L2 Acquisition of *any*: Negative Evidence, Negative Implicature and Negative L1 Transfer

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1. Introduction

This paper reports on two preliminary experimental investigations of second language (L2) knowledge of the English quantifier *any*. *Any* is a so-called 'polarity item', which means that its distribution is limited. It is barred from a number of environments, including progressive declaratives, such as (1) (see further details in Section 2, below).

(1) *Anyone is playing the piano.

In a previous study by Gil & Marsden (2010), intermediate/advanced-level Korean speaking learners of English tended to accept *any* in progressive declarative sentences like (1). However, two individuals in the group robustly rejected tokens such as (1). Gil and Marsden show the tendency to accept ungrammatical sentences like (1) may result from L1 transfer from Korean, and they demonstrate that acquisition of the restrictions on the distribution of *any* is a poverty of the stimulus problem in L1-Korean–L2-English interlanguage. The present investigations build on these proposals. We consider whether negative evidence could play a role in leading learners to overcome L2 poverty of the stimulus, and whether different L1s result in differential L2 behaviour with respect to knowledge of the restrictions on *any*. The paper is organised as follows. Section 2 details the relevant properties of *any* and sets out the present research questions; Section 3 provides a summary of Gil & Marsden (2010); Sections 4 and 5 detail our experiments on the roles of negative evidence and L1 transfer, respectively; Section 6 evaluates the findings in relation to the research questions and to a broader question of how second language acquisition (SLA) research and language pedagogy research might inform each other. Section 7 concludes.

2. Properties of *any*

The quantifier *any*, and its compounds *anyone, anything* etc., belong to a cross-linguistically broad and varied set of 'polarity sensitive' items (Klima, 1964). Polarity sensitive items have a distribution that is limited to a set of licensing environments. For example, *any* is grammatical in a negated sentence (2-a), but not in the affirmative equivalent (2-b).

(2) a. I didn't see anyone over there.
b. *I saw anyone over there.

Nonetheless, there are a number of affirmative contexts in which *any* is licensed. These include generic or habitual contexts, (3-a)–(3-b), interrogatives (4) and conditionals (5):

(3) a. Pigs eat anything.
b. Mary smiles at anyone.

(4) Is anyone playing the piano?

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(5) If anyone crosses the finish line, raise the flag.

By contrast, *any* is ungrammatical in progressive declaratives and episodics, as seen above in (1) and (2-b). What the grammatical environments for *any* (2-a) and (3-a)–(5) share, is that they do not correspond to actual events: they are all nonveridical. In short, *any* is licensed in nonveridical contexts and it is barred from veridical contexts (Giannakidou, 1997, 1998).[1] In terms of syntax, Giannakidou argues that nonveridical sentences contain a logico-syntactic operator that licenses *any*.

However, there are some exceptions to the above generalization. For example, *any* is grammatical following a noun modified by *only* (6), or in the complement clause of a semantically negative verb like *regret* (7). Both of these environments are veridical (and therefore could not contain a nonveridical licenser for *any*).

(6) Only Bill knew anything about the problem.
(cf. *Even Bill knew anything about the problem.)

(7) Lucy regretted that she had told anyone.
(cf. *Lucy thought/wished/expected that she had told anyone.)

One account of exceptions such as (6)–(7) is that they generate a negative implicature that licenses *any* (Giannakidou, 2006):

(8) Only Bill knew anything.
→ No-one but Bill knew anything.

(9) Lucy regretted that she had told anyone.
→ Lucy wished that she had told no-one.

Licensing by implicature (termed 'indirect licensing' by Giannakidou (1998), or 'rescuing' by Giannakidou (2006)) contrasts with the syntactic licensing proposed for (2-a) and (3-a)–(5). It involves additional pragmatic reasoning which triggers a negative inference (a conversational or conventional implicature), and it is by means of association with this negative inference that *any* becomes 'rescued' (i.e., licensed).

The present research investigates L2 knowledge of *any* in affirmative sentences such as those described above, in which *any* is licensed either in the syntax by nonveridicality, or by rescuing through negative implicature. Needless to say, full details of this range of licensing environments for *any* is not generally taught in English language classrooms. English language teaching materials usually instruct only that *any* is used with negation and in questions. Thus, our research questions are as follows:

(10) RESEARCH QUESTIONS
- a. Can L2 learners acquire the restrictions on the distribution of *any*?
- b. Does negative evidence, in the form of explicit instruction about where *any* is ungrammatical as well where it is grammatical, facilitate acquisition?
- c. Given the wide range of differences in the way that *any* is expressed cross-linguistically (relevant details to follow), is L1 transfer evident in L2 English knowledge of *any*?

As noted in the Introduction, work by Gil and Marsden (2010) provides some initial evidence of an affirmative answer to the first research question (10-a). This work is outlined in the following section.

3. Previous research: Gil and Marsden (2010)

Gil and Marsden (2010) conducted an experimental investigation of knowledge of the interpretation and distribution of *any* in English by Korean-speaking learners. Here, we will provide details relating just to knowledge of the distribution of *any*.

Twenty-two Korean-speaking learners participated in the study. Their English proficiency level was upper intermediate or advanced, as determined by the Oxford Quick Placement Task. The test instrument was an acceptability judgement task, in which participants rated the acceptability of sentences in the

[1] *Veridical* comes from the Latin *veritas*, meaning 'truth'; thus *nonveridical* means 'not truthful' in the sense of 'not corresponding to fact'.

context of pictures. Included in the task were five ungrammatical instances of *anyone* in a progressive declarative sentence, such as (11):

(11) *Anyone is eating a banana.

The key finding in relation to the present paper was that, in group terms, learners accepted ungrammatical tokens like (11), with a rate of >82% acceptance. However, two individuals among the 22 learners demonstrated consistent, native-like rejection of *anyone* in present progressives.

The source of the incorrect acceptance of *anyone* in progressive declaratives could be L1 transfer. In Korean, words corresponding to *any* are not restricted to nonveridical environments (Gill, 2004; Gill et al., 2007). Korean, like many languages including Dutch, Chinese, Japanese and Malayalam, forms indefinite quantifiers from wh-words. Thus the word *nwu(kwu)* means 'who' or 'anyone/someone'.[2] Examples (12-a)–(12-c) show that *nwu(kwu)* can occur in questions, conditionals, and—most pertinent to the L2 findings under discussion—progressive declaratives. In the question (12-a), *nwu(kwu)* is ambiguous: it can mean 'anyone' or 'who' depending on the intonation. In the conditional (12-b) *nwu(kwu)* has the sense of 'anyone'; and in the question (12-c), *nwu(kwu)* has the sense of 'someone'.

(12) a. Nwu-ka cha-lul masiko iss-nayo?
nwu-NOM tea-ACC drink PROG-Q
'Is anyone drinking tea?' / 'Who is drinking tea?'

b. Nwu-ka sen-ul nemu-myen, kispal-ul tul-era.
nwu-NOM line-ACC cross-COND flag-ACC raise-IMPER
'If anyone crosses the line, raise the flag'

c. Nwu-ka cha-lul masiko isseyo.
nwu-NOM tea-ACC drink PROG
'Someone (*anyone) is drinking tea'

Thus, if the L1 grammar, in which words corresponding to *any* are not polarity sensitive, transfers to the L2, then unrestricted use of *any* is predicted in the L2. This could explain why the majority of the Korean-speaking learners accepted ungrammatical tokens containing *anyone* in progressive declaratives.

The second key finding—that two Korean-speaking learners robustly rejected *anyone* in progressive declaratives—is less easy to propose an account for. As Gil and Marsden (2010) explain, acquisition of the distribution of *any* is an L2 poverty-of-the-stimulus problem for Korean-speaking learners. The restrictions on *any* are underdetermined by the learners' L1, by classroom instruction, and by the input (since the input does not provide evidence about what *cannot* occur). An intriguing feature of the biodata of these two learners is that each had experienced exceptional exposure to English compared with the others in the group. Specifically, one had the longest length of residence in an English-speaking country (10 years, compared with the group average of 3 years), while the other also had one of the longest lengths of residence (6 years) and had begun having English lessons from age 7 (compared with age 10 or above, in the other learners). Thus, these two learners may have been exposed to more enriched and prolonged L2 input than the other learners in the study. Returning to our research questions (see Section 2), we can tentatively conclude from the findings of Gil & Marsden (2010) that L2 acquisition of the restrictions on the distribution of *any* is possible subject to rich input, although it is clearly by no means widespread, at least among Korean-speaking learners.[3] The findings are also compatible with the view that L1 knowledge of indefinite quantifiers influences L2 knowledge, but until learners with different L1s are investigated, no conclusions can be drawn. Finally, the evidence of two learners apparently overcoming poverty of the stimulus and demonstrating knowledge of the restricted distribution of *any* calls for research into how such acquisition is achievable. In particular, provided the restricted distribution

[2]The syllable *-kwu* in *nwukwu* is dropped before the nominative particle *-ka* as shown in (12).

[3]To our knowledge, there is just one other study of L2 acquisition of the distribution of *any* in English. This is by Philip (2002), who investigates Dutch-speaking high school students who had been learning English at school for several years. In a grammaticality judgement task, he found the learners rejected examples of *any* following modals of necessity (e.g., **[The snake] must have eaten any egg*) at most 69% of the time, compared with the native English control group's rate of 85%. Phillip does not provide details of individual learners. The above-chance level of native-like rejection suggests at least some L2 knowledge of the restrictions on *any*.

of *any* is ultimately acquirable, would the development of grammatical competence with respect to *any* be accelerated by the provision of negative evidence on the property of *any*? The two new studies reported below address these issues.

4. Study 1: a preliminary investigation of the effect of negative evidence

4.1. Methodology

This study was a small-scale pre-test–instruction–post-test investigation along the lines of White (1991). The aim was to shed light on whether explicit teaching about the restrictions on the distribution of *any* can affect grammatical competence.

4.1.1. Test instrument

Data were collected in the pre-test and the post-test by means of a contextualised grammaticality judgement task (drawing on Whong (2005)). The test included 21 ungrammatical tokens containing *any*, 9 grammatical tokens containing *any*, and 28 distractors that did not contain *any*, as detailed in Table 1.

Table 1: Test types

31 Ungrammatical	**27 Grammatical**
any in progressive (6)	
any in episodic (6)	
any with adverb *even* (3)	*any* with adverb *only* (3)
any with non-negative verb (6)	*any* with semantically negative verb (6)
Distractor (excl. *any*) (10)	Distractors (excl. *any*) (18)

The test sentences were presented within the context of a number of stories. The procedure was as follows. Two or three sentences comprising part of a story were projected onto a screen at the front of the classroom (e.g., (13)). The story sentences were simultaneously presented aurally. Then the test sentence was presented visually only on the screen (e.g., (14)).

(13) When I married Larry last year, we planned a secret wedding, We didn't tell a soul.

(14) Only Larry and I knew anything.

The participants were given time to judge the test sentence on a four-point scale: +2 = 'I'm sure this is correct', +1 = 'I think this is correct', -1 = 'I think this is not correct', and -2 = 'I'm sure this is not correct'. A further option, 'Don't know or can't decide', was also available. Once judgements had been made, a new slide appeared with the next instalment of the story, followed by the next test sentence. (See Appendix for an example of a complete story.) Training examples were given prior to the actual test.

4.1.2. Participants and instruction schedule

The participants were 15 students enrolled in a 6-week pre-sessional English programme at a UK university. They had recently arrived in the UK, and their proficiency level was upper intermediate or advanced, as determined by recent IELTS scores of 6.0–7.5. The participants were divided between two groups, resulting in an experimental group (henceforth, the 'Any Group') with 10 participants (6 L1-Chinese speakers, 2 L1-Japanese, 1 L1-Korean and 1 L1-Thai) and a control group with 5 participants (4 L1-Chinese speakers, 1 L1-Swahili).[4]

The pre-test, instruction and post-test all took place during the 6 weeks of the programme the students were enrolled in, and they comprised a very minor part part of the whole programme. The pre-test (i.e., the first attempt at the judgement task described above) was administered in the first week of the programme.

[4]In fact, the Any Group and the control group comprised 31 students in total. However, for a variety of reasons beyond our control, only 15 individuals were present at both the pre-test and the post-test, therefore we focus on those 15 individuals here.

In Week 2, both groups were exposed to a text that contained lots of tokens of *any*. However, only the Any Group was provided with explicit instruction about the properties of *any*, including instruction about the environments in which *any* is ungrammatical. During Weeks 3–5 of the programme, both groups were encouraged to keep a 'Research Tips' list with entries of the form 'Anyone doing research should ...'. In addition, the Any Group, but not the control group, was exposed to continued explicit discussion of uses of *any*. Finally, in Week 6, the post-test (i.e., the second attempt at the grammaticality judgement task) was administered.

4.2. Findings

In analysing the results, ratings of -1 or -2 are taken to indicate rejection of a given token, and ratings of +1 or +2 are taken to indicate acceptance. Table 2 presents the results in terms of rates of target-like responses to the ungrammatical and grammatical test types containing *any*. This means that for the ungrammatical test types, rates of rejection are presented, while for grammatical test types, rates of acceptance are presented.

Table 2: Pre-test and post-test rates (%) of target-like responses

Group	**Ungrammatical**		**Grammatical**	
	Pre	Post	Pre	Post
Any	48.57	68.10	52.22	28.89
Control	66.66	90.48	46.30	22.22

An unexpected picture emerges from the data in Table 2. The performance of both the Any Group and the control group appears to improve between the pre-test and the post-test, in that both groups' rates of rejection of the ungrammatical tokens increases. However, both groups also appear to regress on the grammatical items: rates of acceptance of the grammatical tokens decrease from pre- to post-test.

4.3. Conclusions and next steps

Considering just the Any Group, it could be the case that instruction about the restrictions on *any* led to over-rejection, so that grammatical instances of *any* were also deemed unacceptable.[5] However, since the control group exhibited similar over-rejection in the post-test, it seems that, if anything, exposure to *any* in the teaching materials, rather than explicit instruction, made a difference to the learners' behaviour. At present, we do not have an account of the decreasing acceptance of grammatical instances of *any* (but see further discussion in Section 6.1).

The aim of this study was to discover whether explicit instruction would facilitate L2 acquisition of the distribution of *any*. Given the very small group sizes and the unexpected findings, we cannot draw conclusions about the role of negative evidence. However, we can make use of these findings to inform further study. First, the unexpected findings raise questions about the reliability of the test instrument. To investigate this, the test was run again with a native control group. The findings are reported in the next section. Second, the speculations about whether instruction about *any* could have led to over-rejection and about whether exposure to instances of *any* appearing in the programme materials could have impacted more greatly on the learners' behaviour than the explicit instruction, lead us to rethink what 'instruction' should entail in a study like this one.

5. Study 2: a preliminary investigation of the effect of L1 transfer

The aim of Study 2 was to investigate the effect of learners' L1 grammar on their L2 knowledge of *any*. The test instrument was the same as in Study 1. In order to test the reliability of the test instrument, we included a control group of 55 native English speakers in the present study. Twenty-four of them completed the task exactly as outlined in Section 4. The remaining 31 judged just the test sentences with

[5]Recall, however, that the explicit instruction included information about where *any* is grammatical as well as where it is ungrammatical.

no context. No statistical difference was found between the two versions of the task,[6] and the native speakers performed generally as expected, with >88% rejection of ungrammatical sentences containing *any* and >84% acceptance of grammatical sentences containing *any*. Although these native speaker acceptance/rejection rates of 84–88% clearly reveal some degree of noise, we take these findings to show that the test instrument adequately measures what it is intended to measure.

5.1. Methodology

Participants in Study 2 completed the grammaticality judgement task just once, and they did not receive any explicit or implicit instruction on *any* as part of the study. There were 52 L2 participants. All were enrolled in UK university programmes at the time of participation, and their English proficiency level was upper intermediate or advanced (based on IELTS scores of 6.0–7.5). Among the 52 learners were 11 L1-Chinese speakers and 15 L1-Arabic speakers.[7] We will focus on the data from these learners, and we will compare it with the data from the Korean-speaking learners in Gil & Marsden (2010).

5.2. 'Any' in Chinese and Arabic

In order to be able to identify any effect of the L1 in the learners' knowledge *any*, we must first describe how the sense of *any* is expressed in Chinese and Arabic. Unlike Korean (see Section 3), both Chinese and Arabic equivalents of *any* are restricted in their distribution, in a similar—but not identical—way to English. As mentioned above, Chinese uses wh-words as wh-indefinites. Judging from the work of Cheng (1994), Li (1992), Lin (1998) and others, these wh-indefinites seem to be strictly limited to nonveridical environments. Thus Chinese *shenme* 'anything/something' (or 'what') and *shei* 'anyone/someone' (or 'who'), like English *any(thing)/(one)*, are grammatical in interrogatives, conditionals, and other nonveridical environments, but are incompatible with episodics (15),[8] progressives (16) and with NPs modified by *even* (17). However, Chinese indefinite quantifiers cannot be rescued by negative implicature. Thus they are also ungrammatical after *only* (18) and in the complement clause of a semantically negative verb (19), unlike English *any*.

(15) *Ta kandao shenme.
He see what
'*He saw anything.' (Li (1992):133 (19a))

(16) ?Tamen zhang zai taolun shenme.
they right at discuss what
'*They are discussing anything.' (Li (1992): 152 fn. 13 (iii))

(17) *Jintian zaoshang lian Xiaoli kandao shei.
today morning even Xiaoli see who
'*Even Shiaoli saw anyone this morning.'

(18) *Jintian zaoshang zhiyou Xiaoli kandao shei.
today morning only Xiaoli see who
'Only Shiaoli saw anyone this morning.'

(19) *Wo houhui zuo shenme (shiqing).
I regret do what (thing)
'I regret having done something/anything.' (Li (1992): 129 (11a))

Turning to Arabic, it seems that *aiya* 'any' in Modern Standard Arabic is grammatical in the same contexts as *any*, at least as far as the sentence types in the present study are concerned. Thus *aiya* is incompatible with episodics (20), progressives (21) and with NPs modified by *even* (22), but grammatical following an

[6]The result of a repeated measures ANOVA was as follows, for the variable of 'with context v. without context': $F(1,53)=.12$, $p=.74$.

[7]The L1-Arabic speakers included eight speakers of Libyan Arabic and seven of Gulf Arabic. Potentially, this could lead to differential L1 influence. We abstract away from this issue in this preliminary investigation and collapse all of the Arabic speakers together.

[8]Note that example (15) is grammatical with the sense of 'What did he see?' if it has question intonation. However, without question intonation *shenme* cannot occur in an episodic environment.

NP modified by *only* (23) and in the complement of a semantically negative verb (24).[9]

(20) *Akal John aiya shai bil-ams.
Ate John any thing yesterday
'*John ate anything yesterday.'

(21) *Kana John yaqra-o aiya kitab-in bil-ams.
Was John reading-NOM any book-ACC yesterday
'*John was reading any book yesterday.'

(22) *Hatta John ra'a aiya ahad bil-ams.
Even John saw any one yesterday
'*Even John saw anyone yesterday.'

(23) Wahdaho John ra'a aiya ahad bil-ams.
Only John saw any one yesterday
'Only John saw anyone yesterday.'

(24) John nadam anna-ho akal aiya shay' bil-ams.
John regrets that-he ate any thing yesterday
'John regrets that he ate anything yesterday.'

In short, it seems that Chinese and Arabic differ from each other just with respect to 'any' following an NP modified by 'only' and with semantically negative verbs. In Chinese, the wh-indefinites that serve as 'any' are ungrammatical in these environments, but in Arabic *aiya* 'any' is grammatical. This leads to the following predictions about Chinese-speakers' and Arabic-speakers' performance on the sentence types in the current study, if their L2 performance is influenced by their L1:[10]

Table 3: Predicted responses by Arabic and Chinese speaking learners of English

Type	**Example**	**L1 Arabic**	**L1 Chinese**
Progressive	*Anyone is singing.	reject	reject
Episodic	*Anyone sang.	reject	reject
[*Even* N ... *any* ...]	*Even Sam saw anyone.	reject	reject
[*Only* N ... *any* ...]	Only Sam saw anyone.	accept	reject
Semantically negative V	Bill regretted that Sam saw anyone.	accept	reject

5.3. Findings

As in Study 1, rates of target-like responses were calculated. Table 4 presents the rates of target-like responses by each group for the different test types.

It is clear from Table 4 that both L1 groups tended to reject *any* in the environments where it is ungrammatical: episodics, progressive declaratives and after *even*. The rates of rejection are $>68\%$ in the Arabic-speaking group and $>81\%$ in the Chinese-speaking group. This rejection of ungrammatical items is in line with the predictions in Table 3 (although we leave for further research the question of why the L1-Chinese group had higher rates of rejection of the ungrammatical items than the L1-Arabic group). The learners' general rejection of ungrammatical *any* also contrasts with the incorrect acceptance of *any* in progressives by Korean-speaking learners in Gil & Marsden (2010), as predicted. However, in the environments where *any* is grammatical (with semantically negative verbs and *only*), the expected differential performance was not found. Both groups tended to reject these sentences, too, despite the

[9]These judgements about Arabic are based on our own discussions with native Arabic-speaking linguists. We acknowledge that judgements may differ between speakers of different regional varieties of Arabic.

[10]Note that the proposal that even upper intermediate and advanced level learners of English may still show effects of L1 transfer with respect to *any* is justifiable in light of previous research on the L2 acquisition of subtle phenomena at the syntax-semantics interface that provide evidence of L1 transfer effects even in advanced learners (e.g., Gabriele (2009); Marsden (2008, 2009)).

Table 4: Rates (%) of target-like responses

Type	L1 Arabic	L1 Chinese
*Progressive	68.9	90.9
*Episodic	68.9	81.8
**Even*	68.9	93.9†
Semantically negative V	48.9	33.3
Only	26.7	33.3

†= significantly different from L1 Arabic group ($p<.05$)

prediction that the Arabic-speakers would accept them. Examination of individual results further reveals that there was not one individual who consistently rejected all the ungrammatical tokens and accepted all the grammatical tokens (with 'consistency' being understood as at least 5 native-like responses out of 6 or 2 out of 3, depending on the test type (see Table 1)).

5.4. Discussion

Although the predicted L1-based difference between Chinese speakers and Arabic speakers was not found, the results of Study 2 may nonetheless provide evidence of L1 transfer, when they are considered in comparison with the findings in Gil & Marsden (2010). Recall that L1 transfer was put forward as an account for the Korean-speaking learners' overall acceptance of *any* in progressives. The fact that, by contrast, Arabic and Chinese speakers generally rejected *any* in progressives (albeit on a different test) lends support to the L1-transfer account of the Korean speakers' data, since this difference between Korean-speaking learners of English on the one hand and Arabic and Chinese-speaking learners on the other is precisely what L1 transfer would predict. In short, the comparison between Gil & Marsden (2010) and Study 2 provides evidence of L1 transfer when the distribution of *any* depends on syntactic mechanisms. However, the absence of a clear L1 transfer effect between the Chinese and Arabic groups in the cases of *any* with semantically negative verbs and *only* may suggest that L1 transfer is less prevalent when the distribution of *any* depends on lexical semantics (i.e., of the negative factive verbs and of *only*) and on the generation of negative implicatures. This finding lends support to Giannakidou's (1998, 2006) proposal about two modes of licensing of *any* (outlined in Section 2). The evidence of L1 transfer where *any* is argued to be directly licensed through the syntax, but of no L1 transfer where *any* is argued to be licensed indirectly through implicature licensing supports the view that two different modes of licensing are indeed at work.

A second noteworthy feature of the results of Study 2 is a general tendency (regardless of L1) to judge *any* ungrammatical in non-negated environments. This was also found in Study 1, particularly in the post-test. This tendency will be considered further in the following section.

6. Implications

Our research questions given in (10) are reiterated below:

(25) RESEARCH QUESTIONS

a. Can L2 learners acquire the restrictions on the distribution of *any*?
b. Does negative evidence, in the form of explicit instruction about where *any* is ungrammatical as well where it is grammatical, facilitate acquisition?
c. Is L1 transfer evident in L2 English knowledge of *any*?

In answer to (25-a), the overall picture so far continues to be that L2 knowledge of the restricted distribution of *any* is rare. None of the learners in Study 2 appeared to have knowledge of the full range of properties of *any* that our test investigated. Turning to the question of negative evidence (25-b), Study 1 found that learners' rates of rejection of *any* increased across the board—regardless of whether *any* occurred in a grammatical or ungrammatical environment, and regardless of whether the learners received

negative evidence or not—from the pre-test to the post-test. We discuss this further, below. Finally, with regard to L1 transfer (25-c), the results of Study 2 in conjunction with those of Gil & Marsden (2010) suggested a transfer effect with respect to syntactic licensing of *any* but no transfer effect with respect to licensing through negative implicature. Although these findings raise more questions than answers, we argue in this penultimate section that the findings and the questions they raise have implications for the language classroom and for future interdisciplinary research that engages both pedagogy-oriented and theoretical SLA research.

6.1. Implications for the classroom

There are three potential implications of our findings for the language classroom. First, the finding relating to L1 transfer, whereby transfer was evident in the domain of syntax but not in the domain of negative implicature could be exploited in classrooms where the learners share the same L1 (or there are a limited number of L1s). Specifically, Chinese-speaking and Arabic-speaking learners may only need instruction on *any* in contexts with a negative implicature, since Chinese and Arabic are like English in terms of syntactic licensing of *any*. By contrast, Korean-speaking learners would need instruction on a wider range of the properties of *any*, since equivalents of *any* in Korean are not subject to restriction in terms of syntax or negative implicature. Whether this difference between transfer effects in the syntax compared with negative implicature extends to phenomena other than *any* is an empirical question for further research.

The second implication is related to the first. Both Study 1 and Study 2 show that the most problematic property of *any* for L2 learners regardless of L1 is its licensing in affirmative contexts by means of negative implicature. Negative implicature is in the domain of pragmatics, where lexical items such as *only* and *regret* lead to certain negative entailments. The area of difficulty thus seems to be acquisition of the lexical property of *any* that allows it to be licensed in the context of negative implicature. This contrasts sharply with other licensing environments which can be structurally defined in the context of nonveridicality. Slabakova (2008) has recently identified lexical learning—in the sense of acquisition of the syntactic and semantic import of grammaticalised lexical items—as an area that presents difficulty to L2 learners and thus could benefit from explicit teaching, highlighting lexical learning at the interface between syntax and meaning. The present findings support this view, and specifically support an approach in which teaching lexical meaning should involve teaching (and practising) of the pragmatic and interpretive functions of lexical items, as well as their core meaning. In the cases of *only* and of semantically negative verbs, this would mean that instruction might usefully draw attention to the implicatures arising from these words.

Finally, the under-acceptance of *any* in affirmative sentences is worth consideration in the context of classroom instruction. It is conceivable that this under-acceptance could be due to learners' overgeneralisation of instruction received (outside the scope of our experiment, in the case of Study 2). As mentioned above, English language teaching materials tend to include instruction to the effect that *any* should be used with negation and in questions. This could lead learners to rule *any* out from other contexts, resulting in the under-acceptance of *any* that we found in the test types where *any* followed *only* or a semantically negative verb. Clearly, this is a hypothesis at present, which is subject to testing. If it is confirmed, this would suggest the need for better descriptive grammars, to help teachers be more aware of when apparent rules about the use of a given item are in fact generalisations that belie a number of exceptions.

6.2. Implications for research

Our paper began with a question about how two of the learners in Gil & Marsden (2010) could have acquired knowledge of the fact that *any* is ungrammatical in progressive declaratives, even though this is a poverty-of-the-stimulus problem for those learners. This question remains unanswered, beyond the already-noted observation that these two learners had had more exposure to English in an immersion environment than the others in Gil and Marsden's study. Regardless of the length and quality of exposure to the target language, the question of what within that exposure leads learners to overcome a poverty-of-the-stimulus problem is a general question in SLA research. How do learners acquire L2 phenomena for which there is no direct evidence? This question is directly related to a key question in language

pedagogy research, namely how can an L2 most effectively be taught or learnt? This reveals a common goal for SLA research and language pedagogy research in determining what role negative evidence plays (if any), in the development of L2 knowledge. We made a preliminary attempt towards answering this question in Study 1. The unexpected findings, whereby the control group (which did not receive explicit instruction about *any*) showed the same pattern of (non-target-like) development as the instructed group, lead us to question the content of the instruction provided. For example, did the instruction include enough reiteration of where *any* can and cannot occur? These thoughts lead us to propose that SLA researchers and language pedagogy researchers work together to develop a working definition of what actually counts as negative evidence, for future research into the role of negative evidence.

7. Conclusion

This paper has reported on two preliminary investigations into L2 acquisition of the properties of the English indefinite quantifier *any*. The findings confirmed that acquisition of the properties of *any* is far from easy for L2 learners. Although the results were inconclusive with regard to defining the roles of negative evidence and L1 transfer in the acquisition of *any*, the findings testify nonetheless to the utility of SLA research in teasing out areas of difficulty for L2 learners. Specifically, it was evident that it is more difficult for learners to acquire the licensing of *any* by negative implicature than by nonveridicality. We conclude with a call for collaboration between SLA researchers and language pedagogy researchers, as our findings point to an area of mutual concern.

The large and ever growing body of generative SLA research has begun to reveal generalisations about areas of language which are more readily acquired than others. Slabakova's Bottleneck Hypothesis, for instance, identifies lexical semantics as one area of difficulty for L2 learners (Slabakova 2008). The research reported here supports this finding and asks whether such properties can ever be mastered. While generative SLA has been content to limit itself to the question of acquisition, there is also the question of what can be explicitly learned. We note that there has been very little work on negative evidence among SLA researchers since White (1991). It is our view that generative SLA should go beyond questions of acquisition to engage with the questions of explicit learning (Whong, 2011). Moving in this direction, however, requires more research, beginning with an agreed upon definition of negative evidence both in terms of quality and quantity to determine what qualifies as negative evidence, and how much negative evidence is needed. Such an endeavour requires researchers in both SLA and language pedagogy; while the question of amount is empirical, the definition of negative evidence is dependent on constraints in the language classroom. Moreover, findings from studies on negative evidence could then translate into implications for researchers in language pedagogy to explore in the classroom. This would be beneficial not only to language learners, but would enable SLA researchers to gain a fuller picture of L2 development, and it would bring together two related fields that are not working in collaboration at present. In short, work on negative evidence, negative implicature and negative L1 transfer could lead to a positive result for researchers, teachers and learners alike.

8. Appendix: Example of test items contextualised within a story

When I married Larry last year, we planned a secret wedding, We didn't tell a soul.

1. Only Larry and I knew anything.

The day before the wedding, I went to work as usual. There were flowers on my desk and a card that said "Congratulations!". I was shocked. All day, people said "Congratulations!", including my boss. I was sure that Larry had shared our secret wedding plans!

2. Even my boss knew anything.

After work, when I saw Larry, I told him I was very, very angry. "What? What did I do?'" he asked. I told him about everyone saying "Congratulations!".

3. Larry thought he'd kept secret.

I was sure he hadn't. Then my phone rang. It was my friend Brenda. "Congratulations!", she said. "How did you know?" I asked. She said, "Didn't you get the email announcing your promotion?" "Promotion?!" I said. So that was it! "Thank you, Brenda. Thank you!"

4. I regretted that I'd been angry with Larry.

Larry forgave me, and we were married the next day. Afterwards, I told my friends at work. They had a little party for me.

5. Anyone brought a bottle of champagne.

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