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# L2 acquisition of English article choice by Dutch native speakers

## Cross-linguistic influence?

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Some languages base their article choice on specificity (Samoan), others on definiteness (English: *a* vs. *the*). As for L2 article acquisition, Ionin, Zubizarreta, and Maldonado (2008) argue that definiteness-based article choice in the L1 (Spanish) enhances article-acquisition in a definiteness-based L2 (English). However, Deprez, Sleeman, and Guella (2008) show that Dutch learners of L2-French (both definiteness-based) perform poorly on French article choice, suggesting reliance on specificity, and refuting positive L1 influence.

The current study is a pilot investigation into L2-English article choice in 104 native Dutch speakers. The results show definite and indefinite article overuse in the primary, but not in the elementary-intermediate-proficiency groups. We propose that lexical-semantic proficiency is a necessary condition for cross-linguistic influence to be visible.

**Keywords:** article choice, definiteness, Article Choice Parameter, L2, cross-linguistic influence, proficiency

### 1. Introduction

Many well-studied languages, such as English, distinguish between definite and indefinite articles, as illustrated in (1):

- |        |   |                      |
|--------|---|----------------------|
| (1) a. | I haven't read <b>a</b> book for weeks.               | indefinite –specific |
| b.     | This is a story about <b>a</b> girl.                  | indefinite +specific |
| c.     | <b>The</b> girl lived in a big castle.                | definite +specific   |
| d.     | I want to talk to <b>the</b> director, whoever it is. | definite –specific   |

As (1) shows, the indefinite article *a* can be specific, referring to a particular entity existing in the speaker's mind (1b), or non-specific (no particular referent in the

speaker's mind), as in (1a). The same applies to definite articles: *the* in (1c) is specific, while *the* in (1d) is non-specific. This shows that English chooses its article form based on definiteness, rather than on specificity.

In contrast, Samoan is a language that organizes its article system according to specificity. According to Mosel and Hovdhaugen (1992), Samoan uses one article (*le*) for +specific nouns, referring to a particular entity in the speaker's mind, and another article (*se*) for –specific nouns not referring to a particular entity in the speaker's mind, regardless of definiteness (reference to an entity that is unique to both the speaker and the hearer).

Thus, languages with overt articles differ as to whether they base their article choice on definiteness or on specificity. A question that arises for L2 acquisition is whether the L1's article system influences the acquisition of the L2 article system. Several studies have been conducted to answer this question, but with mixed results. For example, Ionin and colleagues argue that there is positive cross-linguistic influence from L1 to L2 when article choice is based on definiteness in both languages (Transfer Hypothesis): Spanish learners of L2 English perform virtually error-free on an English article choice test (Ionin, Zubizarreta & Maldonado, 2008). In contrast, Deprez, Sleeman, and Guella (2011) show that Dutch learners of L2 French (both definiteness-based languages) sometimes erroneously use the indefinite article in –specific contexts, and the definite article in +specific contexts, suggesting that they sometimes base their article choice on specificity in French. This reliance on specificity is explained by “computational ego-centricity”, stating that L2 learners resort to just speaker-knowledge when the computational processing load becomes too high (Deprez et al., 2011, p. 8). Similar claims have been made by Sorace (2011, 2016) who proposes the Interface Hypothesis, stating that grammatical operations at the interface of an internal component of the grammar (phonology, syntax, semantics), and an external component, such as pragmatics or discourse information, are difficult for the L2 learner, even at very advanced levels. The rationale behind this hypothesis is that L2 speakers deal with a higher cognitive load, which makes it more difficult for them to consistently take the hearer's perspective into account.

To shed more light on the issue of cross-linguistic influence in L2 article acquisition, this study investigates article choice in L2 English by adolescent L1-speakers of Dutch, both languages with definiteness-based article systems. The Transfer Hypothesis predicts few errors regarding English article choice by Dutch L1-speakers, while the Computational Egocentricity Hypothesis predicts that the Dutch learners of L2-English will overuse *the* in indefinite +specific contexts, and overuse *a* in definite –specific contexts. Since many L2 studies (including Ionin et al., 2008 and Deprez et al., 2011) show increased performance on particular linguistic constructions at higher general proficiency levels, proficiency is also measured in this group.

In the next section we provide some theoretical and L2-acquisition background on article choice, followed by hypotheses and predictions regarding article choice in Dutch learners of L2-English. Section 3 presents details with regard to participants and a written article choice elicitation task. Section 4 contains the results, showing that primary-proficiency speakers make substantial amounts of article-choice errors in all conditions, while elementary-intermediate-proficiency speakers perform target-like on article choice. This is further discussed in Section 5, in relation to the research questions, hypotheses and predictions. The study is concluded in Section 6.

## 2. Background

### 2.1 Article choice

As illustrated in Section 1, languages with overt articles differ as to whether they base their article choice on definiteness or on specificity. Schaeffer and Matthewson (2005) define articles as functional items correlated to argumenthood and which are neither quantifiers nor determiners. Heim (1991) argues that article forms are mapped to two meanings: *definiteness* and *specificity*. Ionin, Ko, & Wexler (2004, p. 5) define definiteness and specificity as follows:

If a Determiner Phrase (DP) of the form [D NP] is:

- A. +definite, then the speaker and hearer presuppose the existence of a unique individual in the set denoted by the NP.
- B. +specific, then the speaker intends to refer to a unique individual in the set denoted by the NP and considers this individual to possess some noteworthy property.

This definition illustrates that articles are discourse-related, where definiteness is based on common ground between speaker and hearer, while specificity depends on speaker knowledge only. English, Dutch, French, Spanish and many other languages can be classified as having an article system based on the semantic notion of definiteness, while languages such as Samoan or Salish base their article choice on specificity (Mosel & Hovdhaugen, 1992; Matthewson, 1998; Schaeffer & Matthewson, 2005).

This distinction has been formalized in a parameter, initially called the Common Ground Parameter (Matthewson, 1998), and later rephrased as the Parameter of Article Semantics (Schaeffer & Matthewson, 2005), and the Article Choice Parameter (Ionin et al., 2004). The Article Choice Parameter (ACP) states that speakers of a language base their article choice on one of two settings: 1. definiteness

(common ground), or 2. specificity (speaker beliefs). Learners of a language need to decide which of the two settings is correct for their language. For L2 acquisition, the question is whether the ACP setting of the L1 influences the setting of the ACP in the L2. This question has been investigated by several researchers. The two main studies are discussed in the following section. The reason for concentrating on these two studies is because they are the only two studies attempting to answer the same question as the current study, using the same methodology, but reporting contradicting results.

## 2.2 Previous L2 acquisition studies on Article Choice

Ionin et al. (2008) tested 24 Spanish university students learning L2 English on article choice. Participants were asked to complete a written elicitation task inspired by Ionin et al. (2004), testing four article conditions (+/-definiteness, +/-specificity), in which they could choose between *the*, *a* and a blank. Participants also had the option to fill out the blanks with any item they considered suitable. A Rutherford cloze test (Butler, 1980) was administered to establish the L2 learners' proficiency in English. A control group of 6 native English speakers reached ceiling accuracy on the Article Elicitation task.

Similar to English, Spanish is a language in which articles are categorized according to definiteness. The Spanish learners of English were expected to perform in line with the Transfer Hypothesis, stating that L2 learners transfer the ACP setting of their L1 to their L2. Spanish L1 speakers, who have an ACP set to definiteness, are thus predicted to perform target-like on English article choice as the ACP is set to definiteness in both English and Spanish. Ionin et al.'s (2008) results show that the Transfer Hypothesis is supported: the Spanish learners perform near target-like on English article choice, as schematized in Table 1.

Ionin et al. (2008) report Spanish learners not to differ significantly from the native control group. Since subjects had the option to supplement the blanks with any item they thought fitting, errors were mainly due to participants choosing items other than articles, such as possessive pronouns. Furthermore, proficiency scores show that Spanish participants improve even further on English article choice when their proficiency increases.

Results supporting the Transfer Hypothesis can also be found in studies by Snape, Leung, & Ting (2006), Ting (2005) and Reid, Battaglia, Schuldt, Narita, Mochizuki, & Snape (2006), in which Spanish learners of English perform target-like on article choice. Hawkins, Al-Eid, Almahboob, Athanasopoulos, Chaengchenkit, Itu et al. (2006) find support for the Transfer Hypothesis in the L2 English article choice of L1 Greek learners.

**Table 1.** Performance on L2 English Article Choice by L1 Spanish learners (Ionin et al. 2008)

|           | +definite                 | -definite                   |
|-----------|---------------------------|-----------------------------|
| +specific | Correct use of <i>the</i> | Correct use of <i>a</i>     |
|           | 87.5%                     | 92.5%                       |
|           | Incorrect use of <i>a</i> | Incorrect use of <i>the</i> |
|           | 0.8%                      | 1.7%                        |
|           | Omission                  | Omission                    |
|           | 8.3%                      | 0%                          |
|           | Other                     | Other                       |
|           | 2.5%                      | 5.0%                        |
| -specific | Correct use of <i>the</i> | Correct use of <i>a</i>     |
|           | 96.7%                     | 91.7%                       |
|           | Incorrect use of <i>a</i> | Incorrect use of <i>the</i> |
|           | 0.8%                      | 4.1%                        |
|           | Omission                  | Omission                    |
|           | 1.7%                      | 0.8%                        |
|           | Other                     | Other                       |
|           | 0.8%                      | 3.3%                        |

However, a study by Deprez, Sleeman, & Guella (2011) shows quite different results. Deprez et al. (2011) conducted an experiment similar to that of Ionin et al. (2004, 2008) with adolescents learning L2 French in school. Like English, French has an article system based on definiteness. Two groups with L1s whose ACP is set for definiteness took part in the experiment: 50 L1 speakers of Arabic, which has the definite article *él* and indefinite suffix *-n* and 23 L1 speakers of Dutch, which has two definite articles, *de* and *het* and an indefinite article *een*. Participants in the Dutch group were aged 13–15 years and had had 200 hours of French in school. Participants in the Arabic group were divided according to age and amount of input, resulting in a group of thirty 10-year-olds who had had 64 hours of French and a group of twenty 12-year-olds who had had 280 hours of French in school. However, no independent proficiency test was administered. The article elicitation task used was based on Ionin et al.'s (2004) elicitation task. Participants were instructed to complement the blanks in twelve dialogues (three tokens per condition) with either a definite or indefinite article or a blank. There were no filler items.

The elicitation test results show high proportions of overuse of the definite article in –definite, +specific contexts and of the indefinite article in +definite, –specific contexts for both Dutch and Arabic participants, as shown in Tables 2, 3 and 4.

**Table 2.** Results L1 Dutch Learners on L2 French Article Choice ( $N = 23$ ) (Deprez et al., 2011)

|           | +definite                             | -definite                                   |
|-----------|---------------------------------------|---|
| +specific | Correct use of <i>le/la</i><br>87%    | Correct use of <i>un/une</i><br>32%         |
|           | Incorrect use of <i>un/une</i><br>13% | Incorrect use of <i>le/la</i><br><b>68%</b> |
| -specific | Correct use of <i>le/la</i><br>55%    | Correct use of <i>un/une</i><br>77%         |
|           | Incorrect use of <i>un/une</i><br>45% | Incorrect use of <i>le/la</i><br>23%        |

**Table 3.** Results L1 10-year-old Arabic learners on L2 French Article Choice ( $N = 30$ ) (Deprez et al., 2011)

|           | +definite                             | -definite                                   |
|-----------|---------------------------------------|---|
| +specific | Correct use of <i>le/la</i><br>78%    | Correct use of <i>un/une</i><br>64%         |
|           | Incorrect use of <i>un/une</i><br>22% | Incorrect use of <i>le/la</i><br><b>36%</b> |
| -specific | Correct use of <i>le/la</i><br>24%    | Correct use of <i>un/une</i><br>73%         |
|           | Incorrect use of <i>un/une</i><br>76% | Incorrect use of <i>le/la</i><br>27%        |

**Table 4.** Results L1 12-year-old Arabic Learners on L2 French Article choice ( $N = 20$ ) (Deprez et al., 2011)

|           | +definite                             | -definite                            |
|-----------|---------------------------------------|--------------------------------------|
| +specific | Correct use of <i>le/la</i><br>80%    | Correct use of <i>un/une</i><br>75%  |
|           | Incorrect use of <i>un/une</i><br>20% | Incorrect use of <i>le/la</i><br>25% |
| -specific | Correct use of <i>le/la</i><br>57%    | Correct use of <i>un/une</i><br>90%  |
|           | Incorrect use of <i>un/une</i><br>43% | Incorrect use of <i>le/la</i><br>10% |

As the last two tables indicate, the older L1 Arabic group shows less overuse of the definite and indefinite article, suggesting that as L2 input increases, performance on L2 article choice increases, in line with results in Ionin et al. (2008).

Deprez et al.'s (2011) results suggest fluctuation between the definiteness and specificity settings of the ACP even if the first language has an overt article system based on definiteness (such as Dutch and Arabic). Thus, these results are not in line with the Transfer Hypothesis, which predicts that the ACP setting of the L1 transfers to the L2. Deprez et al. (2011) offer an explanation for the observed pattern by proposing that overuse of definite articles in +specific contexts and overuse of indefinite articles in –specific contexts in a situation in which both L1 and L2 have a definiteness ACP setting are caused by so-called ‘computational egocentricity’.

As described in Section 1, Ionin et al. (2004) define definiteness as a presupposition of the existence of a unique individual in the set denoted by the NP by both the speaker and the hearer. In contrast, specificity denotes such a presupposition by the speaker only. In terms of pragmatics, these definitions entail that definiteness concerns a frame shared by speaker and hearer (‘common ground’), whereas specificity relates to an egocentric frame, namely that of the speaker. Deprez et al. (2011) argue that, due to the increased cognitive pressure of learning an L2, learners sometimes resort to an egocentric view of the world and are led by specificity as representing their own minds, rather than definiteness as representing the common ground of both speaker and hearer. Applying this to Deprez et al.'s (2011) L2 learners of French, Dutch and Arabic-speaking adolescents sometimes use the French definite article in specific but not definite contexts, and the indefinite article in definite but not specific contexts. Support for Deprez et al.'s (2011) computational egocentricity account comes from several other studies, as discussed below.

Horton and Keysar (1996) tested L1 English participants in speaker-hearer pairs and in two conditions: one context in which both the speaker and hearer had the same visual knowledge and a second one in which the speaker had privileged visual access over the hearer. In normal circumstances, speakers took the hearer's lack of visual access into account in the second context. However, when computational load increased due to time pressure, speakers did not recognize the hearer's different perspective and used definite articles to introduce objects. Due to failure of considering the hearer's perspective caused by an increased computational load, this behavior supports the claim of computational egocentricity.

Keysar, Barr, Balin, & Brauner (2000) tested L1 English adult participants in a task similar to Horton et al.'s (1996): speakers have visual access to more objects than hearers, something the speakers were made aware of. Eye-tracking results indicate that even when speakers were specifically asked to choose the object visible to the interlocutor, their eyes first strayed to the object only visible to themselves. Keysar et al. (2000) argue that initially not taking the interlocutor's perspective into account requires less mental effort, similar to the computational egocentricity account Horton et al. (1996) give. Both Horton et al.'s (1996) and Keysar et al.'s (2000)

studies provide support for the computational egocentricity account as proposed by Deprez et al. (2011) and can explain why L2 learners of a language with a definiteness ACP setting while their L1's ACP is also set for definiteness still overuse the definite article in indefinite specific contexts and overuse the indefinite article in definite non-specific contexts.

The issue of computational/cognitive overload in L2 speakers has also been addressed more broadly in the work of Sorace, who proposes the Interface Hypothesis, stating that linguistic phenomena at the interface of core/internal components of grammar (e.g., phonology, syntax, semantics) and peripheral/external language components such as pragmatics (requiring the integration of core and peripheral knowledge) are difficult to acquire, even by advanced L2 learners. This is argued to be due to the fact that integration of an internal component and an external component of language requires extra cognitive resources, while general cognitive load is higher when speaking an L2. Examples of phenomena argued to be relevant to the Interface Hypothesis include use of overt vs. null subjects and pronouns in languages like Italian by native English speakers (Sorace, 2011, 2016). Articles, being linguistic elements with grammatical and pragmatic properties and thus requiring operations at the grammar-pragmatic interface are equally likely to be affected by the Interface Hypothesis.

As is clear from the description above, studies of L2 article choice show mixed results. Methodologies also differ, as exemplified by the following: The blanks in Ionin et al.'s (2008) test could be filled out by any lexical item deemed suitable or could be left blank, while in Deprez et al.'s (2011) experiment the choice was limited to either articles or blanks. Furthermore, while Ionin et al. (2004) used 10 items per experimental condition and had 16 filler items, and Ionin et al. (2008) 6 items per condition and 36 filler items, Deprez et al.'s (2011) experiment contained merely three items per condition, and no filler items. Moreover, Ionin et al. (2008) tested only one, relatively high-proficiency group, while Deprez et al.'s (2011) participants were of different proficiency levels (as indicated by the hours of French classes and age), although no independent proficiency test was administered. Thus, none of the studies systematically controls for proficiency, leaving the possibility that proficiency is a variable in the article choice puzzle, too.

Therefore, we decided to conduct a new experimental study on L2 article choice with sufficient numbers of experimental and filler items, controlling for proficiency, and involving a new language pair, namely Dutch-English, both languages with an ACP setting to definiteness. Similar to English, Dutch has an article system based on definiteness. Contrary to English, Dutch makes the distinction between common and neuter nouns, resulting in two definite articles: the +definite, +neuter article *het*, and the +definite, +common article *de*. The indefinite article *een* makes no gender distinction.

In the next section we present our predictions for L2 learners of English by native Dutch-speaking adolescents, following from the two hypotheses discussed so far.

### 2.3 Hypothesis and predictions

Recall that Ionin et al.'s (2008) Transfer Hypothesis states that L1 speakers of a language with a definiteness ACP setting learning an L2 with a definiteness ACP setting transfer this setting from their L1 to their L2. This renders the prediction regarding article choice for Dutch-speaking L2 learners of English in (2):

(2) *Prediction following from Transfer Hypothesis*

Dutch speakers learning L2 English perform target-like on article choice in all four definite/specific contexts. In particular, English article choice by Dutch adolescent learners of English does not significantly differ from English article choice by L1 peers.

In contrast, the Computational Egocentricity Hypothesis as proposed by Deprez et al. (2011) states that, due to the additional computational load of learning a new language, learners initially take an egocentric perspective, resulting in reliance on specificity rather than definiteness for article choice, regardless of the ACP settings of either the L1 or the L2. From this hypothesis the prediction in (3) can be formulated:

(3) *Prediction following from Computational Egocentricity Hypothesis*

Dutch speakers learning L2 English perform non-targetlike in indefinite specific contexts and in definite non-specific contexts. In particular, Dutch adolescent learners of English significantly overuse *the* in –definite, +specific contexts and significantly overuse *a* in +definite, –specific contexts, but NOT in +definite, +specific contexts or –definite, –specific contexts as compared to their L1 peers.

## 3. Methods

### 3.1 Participants

In order to test these predictions, 104 Dutch L1 speakers, varying between the ages of 12–16 (mean age: 14.2) took part in this study. Participants were recruited from a secondary school in the northwest of the Netherlands, where they were learning English in a formal classroom setting. All students were enrolled in a ‘VMBO’

track, with pre-vocational training in the first, second and third grade of a four-year secondary school programme (grades 7, 8 and 9). Six classes participated in the experiments, of which details can be found in Table 5:

**Table 5.** Dutch L1 participants

| Class        | Date of testing | Number of students | Number of males | Number of females | Mean age (years; months) |
|--------------|-----------------|--------------------|-----------------|-------------------|--------------------------|
| 1F           | 08-04-2016      | 21                 | 8               | 13                | 12;7                     |
| 2C           | 08-04-2016      | 14                 | 5               | 9                 | 13;11                    |
| 2A           | 08-04-2016      | 16                 | 8               | 8                 | 13;11                    |
| 3B3          | 09-05-2016      | 16                 | 10              | 6                 | 14;11                    |
| 3B4          | 09-05-2016      | 13                 | 4               | 9                 | 14;8                     |
| 3K1          | 09-05-2016      | 24                 | 13              | 11                | 15;0                     |
| <b>Total</b> |                 | <b>104</b>         | <b>48</b>       | <b>56</b>         | <b>14;01</b>             |

None of the students included in the study were reported to have language disorders (by their teachers or parents). Students differed in their age of onset with regard to English, as not all primary schools start with teaching English in the same grades. Information regarding these differences was obtained through a questionnaire. From the first grade of secondary school onwards, all students were exposed to the same amount of English in school. Participants were also checked for their exposure to English outside of the classroom. For more information, see Section 3.2.1 on the questionnaire.

Besides the target group, the study also includes a control group of 40 native English speaking adolescents aged 14–17. Control group participants were recruited from a secondary school in Kansas, US. Students were reported to come from lower to middle class backgrounds, similar to the Dutch students. Details about the native English speakers are presented in Table 6.

**Table 6.** Native English control group

| Grade | Date of testing | Number of students | Number of males | Number of females | Mean age (years; months) |
|-------|-----------------|--------------------|-----------------|-------------------|--------------------------|
| 9     | 08-04-2016      | 20                 | 11              | 9                 | 15;4                     |
| 10    | 08-04-2016      | 20                 | 8               | 12                |                          |

The control group participated in an online elicitation task, where data was collected via the survey programme SurveyMonkey.

## 3.2 Experiment

Participants took part in a test composed of three parts: an Article Choice Elicitation task, an Anglia Placement Proficiency test and a Questionnaire regarding language background and exposure. The control group participated only in the Article Choice Elicitation Task. The following sections describe the questionnaire and the two tasks.

### 3.2.1 *Questionnaire*

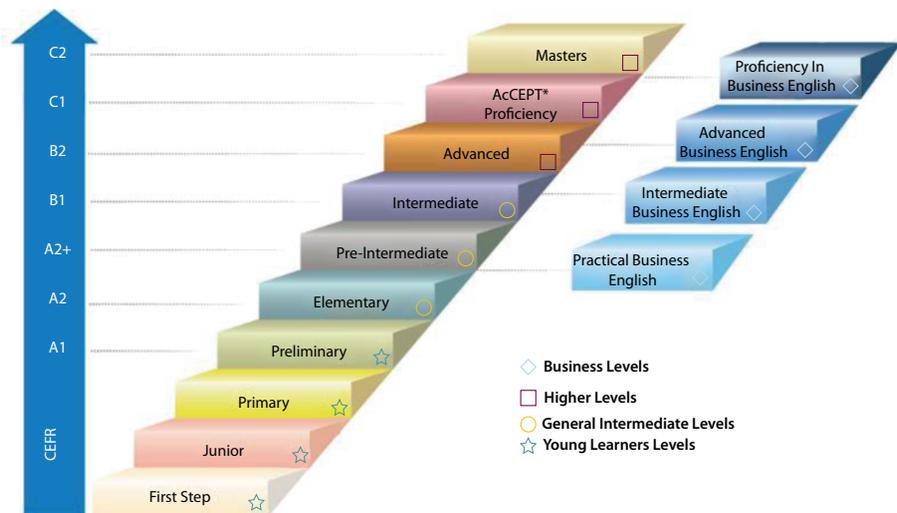
As mentioned in the participant section, not all Dutch students in secondary school have the same background regarding English language exposure. In addition to formal exposure, exposure to English outside the classroom can vary from student to student. To obtain insight in these factors, students were asked to fill out a questionnaire. This questionnaire required subjects to list information regarding language exposure: subjects were asked to rate the frequency of exposure to English in particular situations on a five-point Likert scale. In addition, subjects had to list their first language, other languages they spoke and their age of onset and use of English.

### 3.2.2 *Anglia placement test*

Although neither Ionin et al. (2008) nor Deprez et al. (2011) systematically include proficiency as a variable in their studies, their results indicate that as age and/or language proficiency increased, participants' numbers of target-like article choice responses increased as well.

The current study chose not to assume English proficiency from the different grades students were in, as the age of onset and exposure to English varied outside of the classroom. Instead, students were tested on their English proficiency with a standardized English placement test frequently used to test secondary school students, namely the Anglia Placement Test offered by the Anglia Examinations England Network (Anglia/Chichester College, 2015). The test is composed of multiple choice questions where partakers are asked to give the correct words, verb conjugations, synonyms, etc. Test results place the student in one of ten levels, each of which are linked to the Common European Framework of Referencing (CEFR). The CEFR is a European reference tool for assessing foreign language competence and distinguishes 6–7 different levels of language proficiency. These levels are compared to indices of English proficiency by the Anglia Network in Figure 1.

The Anglia Placement Test is composed of 100 questions. Students must receive a certain number of points on each page of questions for the corrector to move on marking the test, since the test increases in difficulty. For instance, when a student receives 10/22 points on page 3, where a minimum of 16/22 points is required for



**Figure 1.** Level of English proficiency according to the Anglia Placement Test  
<http://www.angliannetwork.eu>

the student to move on, points received on following pages do not count. To date, the Anglia Placement Tests have been mainly used by teachers and schools to grade their students, but researchers in the field of L2 acquisition in educational settings have used the test as well to assess language proficiency (Kopeckova, 2011).

### 3.2.3 Article elicitation task

Ionin et al.'s (2008) written Article Elicitation task is composed of multiple short passages containing a blank, for which participants were asked to fill in the missing element. Deprez et al. (2011) used a similar task with participants of similar ages. Nevertheless, our pilot study, which was an abbreviated version of Ionin et al.'s (2008) Article Elicitation task, proved too difficult for our participants, due to the free choice for completing the blanks. Therefore, the present study employs a multiple choice variant, in which students can choose between *a*, *the*, *not*, and a blank. In indefinite contexts, only nouns starting with a consonant are included, so participants only need to use *a* and not have a third article choice variation (*an*). The task contains four experimental conditions, varying in definiteness and specificity, and targeting the definite (*the*) or the indefinite (*a*) article, as illustrated in (5)–(8). Each experimental condition comprised of five items, resulting in a total of 20 experimental items. In addition, there are two filler conditions: six targeting a blank and four targeting negation *not*, as exemplified in (9) and (10). Hence, in total there were 30 items, which were presented in the same randomized order to all participants.

- (5) Condition 1: +definite, +specific

*At a bookstore*

Chris Well, I've bought everything that I wanted. Are you ready to go?

Mike Almost. Can you please wait a few minutes? I want to talk to \_\_\_\_\_ manager of this bookstore – she is a very nice lady, and I always say hi to her.

- (6) Condition 2: +definite, –specific

Mother What are you reading in the newspaper?

Daughter I'm reading a poem about baby lions – I really like it. I would like to write a letter to \_\_\_\_\_ writer of that poem – unfortunately, I have no idea who it is... The poem isn't signed!

- (7) Condition 3: –definite, +specific

*In an airport, in a crowd of people*

Man Excuse me, do you work here?

Security guard Yes. Can I help you?

Man Yes, please. I am trying to find \_\_\_\_\_ red-haired girl; I think that she flew in on Flight 239.

- (8) Condition 4: –definite, –specific

*In a school*

Child It's my birthday next week!

Teacher That's great. Are you going to have a party?

Child Yes! A big party! I am hoping to get \_\_\_\_\_ new dog! I love animals!

- (9) Filler 1: target: blank

*At the bus stop*

Mike Hello, this is my first time seeing you here. When did you start taking the city bus?

Chris I started taking the bus when I started school \_\_\_\_\_ last week.

- (10) Filler 2: target:
- not*

*At the bus station*

Mildred Where is the bus? It was supposed to come five minutes ago!

Station Attendant I'm sorry. The schedule has changed. The bus will \_\_\_\_\_ come today.

### 3.2.4 Procedure

The testing of the participants took place at a VMBO secondary school in the north-west of the Netherlands. Due to the large amount of students, two testing days were needed. Parents were informed of the experiment through a passive consent e-mail, to which no-one replied negatively. The entire test was completed in fifty minutes during the students' regular English classes. The regular English teacher was present

during the testing to keep order and to introduce the researcher. Instructions in Dutch were put on a screen and repeated by the researcher prior to testing, to ensure all students understood the test procedure. Students were allowed to ask questions during the test and they made occasional use of this privilege. After instructions, participants received a booklet in which they started with the Article Choice Elicitation task. Subjects were asked to fill out the blanks with one of four options: *a*, *the*, *-*, *not*. After finishing the Article Elicitation task, students moved onto the Anglia test, in which they were required to circle the correct option. After the Anglia test, students completed the questionnaire.

### 3.3 Coding and statistics

The collected data were coded as follows. Correct article choice was coded with a “1”, substitution errors (eg. *a* instead of *the*) were coded with a “0” and irrelevant responses (eg. *not* instead of an article) were coded with a “2”. Anglia tests were scored numerically and assigned a proficiency level (see 4.2.2). After coding was completed, statistical analyses were carried out by using SPSS.

## 4. Results

In this section we first present the results on the questionnaire, followed by the results on the the Anglia Proficiency test and the Article Elicitation task.

Out of the initial 104 students tested, four students had to be excluded from the data: one student reported her native language to be Polish, two students were distracted during the experimental procedure, and one student scored 0% correct on the fillers, which was interpreted as a lack of task comprehension.

### 4.1 Results questionnaire

As mentioned in the Methods section, students differed in their age of onset with regard to the acquisition of English. Participants had a mean age of onset of 9 years and 8 months, with a standard deviation of 1 year and 11 months. Most subjects started acquiring English between the ages of 9 and 11, but reported that the number of hours of English classes they received at this age (before secondary school) was minimal. Students indicated that they came in contact with English through films, series, internet and games (i.e. subjects indicated that these types of exposure occurred “often”, but usually not through reading books or contact with English

family members (i.e. subjects indicated that these types of exposure occurred “rarely”). Considering the similar answers provided by the subjects, we concluded that the participants in our Dutch group were quite comparable in terms of language background and English input before they started studying English in secondary school. Thus, as little variation occurred here, this information suggests no need for excluding any subjects based on their exposure to English.

#### 4.2 Results Anglia Proficiency task

The overall group results of the Anglia Placement Test reveal a mean score of 29 out of a 100 for the L2 participants, with a standard deviation of 14. Because of the high standard deviation, students were assigned to three different proficiency levels, as shown in Table 7, following the levels of the Anglia Placement Test.

Table 7. Participants per level of proficiency

| Level of proficiency (Anglia) | Number of students | Level of proficiency (current study) | Number of students |
|-------------------------------|--------------------|--------------------------------------|--------------------|
| Primary (13–20)               | 38                 | Primary                              | 38                 |
| Preliminary (21–36)           | 49                 | Preliminary                          | 49                 |
| Elementary (37–46)            | 1                  | Elementary-Intermediate              | 13                 |
| Pre-Intermediate (47–61)      | 5                  |                                      |                    |
| Intermediate (62–71)          | 7                  |                                      |                    |

#### 4.3 Results Article Elicitation task

In this section, we present and discuss the Article Elicitation results for the native speakers and for the primary, preliminary and elementary-intermediate groups of the L2 learners. As a first step, we ran an item analysis to check whether the items were consistent and reliable. Since the internal consistency and reliability was fine (Cronbach’s  $\alpha = .85$ ), no items were excluded from the analyses.

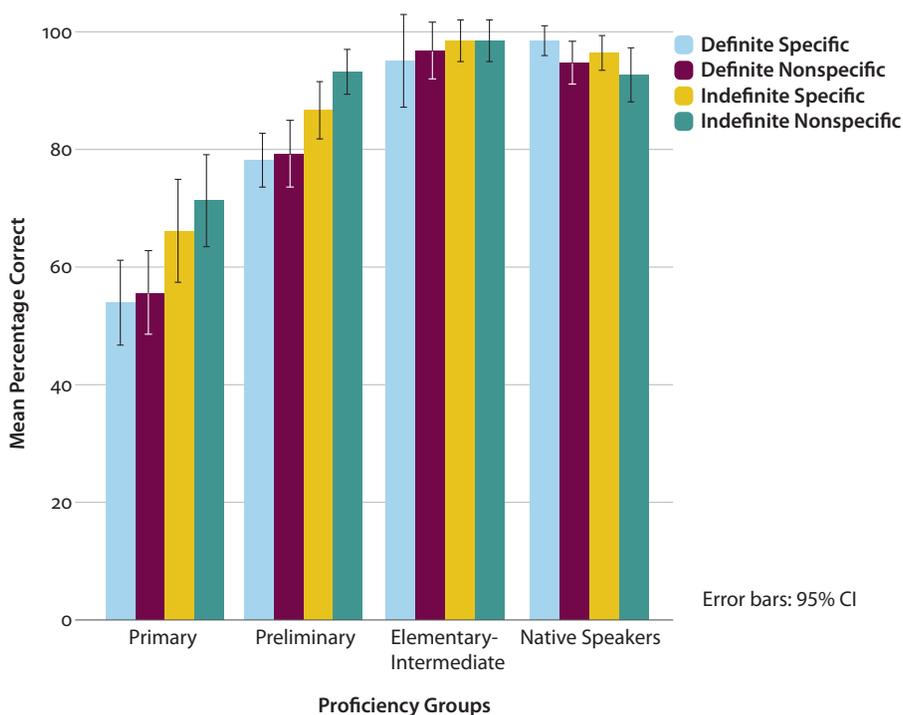
Secondly, the means and standard deviations for the fillers were inspected. Fillers were included in the experiment to ensure that participants paid attention to all of the items. Participants who scored three or more standard deviations lower than the group means on the fillers were excluded from the analyses, because this suggests that participants either were not paying attention or did not understand the task sufficiently. This analysis resulted in the exclusion of three native speakers and one L2 learner, who had been placed in the elementary-intermediate group.

### 4.3.1 Results Article Elicitation task control group

The control group reached ceiling level accuracy, meaning that their mean results clustered around 100% correct, as can be seen in Figure 2 and Table 8. As the native speakers reached ceiling level accuracy on all of the experimental conditions, their data could not be statistically analysed other than presenting the descriptives. These native speaker data are comparable to other native speaker data reported in previous article choice studies (Ionin et al., 2004; Snape et al., 2006; Hawkins et al., 2006; Ionin et al., 2008).

**Table 8.** Results control group Article Elicitation task ( $N = 37$ )

|           | +definite                         | -definite                         |
|-----------|-----------------------------------|-----------------------------------|
| +specific | 98.4% the<br>0% a<br>1.6% other   | 96.2% a<br>3.2% the<br>0.5% other |
| -specific | 94.6% the<br>4.3% a<br>1.1% other | 92.4% a<br>7.0% the<br>0.5% other |



**Figure 2.** Performance on Article Choice in the Four Conditions per Proficiency Group

#### 4.3.2 Results Article Elicitation task primary proficiency group

The performance of the primary-proficiency group was analysed using a repeated measures ANOVA with the within-subject factors Specificity (Specific, Nonspecific) and Definiteness (Definite, Indefinite). Figure 2 shows the performance of the primary-proficiency group on the four experimental conditions.

The repeated measures ANOVA only revealed a main effect of Definiteness ( $F(1, 37) = 11.44, p = .002, \eta^2 = 0.24$ ); Specificity was not found to have a significant effect. Pairwise comparisons showed that the main effect of Definiteness reflected better performance on the indefinites compared to performance on the definites (mean accuracy: 68.4%,  $SE = 3.08$  vs. 54.5%  $SE = 3.49, p = .002$ ).

Table 9 presents the Article Elicitation results for the primary-proficiency group in more detail. As can be seen in the table, participants were more likely to choose an incorrect article rather than opt for *not* or a blank if they made a mistake. More importantly, the table shows that the participants from the primary-proficiency group are more correct on the indefinite conditions than on the definite conditions.

**Table 9.** Results Article Elicitation task primary proficiency group ( $N = 38$ )

|           | +definite   | -definite   |
|-----------|-------------|-------------|
| +specific | 53.7% the   | 65.8% a     |
|           | 31.6% a     | 22.1% the   |
|           | 14.7% other | 12.1% other |
| -specific | 55.3% the   | 71.1% a     |
|           | 29.5% a     | 18.4% the   |
|           | 15.3% other | 10.5% other |

#### 4.3.3 Results Article Elicitation task preliminary-proficiency group

As the preliminary-proficiency group showed a lack of variation on the -definite, -specific condition, no statistical analyses could be carried out. The descriptives presented in Table 10 show that this group has a higher correct score on the indefinite conditions than on the definite conditions. They do not reach ceiling level on the specific conditions and on the +definite, -specific condition, suggesting that they are different from the native speaker control group. This can also be seen in Figure 2.

**Table 10.** Results Article Elicitation task preliminary proficiency group ( $N = 49$ )

|           | +definite  | -definite  |
|-----------|------------|------------|
| +specific | 78.0% the  | 86.5% a    |
|           | 17.6% a    | 9.8% the   |
|           | 4.5% other | 3.7% other |
| -specific | 79.2% the  | 93.1% a    |
|           | 15.5% a    | 6.1% the   |
|           | 5.3% other | 0.8% other |

#### 4.3.4 Results Article Elicitation task elementary-intermediate group

The elementary-intermediate-proficiency group reached ceiling level accuracy, meaning that their mean results clustered around 100% correct, as can be seen in Figure 2 and in Table 11. Table 11 presents the group behavior on the four experimental conditions. As these data are not normally distributed, they could not be statistically analysed other than presenting the descriptives. These data are almost identical to the native speaker control data shown in Table 8.

**Table 11.** Results Elicitation task elementary-intermediate proficiency group ( $N = 12$ )

|           | +definite                       | -definite                       |
|-----------|---------------------------------|---------------------------------|
| +specific | 95.0% the<br>5.0% a<br>0% other | 98.3% a<br>0% the<br>1.7% other |
| -specific | 96.7% the<br>3.3% a<br>0% other | 98.3% a<br>1.7% the<br>0% other |

## 5. Discussion

The non-target-like performance on the Article Elicitation task in the primary and preliminary-proficiency groups in most conditions suggests that transfer of the ACP definiteness setting from the L1 to the L2 does not take place at the onset of L2 acquisition. However, the error pattern across the conditions in the primary and preliminary-proficiency groups cannot be explained by the Computational Egocentricity Hypothesis either.

First of all, the primary-proficiency group errs on all conditions, but shows more accurate performance on the indefinite conditions than on the definite conditions. Recall that the Computational Egocentricity Hypothesis predicts non-targetlike performance in indefinite specific contexts and in definite non-specific contexts, and thus, by implication, targetlike behavior in indefinite non-specific and definite specific contexts. The same group attained a lower score on the Anglia Placement Test than the other groups, indicating that they have a smaller vocabulary than the other groups. After close inspection of the items in the definite conditions, it turned out that this particular condition contained more words that might have been unfamiliar to them than the indefinite conditions. Their misinterpretation of the unknown words may have caused them to choose an incorrect article. It is vital for students to understand the contexts of the experimental items in order to provide the correct article; hence, a misunderstanding of the situation would lead to incorrect article choice.

Secondly, the preliminary-proficiency group scores significantly lower than the native speaker group in all but one conditions, namely, the indefinite nonspecific condition. Interestingly, the indefinite nonspecific condition contains words that are frequent in the English language, such as *dog* and *girl*, so the preliminary proficiency participants may not be hindered by poor vocabulary in this condition. At the same time, this condition could be interpreted as semantically less complex, as indefiniteness and nonspecificity complement each other, strengthening the non-familiarity of the referent to the speaker. In this sense, the indefinite nonspecific condition could be less computationally taxing, and thus this one result for the preliminary-proficiency group may be in line with the Computational Egocentricity Hypothesis.

Since neither the Transfer Hypothesis nor the Computational Egocentricity Hypothesis in their present forms can account for all of our data, we propose an adapted account making use of proficiency. Our data show that article choice accuracy improves as proficiency increases, corroborating results from other studies (Ionin et al. 2008; Zdorenko & Paradis, 2008; Deprez et al. 2011, a.o.). The elementary-intermediate proficiency group has the highest proficiency according to the Anglia Placement Test and shows ceiling level accuracy on the experimental items. The primary-proficiency group, in contrast, has the lowest proficiency score and shows lower levels of accurate article choice. One way to explain the difference between these groups is that the L2 learners who do not know the meaning of the relevant nouns in the experimental items fail to complete the experimental item correctly. For example, if the L2 learner does not know the meaning of the noun *principal*, or *capital*, s/he cannot apply (her)/his world knowledge to the interpretation of this noun. Native speakers of English knowing the meaning of *principal* or *capital* know that in general, a school has one principal and a country has one capital. When this world knowledge is applied, nouns such as *principal* or *capital* can be accompanied by a definite article, even if they have not been mentioned in the previous discourse. Absence of lexical-semantic knowledge of such nouns could cause the speaker to conclude that they cannot be definite because they have not been introduced in the previous discourse. As lexical-semantic knowledge expands as general language proficiency increases, it is not surprising that our participants improve on correct article choice as their proficiency (and thus their lexical-semantic knowledge) becomes better (Zorevo, Schwanenflugel, & Nikolova, 2005; Kondal, 2015). This also suggests that the written Article Elicitation Task in and of itself may have been too difficult, and thus not suitable for the primary and preliminary-proficiency groups, implying that the results of these two proficiency groups cannot tell us much in terms of our predictions and hypotheses. Furthermore, taking into account Sorace's (2011, 2016) Interface Hypothesis and the potential influence of non-linguistic cognitive factors on L2 acquisition, our

primary and preliminary-proficiency groups' performance on article choice may have been hindered by cognitive overload, preventing correct article choice.

Nevertheless, we would like to propose a preliminary account of our data, making use of the difference between grammar (phonology, syntax, semantics) and language components outside grammar (lexicon, pragmatics). We argue that lexical-semantic knowledge, as part of general language proficiency, is a necessary condition for the correct application of a parameter setting (grammar). Even though the ACP definiteness setting may have transferred from the L1 to the L2 in even our primary proficiency participants, correct application of this definiteness setting is not warranted, because of incomplete lexical-semantic knowledge, preventing the incorporation of world knowledge, for example. We propose that all our L2 learners, even our primary and preliminary proficiency participants, have correctly transferred the definiteness ACP setting from Dutch to English. However, the primary and preliminary-proficiency groups' semantic knowledge is not sufficient to always apply this setting correctly. In contrast, the elementary-intermediate proficiency group has acquired sufficient lexical-semantic knowledge to apply the definiteness ACP setting to English article choice. What is interesting, is that the proficiency level of our elementary-intermediate-proficiency group is only intermediate at best (according to Anglia norms), and thus still far from native-like. Apparently, proficiency, or lexical-semantic knowledge only has to reach a certain threshold, to perform native-like on article choice.

This explanation is compatible with Ionin et al.'s (2008) data in the following sense: the fact that our primary and preliminary-proficiency groups' results differ from those of Ionin et al. (2008) could be attributed to the difference in age of the participants: in Ionin et al.'s (2008) study the participants were university students, aged 19–28, whereas our participants were adolescents, aged 12–16. As Ionin et al.'s (2008) participants were older and probably had had more English input and instruction than our participants (as they had had English classes in Mexico since age 13 or younger), it is likely that English proficiency was higher than at least our primary and preliminary proficiency participants. Thus, it seems fair to compare Ionin et al.'s (2008) results to the results of our elementary-intermediate-proficiency group only. When we do that, our Article Elicitation results for L2 English match those of Ionin et al.'s (2008). In addition, Deprez et al.'s (2011) results can be explained by our hypothesis: the L1 Arabic learners who had had 280 hours of exposure to French outperformed the L1 Dutch learners who had had 200 hours of exposure to French. However, taking into account that these L1 Arabic learners came from Algeria, a former French colony, they probably had a more extensive vocabulary and, hence, more lexical-semantic knowledge than their Dutch peers.

For these reasons, we believe that Ionin et al.'s (2008) Transfer Hypothesis is on the right track regarding the Article Choice Parameter, and that Computational

Egocentricity does not play a role in English L2 article choice by native Dutch speakers. In other words: cross-linguistic influence of the L1 ACP setting is visible in the L2 only if there is sufficient semantic knowledge of the relevant lexical items.

Of course, as our written Article Elicitation Task seems too difficult for our primary and preliminary-proficiency groups, article choice in Dutch adolescent learners of English should be tested in a different way, for example, making use of an individual, oral Elicited Production Task along the lines of Schaeffer & Matthewson (2005). To ensure the participants' lexical-semantic knowledge of the nouns used in such a test, a vocabulary test should be included as well. Furthermore, taking into account the broader literature on the potential influence of non-linguistic cognitive factors in L2 acquisition (cf. Sorace 2011; 2016, a.o.), future research on low and medium proficiency L2 learners of English should also include standardized tests on, for example, verbal Executive Functioning (EF) and perspective taking in the L2. Such tests provide an indication of general cognitive load (EF) and ego-centricity (perspective taking). Measuring general cognitive load is important with respect to Sorace's (2011, 2016) hypothesis that cognitive load is higher when speaking an L2 than speaking an L1, resulting in certain errors, specifically at the syntax-pragmatics interface. If the results of an individually administered oral Elicited Production Task resemble the current results, our proposed analysis may be on the right track. In addition, if scores on EF and perspective taking are lower than those of the controls for the primary and preliminary-proficiency groups, but native-like for the elementary-intermediate-proficiency group, this would suggest that poor article performance in lower proficiency groups is (partially) caused by computational overload. Finally, more robust and convincing evidence for or against the Transfer Hypothesis could be obtained by including participant groups with an L1 whose ACP setting is specificity, rather than definiteness (e.g., Samoan). If such participants show overuse of *a* in [+definite, -specific] contexts and overuse of *the* in -definite, +specific contexts, the Transfer Hypothesis is further confirmed. No differences with L1 Dutch-L2 English participants would provide evidence against the Transfer Hypothesis.

## 6. Conclusion

In this study we tested two hypotheses regarding the choice between a definite and an indefinite article, namely Ionin et al.'s (2008) Transfer Hypothesis and Deprez et al.'s (2011) Computational Egocentricity Hypothesis. To this end, we examined the elicited written production of definite and indefinite articles and the English proficiency level of adolescent Dutch-speaking L2 learners of English. The proficiency scores enabled us to categorize our L2 participants into three proficiency

groups: primary, preliminary and elementary-intermediate. Our article elicitation results show that the primary and preliminary-proficiency groups score significantly lower than the native English-speaking control group on virtually all conditions. These results seem to refute the Computational Egocentricity Hypothesis, predicting overuse errors only in contexts in which the values of definiteness and specificity clash. However, as the written elicitation task may have been too difficult for the primary and preliminary-proficiency groups, the implications of the primary and preliminary-proficiency group data should be considered with care.

At first sight, the obtained results show little evidence for the Transfer Hypothesis as well: cross-linguistic transfer of the Article Choice Parameter setting for definiteness from the L1 (Dutch) to the L2 (English) does not seem to take place in the primary and preliminary-proficiency groups, but only in the elementary-intermediate-proficiency group. To account for our data, we proposed a preliminary analysis distinguishing between grammar and language knowledge outside grammar: Assuming that (non-grammatical) lexical-semantic knowledge is part of proficiency and necessary to correctly apply a parameter setting (grammar), we argue that the ACP definiteness setting of Dutch grammar is transferred to English from the onset of second language acquisition on, but only starts to be visible when proficiency (read: non-grammatical lexical-semantic knowledge) is sufficiently developed, but not necessarily native-like. If this turns out to be true, the acquisition of article choice in L2 English is facilitated by cross-linguistic influence from L1 Dutch.

Acknowledging the methodological shortcomings of the current study, we propose that future investigations of article choice in adolescent Dutch learners of English should include an individually administered oral Elicited Production Task, a standardized vocabulary task, standardized tests on non-linguistic EF and perspective taking, and groups of participants with an L1 whose ACP setting is specificity.

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