

Adult L2-learners Lack *the* Maximality Presupposition, Too!*

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This paper examines errors of article use in L2-English, and argues for similarity between L1- and L2-acquisition of articles. Our experimental data show that *partitivity as discourse-given set membership* contributes to overuse of 'the' in place of 'a' in L2-English, as in child L1-English. We propose that adult L2-English learners have difficulty with the Maximality presupposition for 'the', similarly to child L1-learners (cf. Wexler 2003). The parallels between child L1- and adult L2-acquisition imply that 'the' overuse by learners is tied to a semantic factor rather than to children's egocentricity. Our data also demonstrate that partitivity and specificity are independent factors at work in L2-acquisition.

1. Introduction

Investigation of parallels between adult second language (L2) and child first language (L1) acquisition has been at the center of intensive research in current acquisition studies (see Flynn 1987; Thomas 1989; Neeleman & Weerman 1997; Ionin & Wexler 2002; Schwartz 2003; Unsworth 2004, among others, for child-adult comparisons). The shared assumption underlying this research program is that parallels between L2 and L1 acquisition can deepen our understanding of the general human ability to acquire language. Adult L2 data reveal the process of language acquisition uninfluenced by the concurrent cognitive growth of child L1 learners. Child L1 data reveal language acquisition patterns unaffected by L1-transfer. Parallels between adult L2 and child L1 data, thus, constitute evidence that the course of language acquisition is determined (at least partly) by universal linguistic factors which are separate from L1-transfer and cognitive growth. This paper investigates such L1-L2 parallels in the domain of English article usage, and argues for similarity between L1 and L2 acquisition of article semantics.

In particular, we examine L2 acquisition of English articles by adult L1-Korean speakers. Since Korean lacks articles (or direct parallels to articles in other domains of the grammar), it is unlikely that L1-transfer plays a crucial role in L2-English article use by Korean speakers. For the purposes of this paper, we abstract away from the issue of L1-transfer and ask what factors guide L2-acquisition of English articles in the absence of articles in the L1 (see also Ionin,

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Ko & Wexler 2004 for discussion; Perovic, Ko, Ionin & Wexler (in prep.) for related discussion about L1-Serbo-Croatian learners' L2-acquisition of English articles). On the basis of our experimental results, we argue that L2 learners' errors in article choice are not random, but systematically reflect the role of a universal semantic feature: *partitivity as discourse-given set membership*. Drawing on a well-established observation about child L1 acquisition, we argue that *partitivity* also plays a significant role in L1 acquisition of English articles (cf. Wexler 2003). The current findings on parallels in L1 and L2 acquisition of articles imply that 'the' overuse by learners is tied to a semantic factor rather than to children's egocentricity (cf. Maratsos 1976, based on Piaget 1955). This study also shows that L2 learners' errors reflect learners' systematic knowledge of universal semantic features, namely *partitivity*, *specificity*, and *definiteness*.

2. Background: Previous Studies

It is well-established that L2-English learners make errors in article usage. L2-learners sometimes overuse *the* in place of *a*, overuse *a* in place of *the*, or omit an article where the context requires it (see Huebner 1983; Master 1987; Parrish 1987; Thomas 1989; Kaneko 1996; Leung 2001; Ionin 2003; Ionin et al 2004, among others).

It is important to note that L2-learners' errors in article choice are not random. In a series of experiments, Ionin (2003) and Ionin et al (2004) show that L2-English article choice is constrained by the semantic features of *definiteness* (1) and *specificity as speaker intent to refer* (2).¹

- (1) **If a DP of the form [D NP] is [+definite]**, the speaker assumes that the hearer shares the speaker's presupposition of the existence of a unique individual in the set denoted by the NP (a formal definition is given in (10); for an overview of different formal analyses of definiteness, see Heim 1991).
- (2) **If a DP of the form [D NP] is [+specific]**, 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 (based on Fodor and Sag 1982 / Ionin 2003; for a formal definition, see Ionin 2003:56).

Ionin et al observe that L2-learners overuse *the* with indefinites when the relevant DP is [+specific], as in (3). In contrast, L2-learners rarely overuse *the* when the DP is [-specific], as in (4). Furthermore, L2-learners overuse *a* with definites when the relevant DP is [-specific], as in (6), but rarely overuse *a* when the DP is [+specific], as in (5) (only the target sentences are given below; see Ionin 2003, Ionin et al 2004 for the full contexts of the stimuli).

¹ See Ionin (2003) for an overview of previous literature on L2-English article errors; see also Footnote 6 on different views of specificity.

- (3) [+ *specific*] *indefinites* => **found overuse of 'the' in L2-English**
William: I am here for a week. I am visiting a friend from college – his name is Sam Brown, and he lives in Cambridge now.
- (4) [- *specific*] *indefinites* => **found correct use of 'a' in L2-English**
Clara: I don't really know [where Jonathan is]. He is staying with a friend – but he didn't tell me who that is. He didn't leave me any phone number or address.
- (5) [+ *specific*] *definites* => **found correct use of 'the' in L2-English**
Laura: I would like to meet the author of that book some day – I saw an interview with her on TV, and I really liked her!
- (6) [- *specific*] *definites* => **found overuse of 'a' in L2-English**
Sarah: I would like to meet the author of that painting – unfortunately, I have no idea who it is, since the painting is not signed!

Just as in the L2 literature, acquisition of articles has also attracted a great deal of attention in L1 literature. Studies on L1 acquisition have shown that child L1-learners make errors in article usage (Brown 1973; Warden 1974; Maratsos 1976; Karmiloff-Smith 1979; Emslie and Stevenson 1981; Zheler & Brewer 1982; Garton 1983; Schafer & de Villiers 2000; Matthewson, Bryant & Roeper 2001; Schaeffer & Matthewson, *to appear*). In particular, it has been observed that children overuse *the* with indefinite DPs in the context of set membership. We term such DPs *partitive* and define them as follows:

- (7) **If a DP is [+partitive]**, it denotes an individual that is a member of a set introduced by previous discourse (cf. Enç 1991, Diesing 1992).²

For instance, child L1-learners overuse *the* in partitive contexts like (8) (Maratsos 1976: 51). The target (adult) response to the context in (8) is *a girl* or *a boy* (or: *one of the girls/boys*), which denotes a member of the set introduced in the previous discourse. A definite response is infelicitous, since there is no unique girl or boy under discussion. On the other hand, four-year-old children often overused *the* in contexts like (8), as shown in (9) (in contrast, the children in Maratsos' study were quite accurate in supplying *a* in non-partitive indefinite contexts).

- (8) **Adult:** Once there was a lady. She had lots of girls and boys, about four girls and three boys. They were very noisy and they kept her awake all the time. One night she went to bed. She told them to be very quiet. She said, 'If anyone makes any noise, they won't get any breakfast tomorrow'. She went to bed. But do you know what happened? **One of them started laughing and giggling.** Let' see.

² Enç (1991), among others, uses the term *specific* for DPs that we are calling *partitive*. We are reserving the term *specific* for DPs involving *specificity as speaker intent to refer*, as defined in (2). It is important to note that the terms *partitivity* and *specificity*, as we are using them, denote quite different semantic concepts: set membership on the one hand, and speaker intent on the other. Diesing's (1992) discussion is about *presuppositional* indefinites more broadly, of which partitive indefinites are a subtype.

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There were four girls and three boys. Who was laughing and giggling like that?

(9) **Child's response to (8): THE BOY** (or: THE GIRL)

One influential type of analysis for this error argues that children overuse *the* in (9) due to a *lack of pragmatic knowledge*. Specifically, a child uses *the* when he/she has one salient referent in mind, ignoring the state of the listener's knowledge (Maratsos 1976, Schaeffer and Matthewson, to appear, among others).³ In a similar vein, Karmiloff-Smith (1979) argues that children may use *the* like a demonstrative, so that the definite article points to an object under the child's focus of attention.

Another line of approach to the error in (9) argues that children overuse *the* due to a *lack of semantic knowledge*. In particular, children's lexical entry for *the* has the presupposition of existence, but it lacks the presupposition of "uniqueness" (maximality) (Wexler 2003). Under this approach, the lexical entry for children's *the* (11) is crucially different from adults' lexical entry for *the* (10) in that the lexical entry for children's *the* lacks the *Maximality Presupposition*. Under the definition of *the* in (11), [*the* x] essentially means [*one of the* x] – i.e., it has a [+partitive] reading.

(10) Adults' lexical entry for *the* (based on Heim 1991)

[*the* x] P expresses that proposition which is:

- true at an index *i*, if **there is exactly one x at i, and it is P at i**
- false at an index *i*, if there is exactly one at *i*, and it is not P at *i*
- truth-valueless at an index *i*, if there isn't exactly one x at *i*

(11) Children's lexical entry for *the* (Wexler 2003)

[*the* x] P expresses that proposition which is:

- true at an index *i*, if **there is an x at i, and it is P at i**
- false at an index *i*, if there is an x at *i*, and there is no x such that x is P at *i*
- truth-valueless at an index *i*, if there is no x at *i*

3. Research Questions

As seen in the previous section, there has been a general consensus that both L1 and L2 learners make errors in article usage. Moreover, it has been observed that both L1 and L2 learners overuse *the* in contexts where *a* is appropriate. Crucially, however, it has remained an open question whether article errors in child L1-English and adult L2-English are traceable to the same semantic

³ As Heim (2003) points out, Maratsos' approach, which relies on children's *egocentricity*, cannot explain the contrast between overuse of *the* in partitive contexts and no overuse of *the* in non-partitive contexts without additional stipulations. See Wexler (2003) for more discussion. Schaeffer and Matthewson (to appear) examine *the* overuse in a different, non-partitive environment.

factors. Many L1 studies have investigated article (mis)use in the context of *partitivity*. Recent L2 studies have examined the effect of *specificity as speaker intent*. If acquisition of articles is constrained by universal semantic features, however, we expect that both features play a role in both L1- and L2-acquisition. Thus, in order to investigate parallels between L1- and L2-acquisition, one can ask whether *specificity* yields overuse of *the* in L1 (as well as L2) acquisition, and whether *partitivity* leads to overuse of *the* in L2 (as well as L1) acquisition. In this paper, we focus on the latter question (the role of partitivity in L2-acquisition) and leave the former question for future research.

If partitivity is a universal semantic feature affecting acquisition of articles, we expect that adult L2-learners, just like child L1-learners, will overuse *the* with partitive indefinites (i.e., in contexts where the existence, but not the Maximality, presupposition has been met), as stated in (12).

(12) **Prediction: *partitivity as a universal semantic feature***

Adult L2-learners will systematically overuse *the* with indefinites in [+partitive] contexts, but not with indefinites in [-partitive] contexts (except where other factors, such as *specificity*, contribute to overuse of *the*).

4. Experiment: The Role of Partitivity

4.1 Procedure

To test the prediction in (12), we conducted an experiment with 20 adult L1-Korean learners of English. The learners' L2-proficiency was measured by the Michigan test: 16 L2-learners were advanced, and 4 were intermediate. The test was piloted with 6 native speakers of English, who performed as expected.

The task was a forced choice elicitation test. The subjects were presented with English dialogues and asked to choose an article for the target sentence in each dialogue on the basis of the context. The choices of *the*, *a*, and – (no article) were provided.⁴

The stimuli consisted of 80 English dialogues, falling into 20 context types, 4 items per context type. 10 context types targeted *a*, and 10 context types targeted *the*. The items were arranged into two pseudo-randomized test orders, each of which was given to 10 subjects. In this paper, we report the data from the 10 indefinite contexts, focusing on the effects of partitivity in overuse of *the*.⁵

⁴ An additional 20 L1-Korean L2-English learners (plus 4 native English speakers) took a different version of the test, in which the choice of articles was not provided, and the learners had to fill in the blank with the right article. The main effect of partitivity was present in both test types, but there were some other differences, in particular with respect to specificity, which require further investigation. (See Ko, Ionin & Wexler (in prep.) for the results of the fill-in-the-blank test).

⁵ We do not report the data for the definite contexts here. These included [\pm specific] definite contexts modeled after Ionin et al (2004), with some modifications, as well as fillers. The subjects

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4.2 Stimuli: Partitivity and Scope

Six of the indefinite contexts were designed to test the role of partitivity in L2-English article use, as well as to check whether partitivity is independent of such grammatical phenomena as plural-marking and scope. The specific research questions were:

- (13) a. Does partitivity contribute to overuse of *the* in L2-English?
b. Is partitivity an abstract semantic feature or a morphological reflex requiring a plural-marked DP in the previous discourse?
c. Does partitivity interact with the grammatical *scope* of the DP, and if so, how?

While the main research question is posed in (13a), the question in (13b) is particularly important for our treatment of partitivity as a semantic universal. Previous L1-literature observed overuse of *the* in *explicit* partitive contexts (e.g. *four boys – a boy*). However, it has not tested whether overuse of *the* extends to DPs in *implicit* partitive contexts (e.g. *orchestra – a musician*). Note that in explicit partitive contexts, both morphology (e.g., the form *boy*, with plural marking) and semantics indicate a set membership relation between DPs in the previous discourse and the target DP. In implicit partitive contexts, on the other hand, there is no morphological indication of set membership. Hence, if we observe overuse of *the* with indefinites both in explicit and implicit partitive contexts in L2-English, this would strongly suggest that the effect of partitivity is tied to a semantic factor, rather than to a reflex of plural morphology in English.

The question in (13c) also has important implications for the research on L2-article choice, since previous studies of L2-acquisition (e.g., Huebner 1983, Thomas 1989) investigated the role of *scope* in L2-English article choice.⁶ To evaluate the effect of partitivity, it is important to tease it apart from the effects of other semantic factors, such as scope (as well as specificity – see Section 4.4), which may independently cause overuse of *the* in L2-English.

The six context types exemplified in (14)-(19) tested the role of partitivity (explicit vs. implicit vs. non-partitive) and scope (wide vs. narrow) in L2-English article use. (In wide scope contexts, the indefinite DP takes wide scope by default, in the absence of any operators.)

(14) **Wide Scope, Explicit Partitive:**

Elissa: How is your nephew Aaron doing? He is such a nice little boy!
Robert: He has some good news – his parents finally allowed him to get a pet – just one! So last week, he went to our local pet shop. **This**

successfully supplied *the* in most (non-filler) definite contexts, with higher *the* use on [+specific] definites (90%) than on [-specific] definites (70%). See Ko et al (in prep.) for details.

⁶ While these studies used the term *specific reference*, the use of this term corresponded to *wide scope over any intensional/modal operators* (or by default, in the absence of such operators). See Ionin et al (2004) for discussion, and for evidence that specificity as speaker intent to refer, rather than wide scope, contributes to overuse of *the* in L2-English.

pet shop had five puppies and seven kittens, and Aaron loved all of them. But he could get only one!

Elissa: Oh, so what did he do?

Robert: Well, it was difficult for him to make up his mind. **But finally, he got (a, the, --) puppy**. Aaron went home really happy!

(15) **Wide Scope, Implicit Partitive:**

Jane: Your friend Lucy looks really excited. What's going on?

Mary: Well, last Sunday was a really a big day for her. She went to the airport to see her mother off, **and ran into the Boston Red Sox team**. You know what? She was very lucky – **she got an autograph from (a, the, --) player**. And afterwards, she met some friends at the airport! What a day!

(16) **Wide Scope, Non-Partitive:**

Elissa: How is your nephew Joey doing? He is such a nice boy!

Robert: Well, he was a bit depressed the last few days. So, his parents decided to get him a pet. So last week, he went to our local pet shop.

Elissa: Oh, so did he buy some animal there?

Robert: No, he did not like the puppies in the pet shop, in fact. But then he was walking home, and **he found (a, the, --) kitten in the street!** So now he has a new pet after all!

(17) **Narrow Scope, Explicit Partitive:**

Elissa: How is your niece Amy doing?

Robert: Great! Her parents finally allowed her to get a pet at the local pet shop. **Amy knows that this pet shop has five puppies and six kittens**.

Elissa: Oh, so which one of these animals is she going to buy?

Robert: She has not quite decided yet. But **she definitely wants to buy (a, the, --) puppy**. She is going to the pet shop on Friday.

(18) **Narrow Scope, Implicit Partitive:**

Jane: Hi, how are you? I heard that your brother Jason is going to the airport tomorrow morning. Is he going somewhere?

Mary: Oh, no! **Jason will go there to meet the Boston Celtics team**. The team will be leaving Boston on the 7AM flight. **Jason wants to get the autograph of (a, the, --) player**. Any player would do – this would make him really happy!

(19) **Narrow Scope, Non-Partitive:**

Susan: How are you Nancy? What are you thinking about? You look so happy.

Nancy: Well, I have to solve two math problems and write three essays.

Susan: Does it make you happy? I don't understand you!

Nancy: Oh! No!! But I have to finish this homework quickly. **My mother decided to get me (a, the, --) pet!** She promised she'll do that if I finish homework!

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If partitivity is a semantic feature independent of scope, we expect to see overuse of *the* in explicit as well as implicit partitive contexts [(14), (15), (17), (18)], but crucially not in non-partitive contexts like (16) and (19).

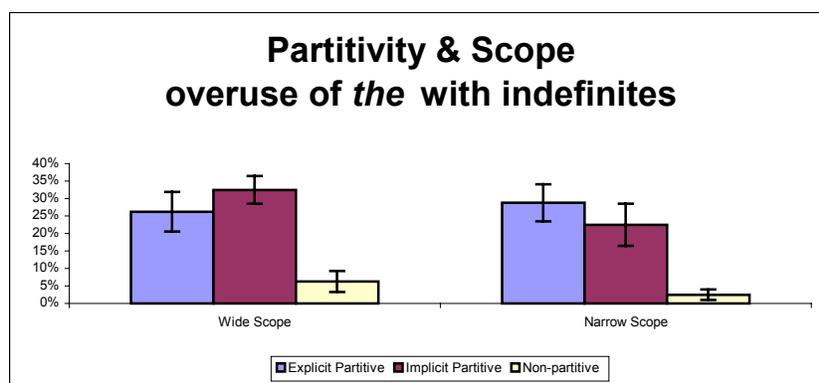
4.3 Results: Partitivity and Scope

The table in (20) and the graph in (21) summarize the results for these contexts:

(20) Table I: partitivity & scope (overuse of *the* with indefinites)

Context	Wide Scope: Mean	Narrow Scope: Mean
Explicit Partitive	1.05/4 (26.2 %)	1.15/4 (28.8 %)
Implicit Partitive	1.30/4 (32.5 %)	0.9/4 (22.5 %)
Non-partitive	0.25/4 (6.3 %)	0.1/4 (2.5 %)

(21) Graph I: partitivity and scope (overuse of *the* with indefinites)



Overall, L2-learners overused *the* with explicit and implicit partitive indefinites more than with non-partitive indefinites. Furthermore, overuse of *the* with partitive indefinites was observed both in wide and narrow scope contexts. Article omission was quite low across contexts (0%-10%). Hence, correct use of *a* in these contexts shows the inverse pattern of (21).

To test the statistical significance of the above results, we conducted repeated measures ANOVAs on *the* use, using partitivity and scope as within-subjects factors, and test order and proficiency as between-subjects factors. The ANOVAs show that there was a main effect of partitivity [$F(2,32)=13.397$, $p<.0001$], and there was no significant interaction between partitivity and scope [$F(2,32)=.137$, $p=.872$]. The main effect of proficiency approached marginal significance [$F(1,16)=3.643$, $p=.074$].⁷

⁷ We found a significant main effect of scope for *the* overuse [$F(1,16) = 5.950$, $p=.027$], but no main effect of scope for *a* use [$F(1,16)=.022$, $p=.883$]. (On the other hand, the main effect of partitivity is present whether we measure *the* or *a* use). This is potentially due to the fact that the omission rate in narrow scope contexts (8%) was significantly higher than the omission rate in wide scope contexts

Planned comparison results show that learners overused *the* with partitive indefinites significantly more than with non-partitive indefinites. This holds for explicit partitive vs. non-partitive indefinites [$F(1,16) = 23.2, p < .0001$], and for implicit partitive vs. non-partitive indefinites [$F(1,16) = 17.6, p = .001$]. Crucially, there was no significant difference between explicit and implicit partitive contexts in use of *the* [$F(1,16) = .588, p = .454$].

The results show that L2-learners' article errors are not random, but systematic, and traceable to the semantic feature *partitivity*, as we predicted. Specifically, our data show that partitivity induces overuse of *the* with indefinites in L2-English, independently of scope. The fact that both explicit and implicit partitive contexts yield overuse of *the* in L2-English confirms our hypothesis that partitivity is a semantic factor rather than a reflex of English plural morphology. The fact that both adult L1 Korean L2 English learners and child L1 English learners overuse *the* with partitive indefinites suggests that overuse of *the* is tied to universal semantic features (available for both L1 and L2 learners), rather than to a pragmatic deficit or to an L1-transfer effect.

4.4 A follow-up question: Partitivity and Specificity

Our experimental results show that partitivity leads to overuse of *the* in L2-English. Given the previous discussion about the role of *specificity* in L2-English (Ionin 2003, Ionin et al 2004), an immediate question arises concerning the relationship between partitivity and specificity:

- (22) a. How does the partitivity feature interact with the specificity feature in L2-English article choice?
b. Are partitivity and specificity two expressions of the same semantic property, or are they independent factors at work in L2-English?

To investigate the questions in (22), we included the following stimuli in the elicitation task described above (all partitives here are implicit partitives).

- (23) **Partitive, Specific**
Molly: So what did your guest Mr. Svenson do over the weekend?
Jamie: **Well, he went to see our local softball team play.** He had a good time. **Afterwards, he met (a, the, --) player – she was very nice and friendly.** And she played really well!
- (24) **Partitive, Non-specific**
Ben: I just saw Tom, and he looked really excited. Do you know why?
Melissa: **Yes – he was able to see the Boston Red Sox team while they were practicing.** And he is a huge fan! **He even got a signature from (a, the, --) player – I have no idea which one.** Tom was really excited!

(2%) [$F(1,16) = 6.253, p = .024$]. We also found interactions between scope*proficiency [$F(1,16) = 4.46, p = .051$], and scope*partitivity*test order [$F(2,32) = 5.54, p = .009$]. We leave the interpretation of these results for further investigation.

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(25) **Non-partitive, Specific**

Helen: I'm very sorry, but she doesn't have time to talk right now.
She is meeting with (a, the --) very important client from Seattle.
He is quite rich, and she really wants to get his business for our company! She'll call you back later.

(26) **Non-partitive, Non-specific**

Wife: Where is Peter? I haven't seen him all evening.
Husband: He is on the phone – he has been on it for hours.
Wife: That's not like Peter at all – he almost never uses the phone.
Husband: **But this time, he is talking to (a, the --) girl – I have no idea who it is, but it's an important conversation to Peter.**

The overall results on these items are summarized in table II in (27):

(27) Table II: partitivity and specificity (overuse of *the* with indefinites)

Context	Specific: Mean	Nonspecific: Mean
Partitive	1.55/4 (39%)	0.65/4 (16%)
Non-partitive	1.2/4 (30%)	0.15/4 (4%)

The results show that L2-learners overuse *the* with partitive indefinites more than with non-partitive indefinites, and overuse *the* with specific indefinites more than with non-specific indefinites. Repeated measures ANOVAs on *the* use (partitivity and specificity as within-subjects factors; test order and proficiency as between-subjects factors) show that learners overuse *the* with partitive indefinites significantly more than with non-partitive indefinites [$F(1,16)=10.50$, $p=.005$]. Learners also overuse *the* in specific contexts significantly more than in non-specific contexts [$F(1,16)=12.72$, $p=.003$]. Crucially, there was no significant interaction between partitivity and specificity [$F(1,16)=.17$, $p=.684$]. There were no other main effects (e.g. no significant main effect of proficiency [$F(1,16)=3.61$, $p=.223$]).⁸ The current data strongly suggest that both partitivity and specificity are semantic features at work in L2-acquisition of English articles, and that the effects of these two semantic features are independent.

5. Conclusion

In this paper, we have argued for parallels between L1 and L2 acquisition of articles. We have shown that both L1 and L2 learners have difficulty in learning the Maximality Presupposition of *the*. Given that adult L2-learners have full pragmatic knowledge (i.e. no egocentricity), the current findings provide further support for the view that overuse of *the* by learners is due to semantic factors,

⁸ We found a significant interaction between partitivity*proficiency*test order [$F(1,16)=8.04$, $p=.012$]. There is no significant difference in *the* use between [+specific, +partitive] and [+specific, -partitive] contexts [$F(1,16)=1.41$, $p=.251$], so we cannot be absolutely certain that specificity and partitivity are independent factors. However, the lack of an interaction is suggestive.

rather than to a pragmatic/cognitive deficit (per Wexler 2003, contra Maratsos 1976). We have also shown that partitivity contributes to overuse of *the* in L2-English independently of scope and specificity. This result indicates that there are at least three independent semantic factors at work influencing L2-article choice (definiteness, specificity, partitivity). This poses a challenge to a recent proposal that only definiteness (common ground) and *speaker beliefs* play a role in article specifications in acquisition (Schaeffer and Matthewson, to appear, on L1-acquisition). Moreover, our experimental results demonstrate that both implicit and explicit partitivity yield overuse of *the*. This result implies that partitivity is a semantic factor rather than a reflex of English plural morphology.

The present findings provide further support for the view that L2 learners' errors reflect systematic access to semantic universals which are not necessarily lexically instantiated in their L1 – but which are, arguably, available through Universal Grammar. An interesting direction for further research would be to investigate the effects of implicit partitivity as well as of specificity in child L1-acquisition, and to compare child L1- and adult L2-acquisition directly.

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