Although the Mann-Whitney test shows no significant
Table 4. TVJT Results.

<table>
<thead>
<tr>
<th>Country during childhood</th>
<th>Ge.-Fr. 2L1s</th>
<th>Ge.-It. 2L1s</th>
<th>Ge. L1s</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPs interpreted as specific (N = 12)</td>
<td>94% (102/108)</td>
<td>75% (81/108)</td>
<td>89% (118/132)</td>
<td>77% (74/96)</td>
</tr>
<tr>
<td>NPs interpreted as generic (N = 12)</td>
<td>77% (83/108)</td>
<td>84% (91/108)</td>
<td>85% (112/132)</td>
<td>66% (66/96)</td>
</tr>
</tbody>
</table>

1Four of the German-French 2L1s did not take the TVJT, which explains the lower number of 2L1s in this test.
differences between this group and the other three 2L1 groups, this group
is the only one performing significantly different from the monolingual
L1 German speakers ($U = 12.00, p < .01$).

Table 5 summarizes the results of the statistics (AJT and TVJT) which
are relevant to the questions we raised in the beginning, indicating for
each contrast whether the difference was significant ($\checkmark$) or not (−)
(GF = German-French, GI = German-Italian).

5. Discussion and conclusions

The following questions were raised at the beginning of the paper:

(i) What is the end-state grammar in acquisition of a phenomenon
that differs in the two languages of a bilingual speaker and shows
additional variation in the target language (here: German)?

(ii) How does the bilingual end-state grammar differ from that of a
monolingual speaker?

(iii) What difference does it make whether German was the dominant
language of the linguistic community when the languages were
acquired?

(iv) What is the role of variation in the contact language (here: Italian
or French)?

As for the nature of the bilingual end-state grammar with respect to
generic nominals, four theoretical options were outlined: a conservative
grammar, a motivated variation grammar, a mixed grammar and an
unmotivated variation grammar. Based on our results we can safely
exclude that any of our participants ended up with an unmotivated variation grammar, if we accept that bare NPs in the TVJT might have been interpreted as specific due to task effects. In fact, all 2L1 groups showed clearly distinct interpretation preferences for bare NPs and DPs in the TVJT, and in the AJT they corrected bare NPs in specific contexts while accepting them in generic contexts. We can further safely exclude that our subjects ended up with mixed grammars, i.e. integrating into their German grammar an option that is obligatory in Romance. If this had been the case, they would have rejected bare NPs in both generic and specific contexts. However, they accepted them only in generic contexts, in keeping with Standard German.

It is somewhat harder to tease apart the other two end-state options. To recall, the conservative speaker would reject generic DPs across the board, as required in written Standard German. Moreover, he would interpret DPs consistently as specific. Obviously, this was not the case for any of the groups. Therefore, among the four options we proposed, the motivated variation grammar seems to characterize the 2L1s’ end-state grammar most adequately.

Nevertheless, bilinguals were less likely than monolinguals to accept generic DPs and interpret them as generic, which leads us to question (ii), i.e. how their grammars differ from those of monolingual speakers. If we picture the extent to which participants accepted generic DPs (with a

<table>
<thead>
<tr>
<th>Type of comparison</th>
<th>Groups compared</th>
<th>Specific reading of DP (TVJT)</th>
<th>Correction of generic DP (AJT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monolingual vs. bilingual</td>
<td>Monolingual vs. 2L1GF (France)</td>
<td>√</td>
<td>no comparison made</td>
</tr>
<tr>
<td></td>
<td>Monolingual vs. 2L1GI (Italy)</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Monolingual vs. 2L1GF (Germany)</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Monolingual vs. 2L1GI (Germany)</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Weaker vs. stronger language</td>
<td>2L1GF (Germany) vs. 2L1GF (France)</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2L1GI (Germany) vs. 2L1GF (Italy)</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>French vs. Italian</td>
<td>2L1GF (France) vs. 2L1GI (Italy)</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2L1GF vs. 2L1GI in Germany</td>
<td>√</td>
<td></td>
</tr>
</tbody>
</table>

Table 5. Group comparisons and significance.
definite article) on a continuum, and if we set 52\% as a benchmark for 
motivated variation — the result obtained for monolinguals in Hamburg 
(Barton et al. in prep.) then all bilingual groups except for those who 
were born in Italy are more conservative than monolinguals, with 
acceptance rates of 10\%, 34\% and 37\%. Similarly, if we set a 34\% rate as 
a benchmark for DPs to be interpreted as generic (in the absence of 
contextual cues), then all 2L1s are more conservative than the monol-
inguals, at least in this study, as they interpreted 25\%, 23\% 11\% and 6\% 
of the DPs as generic (even though not all the contrasts are statistically 
significant). What seems to be going on here is some kind of cross-
linguistic “overcorrection”, rather than cross-linguistic influence, espe-
sially in the case of the bilinguals who grew up in Germany.

Given these findings, we can also address the question whether our 
participants’ grammars should be considered “incomplete” or “deviant”. 
Above, we followed Sorace (1993) in defining the former as a *grammar that 
lacks a given property* P, leading to random, indeterminate judgments 
about P, and the latter as an *alternative representation of P*, leading to 
judgments that are consistently different from native judgments. Our 
results show no random behavior in any group. On the other hand, the 2L1 
speakers do not exactly mirror the variation found in monolingual German 
speakers. However, in *not* doing so, they tend to be more conservative than 
monolinguals, i.e. closer to the written standard, allowing for less 
variation.

As for the role of the community language when the languages were 
acquired (question iii), results show that 2L1s who grew up in Germany 
rejected DPs in generic contexts more often than 2L1s who grew up in 
France or Italy, and they were also less inclined to interpret DPs as 
generic. Even though the comparison was only significant in the AJT, this 
may be taken to suggest that the number of occasions to hear and speak 
German, as well as the number of different German speakers they 
interact with, determined how readily our participants accepted generic 
DPs. The absence of a significant effect between the 2L1s who grew up in 
France (but were resident in Germany) and the German-Italian 2L1s who 
grew up in Germany (and continued to live there) can be explained under 
the assumption that frequency of exposure to German can still play a role 
in adulthood, at least for the phenomenon investigated here.

The question arises why monolinguals, despite having the highest 
amount of German input, were the most inclined to accept generic DPs. 
A possible answer is that bilinguals have higher meta-linguistic awareness 
than monolingual speakers, as has been frequently suggested in the 
literature (see Jessner 2006 for an overview of relevant research).

Finally, we asked how relevant the properties of the contact language 
are (question iv). Recall that, generally, both French and Italian require 
definite articles with generic plural and mass subject nominals. Therefore, 
cross-linguistic influence from the two languages may be considered to 
have the same effect, namely overacceptance of generic DPs in German.
However, we also pointed out that Italian allows bare NPs more readily than French. Therefore, if the instance of bare NPs in the contact language had an effect on the 2L1s’ performance in German, German-Italian 2L1s should have shown the strongest preference for bare NPs, contrary to fact. So, at least in this study, the general absence of bare NPs in French does not appear to have influenced the results. Hence, measuring the degree of overlap between two languages is insufficient to predict cross-linguistic influence (or its absence).

More generally, our study demonstrates that under extreme learning conditions, i.e. with partially overlapping target grammars and variation within each of them, simultaneous bilinguals are sensitive to subtle distributional differences — even more than monolinguals. Future research should examine the role of explicit, instructed knowledge of the target phenomenon and the possible impact of foreign languages (especially English). Finally, since it is possible that deviations from written Standard German occurred because our tests were mostly spoken, it is also desirable to systematically compare performance in spoken and written tasks.

References


BARTON, D., KOLB, N. & KUPISCH, T. In prep. Generic noun phrases in German varieties. Ms., University of Hamburg and University of Cologne.


Appendix. List of experimental items in the AJT

2. Viele Leute wissen es gar nicht, aber Kokosnüsse wachsen auf Palmen.
4. Die Umfrage hat zwar das Gegenteil ergeben, aber Frauen können besser kochen.
7. Der Tierverein informiert: Hunde brauchen viel Auslauf.
10. Der Museumslehrer merkt an: Kupfer eignet sich zur Herstellung von Waffen.
11. Übergewichtige müssen aufpassen, denn Käse besteht zum Großteil aus Fett.
15. Ein guter Koch weiß: Salz macht jede Suppe würziger.
17. Tierfreunde wissen: Die Pferde sind Herdentiere.
18. Viele Leute wissen es gar nicht, aber die Kartoffeln wachsen in der Erde.
19. In der Apothekenzeitschrift steht: Die Orangen enthalten viel Vitamin C.
20. Die Umfrage hat zwar das Gegenteil ergeben, aber die Männer können besser Auto fahren.
23. Der Tierverein informiert: Die Katzen brauchen viel Freiheit.
25. In diesem Buch steht: Der Kaffee hat eine aufmunternde Wirkung.
27. Übergewichtige müssen aufpassen, denn die Butter besteht zum Großteil aus Fett.
30. Ich habe einen guten Tipp bekommen: Das Chlor entfernt Flecken in der Wäsche.
31. Ein guter Koch weiß: Der Pfeffer macht jeden Auflauf würziger.
32. Meine Eltern sagen, das Geld ist nicht alles im Leben.
33. Ich gehe erst morgen zum Arzt, denn Sprechzeiten haben sich geändert.
34. Ich wollte lernen, aber Unterlagen sind zuhause.
35. Lass uns in ein anderes Geschäft gehen, Kleidung ist mir zu altmodisch.
37. Ich fliege erst morgen nach New York, denn die Flugzeiten haben sich geändert.
38. Ich wollte lernen, aber die Bücher sind zuhause.