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

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1. Investigation of Parallels between L1 and L2 Acquisition

- Investigation of both adult L2 and child L1 acquisition can deepen our understanding of the general human ability to acquire language (cf. Thomas 1989, Jordens 1998, Neeleman & Weerman 1997, Unsworth 2003, among others, for child-adult comparisons).
  - Adult L2 data may reveal the process of language acquisition uninfluenced by the concurrent cognitive growth of the child L1 learners
  - But unlike L1-acquisition, L2-acquisition may be influenced by L1-transfer.
- *When L1-transfer can be ruled out as an explanation…* **close parallels between L1-learners and L2-learners suggest that similar linguistic factors may be at work!**
  - **We investigate child/adult parallels in the domain of English article choice.**
  - L1-transfer is unlikely to play a role: we investigate L2-acquisition of English articles by speakers of an article-less L1 (Korean).

2. Goals of the talk

- To investigate a possible parallel between L1 and L2 acquisition of article semantics - in particular, the role of *partitivity* in article choice.
- To investigate the relationship between different semantic factors (*specificity*, *scope* and *partitivity*) in L2 English article choice
- To tie our findings to previous studies on article acquisition by L1- and L2-English learners.

3. Previous studies on L2-acquisition of English articles

- Article misuse in L2-English: **overuse of *the* with indefinites, overuse of *a* with definites** (see Huebner 1983; Master 1987; Parrish 1987; Thomas 1989; Kaneko 1996; Leung 2001; Ionin 2003; Ionin, Ko, and Wexler, to appear, among others).
- L2-English article errors are not random; **L2-English article choice is constrained by the universal semantic features of *definiteness* and *specificity as speaker intent to refer***. In particular, **overuse of *the* is tied to the [+specific] feature, and overuse of *a* is tied to the [-specific] feature** (see Ionin 2003, Ionin et al., to appear).

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DEFINITENESS AND SPECIFICITY: INFORMAL DEFINITIONS

If a DP of the form [D NP] is [+definite], the speaker and the hearer presuppose the existence of a unique individual in the set denoted by the NP (for formal definitions, see Heim 1991).

If an DP is 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; for formal definition, see Ionin 2003).

(1) **a. [+specific] indefinite** => found ***the* overuse in L2 English**

Roberta: Hi, William! It's nice to see you again. I didn't know that you were in Boston.
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.**

b. [-specific] indefinite => found correct *a* use in L2 English

Chris: I need to find your roommate Jonathan right away.
Clara: He is not here – he went to New York.
Chris: Really? In what part of New York is he staying?
Clara: I don't really know. **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.**

(2) a. [+specific] definite => found correct *the* use in L2 English

Eric: I really liked that book you gave for my birthday. It was very interesting!
Laura: Thanks! I like it too. **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!**

b. **[-specific] definite** => found ***a* overuse in L2 English**

Sarah: Do you see that beautiful landscape painting?
Mary: Yes, it's wonderful.
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!**

4. Previous studies on L1-acquisition of Articles

THE Classic Puzzle: Children overuse *the* with partitive indefinite DPs

PARTITIVITY: INFORMAL DEFINITION

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).

NB: 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 above. 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 to refer on the other. (Diesing's (1992) discussion is about *presuppositional* indefinites more broadly, of which partitive indefinites are a subtype).

- Findings of definite article overuse with [+partitive] indefinite DPs in L1-acquisition: Warden 1974, 1976; Maratsos 1974, 1976; Karmiloff-Smith 1979; Schafer and de Villiers 2000, among others. (cf. Bresson 1974, Brown 1973, Emslie and Stevenson 1981, Zheler and Brewer 1982, Garton 1983, Matthewson, Bryant & Roeper 2001, Schaeffer and Matthewson, *to appear*, for the role of other factors).

(3) **Adult:** Once there was a lady. She had lots of girls and 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. **There were four girls and three boys**. Who was laughing and giggling like that?

Child's response: THE BOY. (from Maratsos 1974, 1976)

EXPLAINING OVERUSE OF *THE* IN L1-ACQUISITION:

- ***Lack of pragmatic knowledge?***

Egocentric response. A child might use *the* when she has one salient referent in mind, ignoring the state of listener knowledge. (Maratsos 1976, Schaeffer and Matthewson, to appear, among others).
Deictic Expression. Like a demonstrative, the definite article points to an object under the child's focus of attention (Karmiloff-Smith 1979)

- ***Lack of semantic knowledge?***

Maximality Trouble. Children's lexical entry for *the* has the presupposition of existence, but lacks the presupposition of "uniqueness" (maximality) (Wexler 2003) → *the* for the child essentially means *one of the*

LEXICAL ENTRIES FOR *THE* IN ADULT VS. CHILD ENGLISH:

Adults' Standard Lexical Entry for 'the' (from 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 x at i, and it is not P at i
- truth-valueless at an index i, if there isn't exactly one x at i

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

5. Research Questions

- **Consensus:** Both L1 and L2 learners overuse *the* in contexts where *a* is appropriate
- **Questions**: Are article errors in child L1-English and adult L2-English traceable to the same semantic factors?
  - **Does *partitivity* lead to *the* overuse in adult L2-English? (this talk)**
  - Does *specificity as speaker intent to refer* lead to *the* overuse in child L1-English? (a question for the future)

6. Hypothesis and Predictions

Hypothesis:
If partitivity is a universal semantic feature affecting acquisition of articles, then adult L2-English learners will overuse *the* in the context of *partitivity* (lack of the *maximality* presupposition), like child L1-English learners (cf. Wexler 2003).

Predictions:
Systematic overuse of *the* with indefinites in [+partitive] contexts and no overuse of *the* with indefinites in [-partitive] contexts (except where other factors such as *specificity* contribute to overuse of *the*).

7. Experiment: Methods

Subjects. 20 intermediate and advanced adult L1-Korean learners of English [proficiency measured by the Michigan test: 16 advanced, 4 intermediate L2-learners].
NB: The test was piloted on 6 native English speakers, who performed as expected.

Task. Forced Choice Test. The subjects were presented with English dialogues, and had 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.

NB. 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. We focus only on the forced choice test data. See the appendix for data from the fill-in-the-blank test; the main effect of partitivity was present in both test types, but there were some other differences, which require further investigation.

Stimuli. 80 dialogues in English; 10 contexts target *a*, 10 contexts target *the,* 4 tokens per context type. The items were arranged into two pseudo-random test orders, each of which was given to 10 subjects. We report the data from 10 indefinite contexts testing:

Partitivity*Scope [3*2 design]
Partitivity*Specificity [2*2 design]

NB: We do not report the data on definite contexts here. These included [±specific] definite contexts modeled after Ionin et al. (to appear), with some modifications, as well as fillers. The subjects successfully supplied *the* in most (non-filler) definite contexts, with higher *the* use on [+specific] (90%, 3.6/4) than on [-specific] definites (70%, 2.8/4).

8. Stimuli: Partitivity & Scope

Research questions

- **Does *partitivity* contribute to overuse of *the* in L2-English article choice?**
- Is *partitivity* an abstract semantic feature or a morphological reflex requiring a plural-marked DP in the previous discourse?
  - *Explicit partitive (four boys - a boy)*: both morphological and semantic indications of set membership
  - *Implicit partitive (orchestra - a musician)*: only semantic indication of set membership
- Does *partitivity* interact with other semantic properties, such as *scope*? If so, how?

NB: Previous studies of L2-acquisition (e.g., Huebner 1983, Thomas 1989) investigated the role of *scope* in L2-English article choice. While these studies used the term *specific reference,* the use of this term corresponded to *wide scope over any intensional/modal operators.* See Ionin et al. (to appear) for more discussion, and for evidence that *specificity as speaker intent to refer,* rather than wide scope, contributes to overuse of *the* in L2-English.

Stimuli (target article is underlined)

(4) **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 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!

(5) **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!

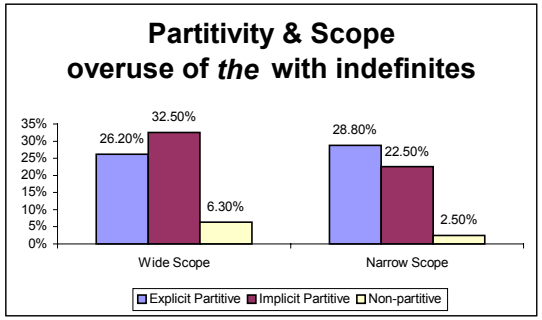
(6) **Wide Scope, *Non-Partitive*:**
Elissa: How is your nephew Joey doing? He is such a nice boy!
Robert: Well, he was a bit depressed the last few days. So, his parents decided to get him a pet. So last week, he went to our local pet shop.
Elissa: Oh, so did he buy some animal there?
Robert: No, he 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!

(7) **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.

(8) **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!

(9) **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!

9. Results: Overuse of *the* with *partitive* DPs



Context	Wide Scope: Mean (S.E.)	Narrow Scope: Mean (S.E.)
Explicit Partitive	1.05/4 (.23)	1.15/4(.21)
Implicit Partitive	1.30/4 (.16)	0.9/4 (.25)
Non-partitive	0.25/4(.12)	0.1/4 (.06)

Repeated Measures ANOVAs on *the* use:

•Omnibus F. [RM factor: partitivity & scope, RG factor: test order & proficiency]
Main effect of Partitivity [F(2,32)=13.397, ***p<.0001].
No significant interaction between Partitivity and Scope [F(2,32)=.137, p=.872].
Effects of proficiency approach marginal significance [F (1,16)=3.643, p=.074].

NB. 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 the narrow scope contexts (8%) was significantly higher than the omission rate in the wide scope contexts (2%) [F(1,16)=6.253, *p=.024]. We also found interactions between Scope*Proficiency [F(1,16)= 4.46, p<.051], and interactions between Scope*Partitivity*Test order [F(2,32)=5.54, p<.009]. We leave the interpretation of the results concerning article omission in L2-English for further investigation.

•Planned Comparisons.
Significantly more use of *the* in partitive contexts than in non-partitive contexts:
-explicit partitive vs. non-partitive [F(1,16) =23.2,***p<.0001]
-implicit partitive vs. non-partitive [F(1,16) =17.6,***p=.001]
No significant difference between explicit and implicit partitive contexts in use of *the* [F (1,16) = .588, p=.454].

10. Interim Summary and Follow-up Questions:

Summary: Partitivity affects overuse of *the* in L2-English, and is independent of Scope.

Follow-up Questions:
- How does the *partitivity* feature interact with the *specificity* feature in L2-English article choice?
- Are *partitivity* and *specificity* two expressions of the same semantic property?
- Or are they independent factors that contribute to overuse of *the* in L2- English?

11. Stimuli: Partitivity & Specificity

NB: All partitive contexts in this section were *implicit partitives.*

(10) **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**!

(11) **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!

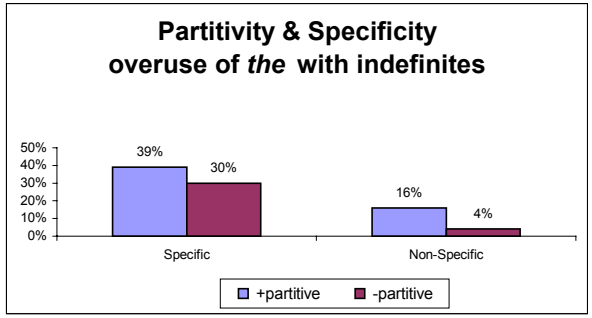
(12) **Non-partitive, Specific**

Jennifer: Hello, Helen? This is Jennifer!
Helen: Hi, Jennifer! It's wonderful to hear from you. I suppose you want to talk to my sister?
Jennifer: Yes, I haven't spoken to her in years! I'd like to talk to her now if possible.
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.

(13) **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: Really? 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.**

12. Results: Overuse of *the* with *partitive* and *specific* DPs



Context	Specific: Mean (S.E.)	Nonspecific: Mean (S.E.)
Partitive	1.55/4 (.33)	0.65/4 (.20)
Non-partitive	1.2/4 (.30)	0.15/4 (.08)

Repeated Measures ANOVAs on *the* use

•Omnibus F [RM factor: partitivity & specificity, RG factor: test order & proficiency]
Main Effects of Partitivity and Specificity:
-Significantly more use of *the* in partitive contexts than in non-partitive contexts [F(1,16)= 10.50,***p=.005].
-Significantly more use of *the* in specific contexts than in non-specific contexts [F(1,16)= 12.72, ***p=.003].
-No significant interaction between Partitivity and Specificity [F(1,16)=.17, p=.684].
-No other main effects (No significant effect of proficiency [F(1,16)=3.61, p=.223]).

NB. We also found significant interactions 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.

13. Discussion: New findings and Implications

- **Parallels between L1 and L2 acquisition: Maximality Trouble both in L2 and in L1 acquisition of articles.**

  Implication: adult L2-learners have full pragmatic knowledge (e.g., no egocentricity), so the results are more likely to be due to linguistic than to pragmatic factors

- ***Partitivity* contributes to overuse of *the* with indefinites in L2-English, independently of scope and specificity.**

  Implication: In addition to definiteness (common ground) and specificity (speaker intent to refer), L2-English article choice is influenced by partitivity → there are at least three independent semantic factors influencing L2-article choice

  [cf. Schaeffer and Matthewson, to appear, for the view that only common ground and speaker beliefs play a role in article choice].

- ***Partitivity* is a semantic property: there is no difference between explicit and implicit partitive DPs in L2-article errors.** (but see Appendix)

  Implication: overuse of 'the' in partitive contexts is due to a semantic feature, rather than to a reflex associated with plural morphology.

- **L2-learners' article choice is not random: almost no mistakes with indefinites in non-specific, non-partitive contexts!**

  Implication: L2-errors are not random, but reflect L2-speakers' access to universal semantic features: definiteness, specificity, and partitivity.

14. Discussion: Open Questions

- Are there exact parallels between the acquisition of articles in L2-acquisition and L1-acquisition?
  - Does *implicit partitivity* also trigger overuse of *the* in L1-acquisition of articles?
  - Does *specificity as speaker intent to refer* (cf. Ionin 2003) contribute to the overuse of *the* in child L1-English? (Possibly relevant findings on child L1-English: Schaeffer and Matthewson, to appear – but they give a pragmatic explanation to the results).

- Is the effect of partitivity universal in L2-acquisition, or does it only exist for L1-Korean learners of English?
  - Preliminary data from L1-Serbo-Croatian L2-English learners suggest that the partitivity effect is not limited to Korean speakers (Perovic, Ko, Ionin and Wexler, in progress)
  - Some evidence of *the* overuse in explicit partitive contexts for L1-Japanese L2-English learners (Kaneko 1996)

- What underlies the parallel between L1 and L2-errors of article usage? UG-access? General learning strategies? Default/unmarked parameter settings?

Appendix A.

Individual Data from the Forced Choice Test ([P] = partitive, [S] = specific)

Subject	[-P, +S]	[+P, +S]	[+P, -S]	[-P, -S]	Pattern
1	4	4	2	1	Mixed
2	0	2	1	1	Partitivity
3	1	3	1	0	Mixed
4	1	2	0	1	Specificity
5	0	1	0	0	Mixed
6	3	2	2	0	Mixed
7	2	2	1	0	Mixed
8	0	0	1	0	Partitivity
9	4	4	0	0	Specificity
10	0	0	0	0	Definiteness
11	1	0	0	0	Specificity
12	2	4	0	0	Specificity
13	2	0	0	0	Specificity
14	1	3	0	0	Specificity
15	0	1	0	0	Mixed
16	0	0	0	0	Definiteness
17	0	1	1	0	Partitivity
18	2	2	3	0	Mixed
19	1	0	1	0	Mixed
20	0	0	0	0	Definiteness

Individual Patterns:

- Definiteness Pattern
  [no errors]
- Specificity Pattern
  [%errors due to [+specific] – %errors due to [+partitive] ≥ 25%]
- Partitivity Pattern
  [-25% ≤ %errors due to [+specific] – %errors due to [+partitive]]
- Mixed-Pattern
  [-25%< %errors due to [+specific] – %errors due to [+partitive] <25%]

Appendix B. Fill-in-the-Blank Test

1. Test Format:

The same contexts as in the forced choice test with additional blanks for distracters

Example: Wide Scope, Explicit Partitive Context (cf. (4)):

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 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___ puppy. Aaron went home really happy!

2. Results

Subjects: 2 beginners, 6 intermediate, 12 advanced adult L1-Korean L2-English learners

NB: The test was piloted with 4 native English speakers, who performed as expected.

Results from 18 intermediate + advanced L2-English learners:

Partitivity & Scope

Context	Wide Scope: Mean (S.E.)	Narrow Scope: Mean (S.E.)
Explicit Partitive	0.39/4 (.13)	0.83/4(.21)
Implicit Partitive	1.50/4 (.32)	1.16/4 (.31)
Non-partitive	0.33/4(.14)	0.11/4 (.07)

Omnibus-F [RM factor: partitivity & scope, RG factor: test order & proficiency]
-significant main effect of partitivity: $F(2,28) = 14.205$, $p<.0001$
-effect of proficiency (approaching significance): $F(1,14)=4.527$, $p<.052$
-main effect of test order $F(1,14)=5.173$, $p<.039$
-no other main effects [no main effect of scope: $F(1,14)= .114$, $p<.740$]

Planned Comparisons
-explicit partitive vs. non-partitive: $F(1,14) = 17.608$, $p <.001$
-implicit partitive vs. non-partitive: $F(1,14) = 19.308$, $p <.001$
-explicit partitive vs. implicit partitive: $F(1,14) = 7.059$, $p<.019$
→ the higher use of *the* in implicit partitive contexts remains a puzzle for further investigation

Partitivity & Specificity

Context	Specific: Mean (S.E.)	Nonspecific: Mean (S.E.)
Partitive	0.44/4 (.16)	1.05/4 (.33)
Non-partitive	0.33/4 (.11)	0.27/4 (.22)

Omnibus-F [RM factor: partitivity & specificity, RG factor: test order & proficiency]
-significant main effect of partitivity: $F(1,14)=8.311$, $p<.012$ [also a planned comparison result]
→ significantly more overuse of *the* in partitive contexts than in non-partitive contexts
-no other main effects [no main effects of specificity: $F(1,14)=.396$, $p<.539$]
→ the lack of a specificity effect in this test format remains a puzzle for further investigation

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