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Age Effects on the Acquisition of Uninterpretable Features by Proficient Saudi Arabic Speakers of English[*]

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A recent account of fossilization in adult second language (L2) grammars is the 'Interpretability Hypothesis' (Hawkins & Hattori, 2006; Tsimpli & Dimitrakopoulou, 2007). It proposes that properties associated with uninterpretable features not already activated in the first language (L1) grammar will pose a learnability problem for older L2 speakers because they are inaccessible beyond a critical period (CP). The present study tests this hypothesis by examining the effect of age on the knowledge shown by proficient Saudi Arabic speakers of L2 English of two subtle linguistic properties associated with uninterpretable features: (i) the Gap Strategy in *wh*-interrogatives, and (ii) Reflexive Binding. While the former is differently instantiated in Arabic and English, the latter is similarly present in both languages. Using an acceptability preference task, results show that fossilization is selective, and is a reflex of L1–L2 grammatical differences. As predicted, the advanced adult starters showed a persistent L1 effect (de-learning problem) in the acquisition of the gap strategy in *wh*-interrogatives, but hardly had any problems with reflexive binding. Thus, it is argued that convincing evidence to refute a maturational account should be drawn from testing contrasting structures rather than similar ones. As for the child starters, while the high-advanced group showed native-like competence in all the tested constructions, the advanced group did not. Divergence in the child starters' L2 grammar might be the effect of other factors like proficiency.

1 INTRODUCTION

Selective fossilization in adult second language (L2) grammars of varied first language (L1) backgrounds is an appealing topic in L2 acquisition research. The 'Interpretability Hypothesis' (Hawkins & Hattori, 2006; Tsimpli & Dimitrakopoulou, 2007) is a recent account for this phenomenon. In this account, L1 and age effects are intertwined; fossilization is predictable on the basis of whether the target property is related to uninterpretable/interpretable features, and their status in L1 compared to L2. The locus of the learnability problem is in the narrow syntax; uninterpretable features are subject to maturation, and thus are candidates for persistent divergence in the grammars of L2 late starters if not already activated in their L1. Interpretable features, on the other hand, remain accessible throughout life, rendering them unproblematic for late starters even when not activated in their L1.

Tsimpli and Dimitrakopoulou (2007), Hawkins *et al.* (2007), and Hawkins and Hattori (2006) are very recent empirical studies that report on divergent representations where an L2 property is associated with uninterpretable features not activated in L1 grammar. In these studies, (highly) proficient post-critical period L2 learners of English were targeted. Tsimpli and Dimitrakopoulou examined intermediate and advanced L1 Greek speakers on their knowledge of acceptable gaps vs. unacceptable resumptives in English *wh*-interrogatives. Testing aspectual interpretation, Hawkins *et al.* looked at advanced L1 speakers of Chinese, Japanese, and a mixture of verb-raising languages. Hawkins and Hattori examined how multiple *wh*-questions are interpreted by highly proficient L1 Japanese. These studies together

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[*] I am greatly indebted to Roger Hawkins for his useful comments and suggestions. Needless to say any shortcomings are my responsibility.

suggest that a maturational account that integrates L1 transfer offers a principled understanding of selective fossilization in adult L2 acquisition.

Following up current work on the 'Interpretability Hypothesis', this study is carried out with (highly) proficient L1 Saudi Arabic-speakers of English. The aim of this paper is twofold: (i) to evaluate age effects by comparing the performance of two age groups (early and late starters), and (ii) to evaluate L1 effects by testing two properties where one is differently instantiated (resumptives vs. gaps), and the other is similarly established (reflexive binding) in L1 and L2. This is to argue that strong evidence to refute a maturational account should be based on contrasting properties rather than similar ones because success in the latter is confounded with positive transfer from the L1. The paper is organized as follows: section 2 reports in detail the empirical study and its findings. Section 3 discusses the results in light of the research questions, and section 4 concludes the argument.

2 THE CURRENT STUDY

Addressing the issue of selective fossilization, two subtle linguistic properties are considered where one is differently instantiated (i.e., gap vs. resumptives) in Saudi Arabic (henceforth, SA) and English, and the other is similarly established (i.e., reflexive binding). The rationale for this design is to argue that age effects are likely to appear with contrasting properties rather than similar ones. This is apparently due to age effects being confounded with L1 positive transfer, and thus, age effects are concealed. With contrasting structures, on the other hand, age effects are revealed through (persistent) divergence from natives' grammar due to L1 negative transfer. Evidence in both conditions suggests reliance on L1 grammar, but in the first condition it can be misleading when used to argue against maturational claims. In a recent critique of empirical research on age effects, Long (2005) strongly recommends testing typologically distant L1-L2 pairings. A maturational account is hence falsifiable if evidence drawn from parameterised structures show convergence on the natives' grammar. Comparing L2 speakers' knowledge of contrasting vs. similar properties could help in understanding the nature of the problem of fossilization.

Formation of *wh*-interrogatives is one parameterised aspect that distinguishes SA from English. While English employs the gap strategy exclusively (compare (1) with (2) where an asterisk indicates ungrammaticality throughout all examples), SA employs the resumptive strategy along with the gap strategy as two alternating options as in (3) and (4), respectively. According to Tsimpli and Dimitrakopoulou (2007), resumptive pronouns are overt realizations of [*u*Infl] features at Logical Form (LF).

(1)   **Who$_i$** do you think **Ø$_i$** will marry Susan?

(2)   **Who** do you think **(*he)** will marry Susan?

(3)   **Miin$_i$** ti-ħassb-i-**h$_i$**   raħ   yi-tzwaj   Susan?
       Who   2FS-think-you-he   will   3MS-marry   Susan
        'Who do you think he will marry Susan?'

(4)   **Miin$_i$** ti-ħassb-i   **Ø$_i$**   raħ   yi-tzwaj   Susan?
       Who   2FS-think-you   Ø   will   3MS-marry   Susan
        'Who do you think will marry Susan?'

Reflexive binding, on the other hand, is similarly instantiated in SA and English. In both languages, reflexives are morphologically complex, and thus, they must be locally bound as in

(5) and (6). According to Hicks (2005), locally bound reflexives encode [*u*Ref] that matches with an antecedent bearing an [*i*Ref].

(5) $_{TP}$[**Bill$_i$** said that $_{TP}$[**John$_j$** loves **himself$_{*i/j}$**]].

(6) $_{TP}$[**Bill$_i$** qal innu $_{TP}$[**John$_j$** yi-ħub **nafs-u$_{*i/j}$**]].
    Bill said that John 3MS-love self-him
    'Bill said that John loves himself.'

2.1 Research Questions

1. Will Saudi Arabic-speakers of different starting ages continue using resumptive pronouns along with gaps in English, or will they learn that only the gap strategy is applied?
2. Will Saudi Arabic-speakers of different starting ages realize that reflexives in English are similar to Arabic in that they must be locally bound?

If the 'Interpretability Hypothesis' holds true, resumptives will cause a de-learning problem for adult starters, and reflexive binding will be successfully acquired by both child and adult starters.

2.2 Tasks

A shortened version of Tsimpli and Dimitrakopoulou's (2007) acceptability preference test was used to evaluate tolerance of resumptive pronouns. The test consisted of subject/object *wh*-interrogatives, some of which are ungrammatical by virtue of having resumptive pronouns, and some are grammatical with gaps. From a list of 30 items, 20 items were selected for testing, and 6 distracters were added with 4 grammatical and 2 ungrammatical to achieve a balanced set of grammatical and ungrammatical items. The test-items fall in five categories with 4 tokens for each (see 7 & 8). The reliability coefficient of alpha obtained is (.71) for grammatical *wh*-interrogatives, and (.87) for ungrammatical items.

(7)   *Subject Extraction*
        (a) Which athlete does John think can win the Olympics?   (-that, -RP)
        (b) Which party does John think **(*it)** was very popular?   (-that, +RP)
        (c) Who have you suggested **(*that he)** should not resign?   (+that, +RP)

(8)   *Object Extraction*
        (a) Which parcel did you say that Mary sent yesterday? (+that, -RP)
        (b) What did you say that Maria forgot **(*it)** when she was leaving home? (+that, +RP)

Testing knowledge of reflexives' binding domain, White *et al'*s (1997) truth-value judgment task was adapted into the form of a story acceptability preference task. For each story, a reflexive is contrasted with a pronoun where possible readings are primed by context. Sentences were biclausal with finite and non-finite embedded clauses. For local antecedent readings, sentences with reflexives are appropriate, but ones with pronouns are inappropriate. The reverse pattern is given with non-local antecedent readings. There were three tokens for each condition. The test consisted of 12 stories and 4 story distracters. The reliability coefficient of alpha obtained is (.70) for appropriate continuations, and (.77) for inappropriate continuations. A sample story is given in (9) below.

(9)   Killer Harry was free again. Bill was very scared. Bill called a policeman so the policeman could guard him and make sure he was safe from Killer Harry.
   (a) *****Bill asked the policeman to protect **himself**.
   (b) Bill asked the policeman to protect **him**.

For both acceptability tasks, a 5-point rating scale (*completely impossible* -2 -1 0 +1 +2 *completely possible*) was adopted where the end-points of the scale express a robust acceptance or rejection, and (0) is taken to denote uncertainty.

2.3 Participants

A total of 25 (highly) proficient L2 Saudi Arabic-speakers of English formed the experimental group, in addition to 6 British English controls (henceforth, NS). The experimental participants were of high-advanced and advanced proficiency in English according to the Quick Oxford Placement Test (QOPT). Age at first significant immersion to English was applied as a criterion for qualifying to be part of the child starters group (*n*=14), and adult starters group (*n*=11). Based on L2 proficiency and age at first exposure (thereafter, AFE), the experimental group was divided into three subgroups as follows: (i) high-advanced child starters (henceforth, HA-Child) (*n*=8, mean AFE= 3.5 yrs), (ii) advanced child starters (henceforth, A-Child) (*n*=6, mean AFE=3.17 yrs), and (iii) advanced adult starters (henceforth, A-Adult) (*n*=11, mean AFE=17.5 yrs). The experimental participants were university undergraduates and graduates majoring in English Linguistics and Literature in Saudi Arabia at the time of testing. It is important to point out that the child starters had lived in an English-speaking country, whereas all the adult starters except for one had not. However, in this study, immersion in a foreign language country is assumed to be relatively comparable to that in an English-speaking country, especially when the participants are mainly English majors.

2.4 Results

The average ratings of acceptance and rejection obtained by the participants were submitted to a series of (1×4) between-group analysis of variance (ANOVA). Results of both tasks on resumptives and reflexives are presented in the following sections.

2.4.1   *Resumptives vs. Gaps in wh-interrogatives*
In Table 1, results show a significant group effect on rejection ratings of subject resumptive pronouns in both conditions where the complementizer is present and absent; a stronger significant effect is shown with the former condition.[1] With object resumptives, a trend for group effect approaches significance.
      In all three conditions, high-advanced and advanced child starters show stronger rejection ratings for resumptive pronouns than advanced adult starters. Most importantly, the latter group inaccurately accepted subject resumptives in *wh*-interrogatives with a complementizer (see Table 1). Results of *Tukey* post-hoc comparisons show that the ratings of advanced adult starters significantly lag behind that of high-advanced child starters on the one hand, *p*<.05, and natives, on the other, *p*<.01, in the case of subject *wh*-interrogatives with and without a complementizer. Also, it is found that the ratings of advanced child starters

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[1] This construction involves violation of two parameterised aspects: *that*-trace effect due to the Empty Category Principle (ECP), and use of subject resumptives.

significantly lag behind that of natives in the case of subject *wh*-interrogative with a complementizer, $p<.01$.

Tested Conditions	NS (*n*=6)	HA-Child (*n*=8)	A-Child (*n*=6)	A- Adult (*n*=11)	*df*	*F*
*Subj. RP (-that)	-1.75 (0.32)	-1.38 (0.88)	-0.71 (0.91)	-0.11 (1.08)	3.27	5.443**
*Subj. RP (+that)	-1.67 (0.54)	-1.13 (0.65)	-0.04 (0.60)	0.18 (1.00)	3.27	9.716***
*Obj. RP (+that)	-1.46 (0.64)	-1.41 (0.77)	-1.00 (0.63)	-0.59 (0.74)	3.27	2.8568

**$p<.01$, ***$p<.001$, $p=.056$. Arrows show sig. at $p<.05$ in the *Tukey* post-hoc tests.

Table 1

Rejection Mean Ratings of Ungrammatical *wh*-interrogatives (Resumptive Strategy)

Regarding the acceptance ratings on grammatical *wh*-interrogatives with gaps, ANOVA results yield no significant group effect with subject questions, but a significant effect with object questions. As shown in Table 2, with subject questions, the mean ratings obtained by all groups are fairly close. However, with object questions, advanced child and adult starters show the least acceptance ratings compared to high-advanced child starters and natives. *Dunnett*'s post-hoc comparisons yield a marginally non-significant difference between advanced adult starters and high-advanced child starters groups, $p=.056$, even though the mean difference is visually quite big. A significant difference is shown between the acceptance ratings of advanced adult starters and natives, $p<.05$. The advanced child starters gave the weakest acceptance ratings on grammatical object *wh*-questions which nevertheless does not reach statistical significance with any of the groups[2].

Tested Conditions	NS (*n*=6)	HA-Child (*n*=8)	A-Child (*n*=6)	A- Adult (*n*=11)	*df*	*F*
Subj. Gap (-that)	1.80 (0.33)	1.63 (0.38)	1.29 (0.56)	1.23 (0.69)	3.26	1.727
Obj. Gap (+that)	1.88 (0.14)	1.75 (0.27)	0.38 (1.16)	0.88 (0.85)	3.26	6.443**

**$p<.01$. Arrows show sig. at $p<.05$ in the *Dunnett* post-hoc tests.

Table 2

Acceptance Mean Ratings of Grammatical *wh*-interrogatives (Gap Strategy)

2.4.2 Reflexive Binding

Results yield no significant effect due to group, $p>.05$, in both clause types (finite/non-finite); all groups strongly rejected inappropriate interpretations with reflexives binding to non-local antecedents, and accepted appropriate interpretations where reflexives bind to local antecedents. Appropriate interpretations with pronouns binding to non-local antecedents were also strongly accepted in finite and non-finite clauses by all groups. As shown in Table 3, the average mean ratings of all Saudi Arabic groups regardless of starting age fall within the range of the natives.

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[2] This is possibly because the Standard Deviation (1.16) indicates a lot of variation among the six participants in this group. In such a condition, caution is required in interpreting the obtained Mean.

Tested Conditions	NS (*n*=6)	HA-Child (*n*=8)	A-Child (*n*=6)	A-Adult (*n*=11)	*df*	*F*
Binding Domain in Biclausal Finite Sentences						
Local subj/Ref	1.83 (0.41)	2.00 (0.00)	2.00 (0.00)	1.70 (0.48)	3.27	1.628
Local subj/*Pro	-1.89 (0.27)	-1.92 (0.24)	-1.89 (0.17)	-1.73 (0.49)	3.27	.586
Non-local subj/*Ref	-1.83 (0.41)	-1.92 (0.24)	-1.89 (0.17)	-1.85 (0.40)	3.27	.098
Non-local subj/Pro	1.80 (0.45)	1.96 (0.12)	2.00 (0.00)	1.76 (0.62)	3.26	.604
Binding Domain in Biclausal Non-Finite Sentences						
Local subj/Ref	2.00 (0.00)	1.83 (0.47)	1.89 (0.27)	1.45 (0.65)	3.27	2.181
Local subj/*Pro	-2.00 (0.00)	-1.92 (0.24)	-1.78 (0.34)	-1.67 (0.54)	3.27	1.252
Non-local subj/*Ref	-1.61 (0.80)	-1.92 (0.24)	-2.00 (0.00)	-1.52 (0.64)	3.27	1.535
Non-local subj/Pro	1.78 (0.54)	2.00 (0.00)	2.00 (0.00)	1.76 (0.42)	3.27	1.171

Table 3

Mean Ratings of Appropriate and Inappropriate Interpretations with Reflexives and Pronouns

3 DISCUSSION

The first question this paper tried to answer is whether Saudi Arabic-speakers of different starting ages will tolerate resumptives in English *wh*-interrogatives along with gaps. Recall that resumptives are overt realizations of uninterpretable features encoded in the Arabic L1 lexicon, but not part of the English L2 lexicon, and thus are predictable candidates for fossilization for adult L2 starters in a maturational account. To answer this question, two sets of data are considered: (i) rejection ratings of ungrammatical constructions with resumptives, and (ii) acceptance ratings of grammatical constructions with gaps. To start with rejection ratings, ungrammatical subject/object *wh*-interrogatives with resumptives are grammatically accepted in Arabic, and thus, they are taken as a measure of L1 effect. Low rejection ratings suggest divergence from the natives' grammar and reliance on L1, and high rejection ratings indicate convergence. As predicted, the advanced adult starters group showed the lowest rejection ratings for two ungrammatical constructions: subject *wh*-interrogatives (-that), and object *wh*-interrogatives (+that); they also inaccurately accepted ungrammatical subject *wh*-interrogatives (+that) (e.g., *who have you suggested (*that he) should not resign?*). The child starters groups, on the other hand, showed higher rejection ratings with the high advanced group outperforming the advanced group in all three tested constructions. As far as subject *wh*-interrogative (+that) constructions are concerned, the ratings of advanced L2 child and adult starters groups show divergence from the natives' grammar. While the latter group showed acceptance, the former revealed uncertainty in their judgments. Tentatively, I argue that since both groups showed an asymmetrical rating performance on such ungrammatical constructions, different types of ratings (positive vs. negative) - even if very low and close to not sure - should have stemmed from different underlying representations. Arabic, unlike English, resorts to the resumptive strategy to avoid ECP violations (Mohammad, 2000). Since the advanced L2 adult starters mean rating is positive (acceptance), it is possible that they are

analysing such constructions in light of their L1 grammar, suggesting a persistent L1 effect. In the face of that, the advanced child starters mean rating is negative (rejection), and thus, it is less likely to indicate reliance on L1 grammar. Such asymmetrical behaviour merits further investigation.

Turning to the acceptance ratings, subject/object *wh*-interrogatives with gaps are grammatical in Arabic and English. Therefore, these constructions should not be problematic for Saudi Arabic-speakers of any age group. However, a subject/object asymmetry is shown in the ratings of advanced adult starters, and advanced child starters only. This is based on their high acceptance ratings which are indistinguishable from that of natives on subject questions, and low acceptance ratings that lag behind natives on object questions. While subject questions are successfully acquired by Saudi Arabic-speakers of both age groups, object questions turn out to be problematic for the advanced adult group, and possibly the advanced child group. Caution, however, is warranted in interpreting the ratings of the latter group due to the high standard deviation obtained. Such asymmetrical performance is mysterious given that gaps alternate optionally with resumptives in Arabic grammar. This requires further investigation of the distribution of gaps and resumptives in subject and object questions. Assuming a persistent L1 effect, the low acceptance ratings of gaps in object questions possibly indicate that a resumptive pronoun is preferable over a gap in Arabic. However, this is a speculation and requires further testing.

The second question of this paper aimed at testing L1 positive transfer by evaluating how successful Saudi Arabic-speakers of different age groups will be in acquiring an L2 property like reflexive binding which is similarly instantiated in their L1 grammar. Recall that locally bound reflexives encode a [uRef], and since they are already encoded in L1, it will be easily acquired by both age groups. As predicted, all (highly) proficient Saudi Arabic-speaker groups regardless of starting age show knowledge that reflexives must be locally bound, whereas pronouns can be non-locally bound. They strongly rejected non-local antecedents to bind with reflexives. Their ratings are indistinguishable from that of natives. All groups realise the differences between reflexives and pronouns in terms of their binding domain restrictions.

Based on this, I argue that these findings are consistent with predictions of the 'Interpretability Hypothesis', and thus a maturational account, for two main reasons: (i) adult starters did not converge on native grammars in any of the tested constructions that encode parameterised uninterpretable features (resumptives), and (ii) adult starters did not outperform child starters in any of these constructions. The fact that advanced child starters did not show convergence on all tested constructions does not conflict with a maturational account. Long (2005:290), in this regard, argues that within a maturational account it is not assumed that early starters will definitely converge on native-like competence; but the claim is that early starters can converge, and late starters cannot converge. Therefore, evidence for late starters attaining native-like competence could falsify a maturational account. However, this leaves us with some open questions for further research: why is convergence not *inevitable* in the case of all L2 child starters? Since it is generally accepted that Universal Grammar (UG) constrains child language acquisition, what factors can lead to divergence in child L2 grammar? Is it proficiency or L1 dominance? To answer these questions fairly, there should have been a high-advanced adult starters group in the study sample to compare their performance with the high-advanced child starters and advanced adult starters groups, but this group was not feasibly available.

4 CONCLUSION

To conclude, fossilization is selective, and is a reflex of L1-L2 grammatical differences. For L2 adult starters, a persistent L1 effect is inevitable when the L1 property (resumptives) is

associated with uninterpretable features encoded in the L1 lexicon, but not in the L2. On the other hand, where an L2 property (reflexive binding) is associated with uninterpretable features encoded similarly in L1 and L2, it can be successfully acquired by all age groups. Based on this, evidence arguing against a maturational account should not be extracted from testing properties similarly instantiated in L1 and L2; they should rather be drawn from contrasting structures. Divergence in the L2 child starters' grammar is not typical as in the case of L2 adult starters; based on the study's findings, advanced L2 child starters can possibly show divergent properties, but not the very advanced ones.

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Pragmatic Inference in the Interpretation
of Sluiced Prepositional Phrases[*]

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An examination of sluiced prepositional phrases reveals sluices which cannot be interpreted via parallelism with an antecedent. To accommodate these, I propose that sluices are licensed by serving to question an inferred argument of a semantically compatible and salient antecedent. Both a corpus investigation and a grammaticality survey provide corroboration.

1 INTRODUCTION

An extensive body of literature devoted to *sluicing* has accrued since Ross (1969) first coined the term to describe a *Wh*-phrase functioning in lieu of a complete embedded question. Frequently discussed examples like (1a), in which a *Wh*-term alone comprises the sluice, contrast with ones involving a preposition like (1b), a sub-variety seldom considered.

(1) (a) Somebody just left – guess who.   (Ross 1969)
    (b) I actually got a book for a prize once but I can't remember what for![1]

Interpreting the embedded question corresponding to a sluice is contingent upon association with an antecedent clause. In (1a) the sluice is straightforwardly understood as *who left* which is semantically parallel to the proposition, *…somebody left,* conveyed by the antecedent VP. The same parallelism, however, does not hold in (1b). Substituting the antecedent proposition, *…I got a book*, predicts that the sluice is understood as *what I got a book for*, which is at odds with the most natural interpretation, *what the prize was for*.

    This critical distinction has far-reaching implications for prevailing accounts[2] that cannot accommodate examples like (1b) in which semantic parallelism with an antecedent does not hold. Nevertheless, sluices involving prepositions are relegated to the sidelines on the following considerations: 1) their most theoretically alluring aspect is word-order alternation[3] of the preposition and *Wh*-term; and 2) the inverted, *Wh*+prep, order constitutes a non-systematic variation involving only very few prepositions[4]. Culicover (1999) differentiates these word orders by using *sluice-stranding* for *Wh*-terms preceding prepositions versus *sluice-piedpiping* for prepositions followed by *Wh*-terms[5]. Whether or not it is displaced, the *Wh*-term is interpreted as the preposition's complement; thus the combination functions semantically as a prepositional phrase, regardless of word order. Viewing these as 2 variants of the same phenomenon, I adopt the more inclusive term *sluiced prepositional phrase* (SPP) except where *stranded* or *piedpiped* may be more perspicuous.

    This paper demonstrates the ill-founded nature of these views based on new empirical evidence for 1) stranded SPPs encompassing a broad degree of systematicity; and 2) SPPs with NP as opposed to VP antecedents constituting a significant and previously unrecognised sub-class. Counter-evidence to claims about SPPs is given in section 2 and the motivating

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[*] I am indebted to UCSD's semantics and compling groups for their valuable input. Any errors remain my own.
[1] http://www.ageconcern.org.uk/discuss/messageview.cfm?catid=8&threadid=2400&startpage=65
[2] *e.g.* Chung, Ladusaw and McCloskey (1995), and Merchant (1999).
[3] *cf* Riemsdijk (1978), Lobeck (1993), Culicover & Jackendoff (2005) and Merchant (2002).
[4] The position explicitly taken by Culicover (1999) and Culicover & Jackendoff (2005) *inter alia.*
[5] On analogy to *Wh*-movement of just the *Wh*-term or the entire PP to [Spec,CP] prior to IP deletion.

hypothesis discussed in section 3. A corpus investigation into the range of prepositions found in stranded SPPs is described in section 4. A supplemental survey of grammaticality judgments on a few prepositions not found in the primary investigation is detailed in section 5. The import of the corpus investigation and survey findings on understanding factors constraining pragmatic inference in interpreting SPPs is discussed in section 6.

2 SOME COUNTER-EVIDENCE TO CLAIMS ABOUT SPPS

No comprehensive investigation into the empirical extent of SPPs in English exists in the literature. Some claims exist about *stranded* SPPs specifically.[6] *Per* Culicover & Jackendoff (C&J) (2005), prepositions in stranded SPPs are limited to 10: *about, at, by, for, from, in, of, on, to,* and *with.* They further claim that: 1) 9 of these (all but *by*) combine with *what*; 2) 7 of these (all but *on, in* and *about*) combine with *who*; and 3) the only other combinations are *where to, where from* and *how much for.* Based on these claims, stranded SPPs are perceived as idiosyncratic and not derived from presumably more commonplace piedpiped SPPs.

Results of some cursory internet searching readily counter-exemplify these claims and at the very least suggest them to be too restrictive. The items in (2) show that some putatively non-existing combinations are in fact used by some speakers, *contra* C&J (2005).

(2) (a) I have wasted my pathetic little life and I can't remember who on.[7]
    (b) I have heard the phrase benign dictator - but I can't remember who about.[8]
    (c) Then we were stung but we weren't quite sure what by.[9]

Items in (3) show that stranded SPPs involve prepositions beyond those C&J (2005) report.

(3) (a) The style and intention of this site has changed, but I'm not sure what into yet.[10]
    (b) Main character, Sam, is obsessed and his daughter is named Lucy - I'm sure you can guess who after.[11]

Thus basic questions about the distribution of prepositions and *wh*-terms in SPPs are raised.

3 MOTIVATING HYPOTHESIS

Superficially, SPPs appear to be syntactic fragments semantically interpreted as full interrogative clauses. At the crux of the matter is how to account for the process or mechanism by which interpretation succeeds and correspondingly what is necessary and sufficient for SPPs to be grammatical. In (4) below the SPP is naturally interpreted as "who the presentation was by" derived from the proposition *...a presentation is by someone.* Yet this is not obviously parallel to the semantics of the antecedent clause, [REMEMBER(John, presentation)].

(4)   John remembers a presentation but does not remember who by.

I claim that the SPP in (4) is interpretable via a pragmatic inference process through which the antecedent NP, *presentation*, is associated with having a 'PRESENTER/AGENT' semantic

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[6] *c.f.* Merchant 2002, Culicover 1999 and Culicover & Jackendoff 2005
[7] http://www.xanga.com/home.aspx?user=La_Diabla
[8] http://www.saloon.javaranch.com/32/005028.html
[9] http://www.travelpod.com/cgi-bin/guest.pl?tweb_UID=liz_hawkins&tweb_tripID=lizzy_2003-2004&tweb_entryID=1070158920&tweb_PID=tpod
[10] http://www.coldframe.net/log/archives/0311.html
[11] http://www.beatlelinks.net/forums/archive/index.php/t-3436.html

argument being indirectly questioned. The relationship between the SPP and this inferred semantic argument underlies the interrogative semantics for the SPP represented in (5).

(5) $\Downarrow$who by$\lozenge^w$ = $\lambda p \exists x[\text{person}(x) \wedge p=\wedge[\text{BE-BY}(\text{presentation},x)]]$

The logic formula in (5) denotes the set of propositions comprising the answer space to the indirect question in (4), and where *who* translates into a variable *x* (restricted to being a person) which is semantically bound by an existential operator.

This approach also accounts for SPPs whose *wh*-term correlates with either an explicit or an implicit syntactic argument of an antecedent predicate as in (6).

(6) John might flirt at the dance, but I can't imagine who with.

The activity of flirting can have a 'goal' argument (*i.e.* the individual targeted by the flirter) which is grammaticalised as an object, and which for *flirt* is subcategorised to be expressed as a prepositional phrase headed by *with*. Based on the implicit object in (6) being a semantic argument of the VP, *John might flirt*, the SPP is interpreted as an indirect question with the semantics $\lambda p \exists x[\text{person}(x) \wedge p=\wedge[\text{FLIRT}(\text{John},x)]]$ [12] where FLIRT represents the activity of flirting and the identity of FLIRT's goal argument is being questioned.

The same characterisation of SPPs extends to other syntactic arguments or adjuncts for which a predicate may not be subcategorized, as illustrated in (7) below.

(7) Jack called, but I don't know where from.

While not grammaticalised in the same way as subjects or objects, 'location' is still a semantic argument of activities like calling that occur in space and time. Therefore the SPP in (7) is interpreted with the semantics $\lambda p \exists x[\text{place}(x) \wedge p=\wedge[\text{CALL\_FROM}(\text{Jack},x)]]$ where the calling activity's location is being indirectly questioned.

When viewed this way SPP interpretability is not contingent on parallelism with an antecedent clause, while at the same time it is not incompatible with this possibility. Furthermore, this characterisation provides a unified approach to analysing the full range of SPPs. Central to this pragmatic approach is the association between the SPP and an inferred semantic argument of the antecedent. SPP grammaticality is claimed to depend on two aspects of this association: 1) *semantic compatibility* between the antecedent and SPP preposition (*cf* section 6.1); and 2) the association being *sufficiently salient* (*cf* section 6.2). Results from a corpus investigation into stranded SPPs (*cf* section 4) and a grammaticality survey (*cf* section 5) provide insight into factors that determine semantic compatibility and salience for the purposes of SPP interpretation.

4 A CORPUS INVESTIGATION INTO STRANDED-SPPS

The SPP characterisation in section 3 constrains neither which prepositions occur in SPPs, nor the word order. Indeed this approach predicts that potentially any preposition can head a SPP as long as the antecedent clause has a semantically compatible and salient constituent. Apart from prosodic constraints, either word order is possible for any *meaningful* combination. This is necessarily qualified in two ways. The 'inverted' *Wh*+prep order is only attested for limited combinations involving other than monomorphemic *Wh*-terms[13]. Furthermore, not all *Wh*-terms meaningfully combine with all prepositions. Seemingly none combine with *why* or *how*

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[12] Modality is ignored here for the sake of simplicity.
[13] *e.g. how long/much for, how many to,* which Merchant (2002) ascribes to prosodic conditioning factors.

and a very limited number with *when* or *where*. Effectively, either word order is predicted to be possible in SPPs for any combination of a single-word preposition and *who* or *what*.

4.1 Stranded-SPP investigation: objective and limitations

To determine to what extent these predictions hold, a comprehensive effort was made to find stranded SPPs containing *who* or *what* for as many single-word prepositions as possible. Early testing revealed that corpora like *Brown, Wall Street Journal* or *British National Corpus* do contain stranded SPPs; however, generally ones with frequent prepositions. Thus searching the World-Wide Web was the only option. Google was used for its breadth across domain types and its application programming interface (API) which supports large-scale searching. Python code was used to filter out examples with sentence-final punctuation which is ignored by the Google engine. Google also limits API searches to the first 1000 matches. The *Oxford American Dictionary* online lists 55 single-word prepositions, of which 17 were excluded: 9 which are often not used as prepositions (*as, concerning, regarding, except, like, unlike, opposite, round* and *past*); 6 of the overall least frequent (*aboard, along, amid, among, despite,* and *par*); and 2 orthographic variants (*besides* and *toward*). Inability to restrict searches by part of speech combined with Google ignoring punctuation made including the first 9 too problematic, and the need to keep the project manageable excluded the remainder.

4.2 Stranded-SPP investigation: method

Extensive searches were executed using Perl scripts to communicate with the Google API directly. For each term 20 search strings were created. Half contained 10 predicates (*believe, clear, find out, forget, guess, know, recall, remember, say,* and *sure*) followed by *who* and a candidate preposition. The other half had the same predicates followed by *what* and the same preposition. These predicates can select clausal complements - the only valid context for sluicing. Including the predicates was necessary due to Google ignoring punctuation. Searching on a *wh*-term and preposition alone produced such vast results that within Google's 1000 hit limit there were likely no sluiced examples. Including the predicate greatly improved pinpointing stranded SPPs. On the downside, examples involving other predicates or forms of these predicates (*e.g.* past, gerund, *etc.*) were automatically excluded. Initial results were filtered to extract only examples with sentence-final punctuation, and then further manually examined to ensure that each item was actually a 'well-formed' stranded SPP.[14] Each result included the URL, in case it was necessary to examine the source.

4.3 Stranded-SPP investigation: results

The most striking and significant outcome is finding stranded SPPs containing 26 of the 38 candidate prepositions: roughly two-thirds, and 40% more than claimed by C&J (2005). This is clear evidence that stranded SPPs involve a much greater degree of systematicity than previously acknowledged. In addition to the 10 undisputed prepositions (*cf* section 2), the results newly document another 16 to occur in SPPs: *after, against, around, before, behind, between, into, off, out, over, since, through, towards, under, until,* and *up*. In total the investigation netted some 3000 well-formed sluices[15] which, when categorised by type of antecedent constituent, produced the following breakdown: 45% VP, 45% NP, and 10% AP.[16]

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[14] *i.e.* a complete sentence with an identifiable antecedent clause (not examples like *He didn't say with who.*)

[15] As of the publishing date, preparations were underway to post results at: http://www.ling.ucsd.edu/~hbeecher/

[16] The APs were exclusively adjectival phrases. Adverbs can be the target of a sluice as in *I'll be done soon, I just don't know how soon.* However, no such occurrences were found in connection with SPPs.

Nearly 2800 contained undisputed prepositions and the remainder contained newly attested ones. The results also reveal that prepositions in SPPs are predominately used in an abstract as opposed to a spatial manner, as the newfound examples in (8) illustrate.

(8) (a) We're on to the semi-finals, though I don't know who against.[17]
    (b) I cried yesterday, but I can't remember what over.[18]
    (c) She and I had met each other some years previously, I can't remember who through.[19]

The prepositions in (8) can be used to denote physical location in space (*e.g.* an awning *over* the window); however, no such spatial uses were found among the 10 most frequent prepositions and only in very few of the newly attested ones. Finally, the results lacked stranded SPPs for 12 candidates: *above, across, below, beneath, beside, beyond, down, during, inside, near, outside,* and *without*. Among the least frequent prepositions, these are also the most likely not to be found due to search method limitations. While it is uncertain whether these 12 do not or cannot occur in SPPs, the motivating hypothesis predicts that they could do so in a context that sufficiently strengthens their association with an antecedent.

5 A SUPPLEMENTAL GRAMMATICALITY SURVEY

This grammaticality survey was conducted specifically to probe whether strengthening the association of a sluiced preposition with its antecedent could result in native speakers judging as grammatically acceptable any SPP containing one of the 12 prepositions for which the investigation (*cf* section 4.3) lacked naturally occurring examples.

5.1 Survey design

Only stimuli with the more 'canonical' piedpiped SPPs were used, in order to avoid the possibility that it is merely the low frequency of the target prepositions reducing their acceptability in stranded SPPs. A 50/50 ratio of distractor to target stimuli was used. The 12 target prepositions were allotted 2 stimuli each to include both spatial and abstract uses. The 24 target stimuli, like that in (9), were constructed to give each preposition the best chances of being judged acceptable.

(9)   The evidence is buried but we have no idea beneath what.

Using *buried* in the antecedent clause provides the SPP containing *beneath* with an optimally supportive context thereby strengthening the association between the antecedent and the SPP. To match these target stimuli, another 24 were evenly divided into good and bad distractors. The 12 bad ones included 3 lacking SPPs. These intentionally mimicked the other stimuli in being complex (*i.e.* multi-clausal) with ungrammatical word orders such as inversion of subject and auxiliary in finite complements. The other 9 bad ones were sabotaged SPPs including ones that: sluiced the particle of verb-particle constructions (VPC); contained semantically incompatible (*i.e.* irrelevant) prepositions; or used predominantly abstract prepositions in low frequency spatial associations (*cf* section 6). The 12 good distractors also included 3 lacking SPPs corresponding to the same 3 bad ones except with the expected word order. The other 9 good ones contained an even mixture of VP, NP and AP antecedent constituents. All distractors with SPPs contained only the 10 most frequent, undisputed prepositions. The entire 48 stimuli set was randomised and counter-balanced across subjects.

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[17] http://www.wolfangel.calltherain.net/index.php?s=against&submit=ww
[18] http://www.altopiccolo.mindsay.com/
[19] http://www.hereinmyhead.com/artimp/cindy/interview.html

5.2 Survey Procedure: participants, task and evaluation

Participants. 50 students from 2 undergraduate linguistics and human development classes at the University of California, San Diego participated. Volunteers received additional course credit. All participants attested to being native English speakers by indicating English to be their sole native language, their primary language of instruction in elementary and high school, and among the languages they are most comfortable with.

Task. The survey cover sheet contained general directions and 4 practice items. Participants were asked to rate each of the 48 sentence stimuli for acceptability on a scale of 1-5 where 1 was completely unacceptable and 5 was perfectly fine. There was no preset time limit to finish the survey, although the directions encouraged participants to rely on their intuitions and not analyse the sentences.

Evaluation. Results were tallied by calculating the mean value of responses to each stimulus.

5.3 Survey Results

Out of the 12 target prepositions, 10 received a mean value of 3 or more for at least 1 of the 2 stimuli containing it; and for 3 (*above, inside* and *near*) both stimuli received a mean value of 3 or more. Only 2 prepositions received a mean value of less than 3: *during* and *without*. The stimuli included spatial versus abstract uses for 6 prepositions for which 3 received a mean value of less than 3, and the other 3 received a mean value at or above 3. Consequently no asymmetry along this dimension was observed. This is perhaps not unexpected given that these least frequent prepositions have almost exclusively spatial connotations[20]. Surprisingly, individuals rated some of the good distractor stimuli at 3 or below. Such native speaker judgments seem peculiar, especially as none of these good distractors received judgments of 4 or 5 across the board. A likely explanation lies in the decision to use only piedpiped SPPs. It is highly probable that participants were sensitive to SPP word order in these good distractors. All the same, most good distractors received a mean value of 4 or more, with *in who* receiving the lowest mean of 3.42. Thus none of the good distractors received a majority negative judgment. Prepositions *about* or *by* used in a spatial context were among the bad distractors and, as expected, received mean values of 2 or less. All in all, the results indicate SPPs with low frequency spatial prepositions in optimally supportive contexts can be judged grammatical despite not being found in the corpus investigation.

6 CONSTRAINING SPP INTERPRETATION: SEMANTIC COMPATIBILITY & SALIENCE

As described in section 4.3, the high percentages of both VP (45%) and NP (45%) antecedents is significant because NP antecedents typically give rise to SPPs for which interpretability is independent of parallelism with an antecedent clause. The prevalence of such cases contrasts starkly with their lack of treatment in the literature, although focusing on sluices which involve a *Wh*-term alone (as nearly all the literature does) is unlikely to detect these cases. Lack of parallelism with an antecedent clause also precludes constraining SPP interpretation by reconstructing any unpronounced (or elided) syntax. Instead, the hypothesis herein (*cf* section 3) proposes that the ability of SPPs (and by extension any sluice) to indirectly question an inferred semantic argument of an antecedent constituent is constrained by at least two factors: semantic compatibility and salience.

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[20] One exception is *promote over.*

6.1 Semantic Compatibility

Semantic compatibility exists when a meaningful lexical relationship holds between a sluiced preposition and an antecedent constituent. Examples (10a-b) illustrate how semantic compatibility serves to constrain the inference process underlying SPP interpretation.

(10) (a) The only thing I can come up with is contamination but I do not know what from.
　　 (b) *The only thing I can come up with is contamination but I do not know what about.

The SPP in (10a) is licit because *from* can be used in relation to SOURCE, a plausible semantic argument of the antecedent constituent *contamination*. In contrast, (10b) is illicit because *about* cannot be used in relation to any plausible semantic argument of *contamination*[21]. Thus, semantic compatibility holds between *contamination* and *from*, but not between *contamination* and *about*. Other semantic arguments related to *contamination* are INSTRUMENT and AGENT (or CAUSER), thereby making equally licit SPPs headed by *with* or *by*, respectively. Uttering (10a) in more contextually specific situations in which the contamination is understood to involve several target mediums (*e.g.* air, water or some test samples) can also make *in, of* or *to* licit.
　　　Given appropriate contextual and pragmatic conditions, semantic compatibility of these prepositions with *contamination* contrasts sharply with the unsuitability of other prepositions. The preposition *for* is associated with PURPOSE which is not a plausible semantic argument of *contamination*. Prepositions *on* and *at* have no abstract uses applicable to *contamination* and their licit use in a spatial sense requires a high degree of contextual support (*e.g.* the contamination suspected as being specifically on the surface of something). Prepositions beyond the 10 most frequent have increasingly spatial connotations and correspondingly fewer abstract ones; thus prepositions like *off, over, into, under,* etc. are unlikely to be semantically compatible in (10). However, one of these, *through¸* has the abstract connotation 'by means of' making it licit by association with INSTRUMENT. Thus semantic compatibility determines whether a particular preposition heading an SPP is appropriate for questioning a particular semantic argument of an antecedent constituent.

6.2 Salience

Salience is a direct function of the strength of association between the SPP and the semantic argument of the antecedent constituent being questioned. Precisely because such association is established via a contextually conditioned inference process, salience is necessarily a proportionate as opposed to an absolute constraint. Salience is also distinct from, and secondary to, semantic compatibility. The distinction is quite apparent with prepositions like *about* or *by* which are most frequently used in SPPs in an abstract way. In examples like *coins scattered about a gutter* or *horses passing by a barn* these prepositions have a spatial connotation and are arguably semantically compatible with *scattered* or *passing,* respectively. Yet despite this semantic compatibility, SPPs with either preposition and corresponding antecedent fail to be grammatical as shown in (11).

(11) (a) *He found coins scattered but didn't remember what about.
　　 (b) *He saw horses passing but didn't know what by.

At issue is not lack of semantic compatibility but rather insufficient salience. The grammaticality survey results indicate that, given an elaborate enough context, SPPs with

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[21] *Contamination* has no association with being 'about' something in the way a noun like *agreement* does.

about or *by* could retain spatial associations to *scatter* or *pass* if the salience is sufficiently strengthened.

The results of the investigation and survey also indicate that salience is affected by several factors including: the availability of abstract use(s) for a preposition; the relative frequency of individual prepositions; and the comparative frequency of constituent-preposition pairs. For the 10 most frequent prepositions, the investigation yielded a conspicuous lack of examples in which the SPP's association to its antecedent constituent was of a purely spatial nature. Such examples were quite limited among the additional 16 prepositions as well. These facts corroborate that, for discourse purposes, the typically more salient properties of entities and events are those for which prepositions have been grammaticalised (*e.g.* for encoding thematic roles), conventionalised (*e.g.* for indicating topic, theme, focus, etc.) or otherwise idiosyncratically linked to a predicate (*e.g.* register under). These specialised associations considerably strengthen abstract features of antecedents in comparison to spatial characteristics which, by being perhaps so unremarkable, are essentially indistinct with the background. Consequently abstract preposition use is predominant in SPPs. Nevertheless, as the grammaticality survey indicates, SPPs with non-abstract connotations are judged grammatical given a context which makes a spatial aspect of an antecedent prominent.

7 CONCLUSION

Both the evidence for stranded-SPP systematicity and the viability of SPPs with spatial prepositions provide corroboration that interpretation crucially relies on SPPs functioning to question a pragmatically inferred semantic argument of an antecedent. Furthermore, this approach accommodates SPPs with NP antecedents, a previously unrecognised sub-class not amenable to prevailing accounts of sluicing.

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Controlled Language through the Definitions of Coastal Terms in English[*]

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Controlled languages are specially defined subsets of natural language which help to create clear and concise documents, and thus insure coherent communication. In this paper we approach controlled language through the definitions of specialized terms with a view to establishing a metalanguage for the basic format of definitions. Our research focuses on a corpus of specialized terms related to tides, extracted from the *Glossary of Coastal Terminology* elaborated by the NOAA Coastal Services Center.

The methodology used for elaborating controlled-language definitions is based on the Functional-Lexematic Model (FLM) (Martín Mingorance 1984, 1989, 1995; Faber and Mairal 1999). The conceptual structure of a domain is made explicit within definitions that are coherent in both their micro and macrostructure (Faber and Tercedor Sánchez 2001). The linguistic description of any specialized concepts should do the following: (1) make category membership explicit; (2) reflect its relations with other concepts within the same category; (3) specify its essential attributes and features (Faber *et al*., 2005).

Our results show that the use of controlled language in the definition of terms makes their conceptual description more coherent and systematic. Controlled language increases terminological consistency, facilitates standardization, simplifies syntax, and avoids semantic ambiguities.

1 INTRODUCTION

Controlled language is a specially simplified version of a language which is typically adopted by a company or by the documentation section of a company. Both vocabulary and syntax may be restricted. A controlled language attempts to reduce ambiguities, colloquialisms and synonyms (AECMA 1995). This is an approach which is particularly valid in certain environments when it comes to the preparation of technical documents for better translatability or easier computer processing. Nowadays, the best known controlled language is AECMA Simplified English of the aerospace industry (AECMA 1995). Texts written in controlled language are optimized for machine translation, CAT (Computer-Assisted Translation), or other forms of NLP (Natural Language Processing).

In this paper we approach controlled language through the definitions of specialized terms with a view to establishing a metalanguage for the basic format of definitions. Our research focuses on a corpus of specialized terms related to tides extracted from the Glossary of Coastal Terminology elaborated by the NOAA Coastal Services Center.

The initial section of this article gives a general overview of the advantages and disadvantages of using CL. Section two focuses on the methodology used for elaborating controlled-language definitions, which is based on the Functional-Lexematic Model (FLM) (Martín Mingorance 1984, 1989, 1995; Faber and Mairal 1999). We then explain what a linguistic description of specialized concepts should accomplish. To achieve our purpose, we analyze the nuclear part of each definition or *genus* and the adverbial modification of *differentiae* in order to establish the conceptual relationships that can be extracted from the textual information in the form of concordances. Section three gives some examples of controlled definitions. The last section includes a conclusion with the results of our study.

2   ADVANTAGES AND DISADVANTAGES OF CL

Controlled language (CL) has been created with the aim of enhancing the readability of texts and improving their comprehensibility and translatability. The main advantages of this type of languages are univocity, consistency, accuracy and readability. It also should be underlined that CL is not artificial, but rather a subsystem of natural languages that pursues a restriction of vocabulary and grammar (AECMA 1995).The international projection of CL makes a text easier to understand and also to translate into another language. It also avoids any ambiguity and simplifies the complexity of natural languages, which allows non-native speakers to understand texts clearly. Thanks to CL, the processing of natural language is also more efficient and reliable. Therefore, controlled language tools are a solution for developing and enhancing international communication since they provide an advanced solution for transferring an idea from one language to another. It should also be highlighted that the use of CL in the definition of terms makes their conceptual description more coherent and systematic. CL increases terminological consistency and standardization, simplifies syntax and avoids semantic ambiguities (Jiménez Hurtado and Seibel, 2004).

Nevertheless, we should also point out that there are some controversial aspects regarding CL. First of all, it is true that CLs cannot be applied to all fields, since they were mostly created for limited domains. There is also a fear that CL structures may at some point become standard patterns, and cause speakers to lose their command of emotional and subjective language. This possible lack of quality in CL is partly because many CLs target specialized language texts with solely an informative function, and those who produce these texts are experts in the field, who naturally have this same agenda.

It is also true that syntactic rules differ substantially from language to language. Thus, it may be difficult to find CL structures which are candidates for interlinguistic correspondence. Evidently, not all structures can be easily controlled, due to grammatical restrictions.

Janowski (1998:1) mentions some of the risks and side effects of CL. According to this author, a compromise should be made between our objectives and the need for intelligibility, repeatability, low cost, balanced against potential risks, high error rate and probable rejection by target groups like private or professional product users- always being aware of the danger of excessive simplification and the deprivation of everyday colloquial language (1998:1).

3   THE FUNCTIONAL-LEXEMATIC MODEL

The elaboration of controlled-language definitions in this paper is based on the Functional-Lexematic Model (FLM) (Martín Mingorance 1984, 1989, 1995; Faber and Mairal 1999). This model facilitates the representation of conceptual relationships and collocations in general and specialized language (Faber, López Rodríguez and Tercedor Sánchez 2001). It

envisions a lexicon structured onomasiologically in terms of areas of meaning or lexical domains (Faber, Tercedor Sánchez 2001). The FLM proposes a lexical organization mainly based on the distinction between paradigmatic and syntagmatic relationships.

The paradigmatic axis of the FLM arranges concepts onomasiologically in a hierarchy of domains and subdomains. In other words, lexical subdomains are defined in terms of the nuclear part of conceptual descriptions or meaning definitions. This approach underlines conceptual areas, and is based on the assumption that each member of a certain lexical domain shares certain properties or meaning parameters with the other terms, but at the same time has other distinctive characteristics that differentiate it from other terms in the same domain. This type of onomasiological or conceptual organization has many advantages, not the least of which is its similarity to the organization of our mental lexicon (Faber and Mairal 1999).

As previously mentioned, the syntagmatic axis focuses on the combinatorial potential of lexical items, which is greater or lesser depending on the position of the item on the paradigmatic axis. Therefore, the combination of both axes represents the foundation of this conceptual structure. Both are complementary and inseparable in the description of meaning.

The FLM is a linguistic way of organizing concepts, using the information provided by specialists in the form of well-structured terminographic definitions (Faber and Tercedor, 2001).

4   DEFINING SPECIALIZED CONCEPTS

Defining a specialized language concept and all the terms associated with such a definition involves the following: (i) reproducing the basic information within such a concept as well as the information transmitted when this concept is activated within a text; (ii) establishing the difference between this concept and other concepts (Jiménez Hurtado and Seibel, 2005).

According to Faber et al., (2006), definitions can be regarded as mini-knowledge representations. Such a knowledge representation (KR) requires a metalanguage of definition for each category, which can be used to describe all of the concepts within that particular conceptual area. Such a metalanguage can be based on natural language and, when it is elaborated in principled way, can become a highly controlled language. (Jiménez Hurtado and Seibel, 2005).

The linguistic description of any concept should accomplish the following: (1) make category membership explicit; (2) reflect its relations with other concepts within the same category; (3) specify its essential attributes and features (Faber et al., 2005).

We have created a controlled language on the basis of information extracted from specialized dictionaries as well as a large electronic corpus of specialized texts on coastal engineering. Parameters of organization of this corpus of texts are: (i) level of specialization; (ii) group of target readers. The controlled language described in this article is of specialized texts written by experts and aimed at experts. The language used in the elaboration of terminographic definitions is natural language extracted from the corpus.

In a definition there are two major parts, the *genus* or nuclear part (which is indicative of the IS-A relationship) and the adverbial modification or *differentiae* that provides the characteristics that distinguish one concept from another within the same category (Faber et al., 2005).

4.1   Defining *tide*

Figure (1) shows the words which occur in the neighbourhood of our search word, namely *tide*. The study of these collocates helps us to find the meaning and usage of *tide*. As can be

seen, *high, low, ebb, equilibrium, flood, diurnal, wave, internal, mid, sea, spring* or *red* are the words which collocate most frequently with our search word. The occurrence of very common words like *the* and *and* does not offer significant information.
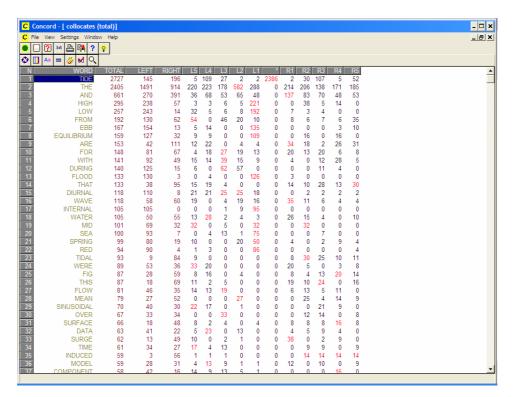

N	WORD	TOTAL	LEFT	RIGHT	L5	L4	L3	L2	L1	*	R1	R2	R3	R4	R5
1	TIDE	2727	145	196	5	109	27	2	2	2386	2	30	107	5	52
2	THE	2405	1491	914	220	223	178	582	288	0	214	206	138	171	185
3	AND	661	270	391	36	68	53	65	48	0	137	83	70	48	53
4	HIGH	295	238	57	3	3	6	5	221	0	0	38	5	14	0
5	LOW	257	243	14	32	5	6	8	192	0	7	3	4	0	0
6	FROM	192	130	62	54	0	46	20	10	0	8	6	7	6	35
7	EBB	167	154	13	5	14	0	0	135	0	0	0	0	3	10
8	EQUILIBRIUM	159	127	32	9	9	0	0	109	0	0	16	0	16	0
9	ARE	153	42	111	12	22	0	4	4	0	34	18	2	26	31
10	FOR	148	81	67	4	18	27	19	13	0	20	13	20	6	8
11	WITH	141	92	49	15	14	39	15	9	0	4	0	12	28	5
12	DURING	140	125	15	6	0	62	57	0	0	0	0	11	4	0
13	FLOOD	133	130	3	0	4	0	0	126	0	3	0	0	0	0
14	THAT	133	38	95	15	19	4	0	0	0	14	10	28	13	30
15	DIURNAL	118	110	8	21	21	25	25	18	0	0	2	2	2	2
16	WAVE	118	58	60	19	0	4	19	16	0	35	11	6	4	4
17	INTERNAL	105	105	0	0	0	1	9	95	0	0	0	0	0	0
18	WATER	105	50	55	13	28	2	4	3	0	26	15	4	0	10
19	MID	101	69	32	32	0	5	0	32	0	0	32	0	0	0
20	SEA	100	93	7	0	4	13	1	75	0	0	0	7	0	0
21	SPRING	99	80	19	10	0	0	20	50	0	4	0	2	9	4
22	RED	94	90	4	1	3	0	0	86	0	0	0	0	0	4
23	TIDAL	93	9	84	9	0	0	0	0	0	8	30	25	10	11
24	WERE	89	53	36	33	20	0	0	0	0	20	5	0	3	8
25	FIG	87	28	59	8	16	0	4	0	0	8	4	13	20	14
26	THIS	87	18	69	11	2	5	0	0	0	19	10	24	0	16
27	FLOW	81	46	35	14	13	19	0	0	0	6	13	5	11	0
28	MEAN	79	27	52	0	0	0	27	0	0	0	25	4	14	9
29	SINUSOIDAL	70	40	30	22	17	0	1	0	0	0	0	21	9	0
30	OVER	67	33	34	0	0	33	0	0	0	0	12	14	0	8
31	SURFACE	66	18	48	8	2	4	0	4	0	8	8	8	16	8
32	DATA	63	41	22	5	23	0	13	0	0	4	5	9	4	0
33	SURGE	62	13	49	10	0	2	1	0	0	38	0	2	9	0
34	TIME	61	34	27	17	4	13	0	0	0	0	9	9	0	9
35	INDUCED	59	3	56	1	1	1	0	0	0	0	14	14	14	14
36	MODEL	59	28	31	4	13	9	1	1	0	12	0	10	0	9
37	COMPONENT	58	42	16	14	9	13	5	1	0	0	0	0	16	0

Figure 1

Collocations which appear with tide

Tide appears a total of 2727 times in our corpus. This figure allows us to study a great many concordances, with a view to establishing its definition. A concordance is an example of a given word or phrase, which shows its context and combinatory potential. Examples of concordances of *tide* are the following:

Representative concordances of *tide* extracted from the corpus[1]

(1) **Tides** are **caused by** slight **variations in gravitational attraction between the Earth and the moon and the sun** in geometric relationship with **locations on the Earth's surface. Tides** are **periodic** primarily **because of** the cyclical influence of the **Earth's rotation.**

(2) **Tides** are the **periodic rise and fall of the** ocean **waters**. They are **caused by** the **gravitational pulls of the Moon** and (to a lesser extent) **Sun**, as well as the **rotation of the Earth**.

(3) Maximum values were observed on the **rising and falling** with a minimum at high tide

(4) **The gravitational forces of the moon and sun** provide the driving forces of the ocean tides

(5) The **moon** produces two tidal bulges somewhere on the **Earth** through the **effects of gravitational attraction.**

We have highlighted in red the words or phrases which show a clear relation with *tide,* in order to extract the conceptual and terminological information which we would need for our definition. Once the conceptual and terminological information was extracted, the next step was to abstract a schema or template which, according to the concordances, encodes the definitional structure for all of the concepts belonging to this domain. The definitional template for *tide* the following:

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[1] The corpus was elaborated as part of the PuertoTerm research project, funded by the Ministry of Education in Spain. It has a total of 4,435,525 words. The concordances have been studied with the Wordsmith Tools.

Tide	
IS_A	rise and fall of water
CAUSED_BY	gravitational attraction of the moon and sun
AFFECTS	rotating Earth
HAS_TIME	periodic

Table 1

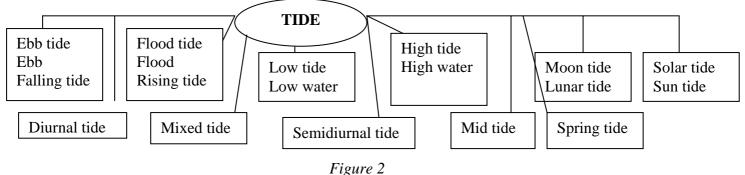*Definitional structure of tide*

Table 1 shows that *tide* can be characterized by four types of conceptual relations: IS_A, CAUSED_BY, AFFECTS, and HAS_TIME. *Tide* would this be defined by the phrases that designate these relations, and would be defined as follows: *periodic rise and fall of water caused by the gravitational attraction of the moon and sun, which affects the rotating Earth.*

The next set of concordances provides information relating to different types of *tides:*

Concordances of types of tide extracted from the corpus

(1) Maximum values were observed on the rising and **falling tides** with a minimum at high tide.
(2) Observations from the **ebb tide** of Aug. 26 provided the clearest examples of the initial steps of flow development.
(3) Pressure, permeability and sediment transport effects likely caused the trends in backwash friction values over the **high tide** cycle.
(4) Unsaturated flow is caused by gradients arising due to adjacent areas of **high and low water** content.
(5) Due to the geometry of the channel, the observed sill flow during **flood tide** is more complicated.
(6) The **rising tide** generates flood currents.
(7) A **semi-diurnal tide** is typical of the coastal waters.
(8) Cyclical tidal cycles associated with a **diurnal tide.**
(9) The height of the average **solar tide** is about 50% the average **lunar tide**.
(10)   Caused by the nearly coincident new **moon tide**.

From the study of the concordances of our corpus, we obtained the following types of *tides*. Those terms in the same square designate the same concept.

Figure 2

Types of tides

Table 2 shows how these terms can be categorized in terms of meaning parameters (water movement, water height, attractive force), and in terms of their respective degree of specialization.

WATER MOVEMENT		WATER HEIGHT		ATTRACTIVE FORCE	
Non-specialized receptor					
ebb tide	flood tide	low tide	high tide	moon tide	solar tide
Specialized receptor					
ebb falling tide [syn.]	flood rising tide [syn.]	low water	high water	lunar tide	sun tide

Table 2

Categorization of terms

Table 3 shows how our definitional template can be applied to the specific types of tide in order to establish their respective definitions. In those cases where one concept is designated by more than one term, the main term appears first in bold letters, followed by the synonyms in italics. We then apply the definitional template for *tide* to each concept. This means that the linguistic information for each of the more specific types of *tide* is proposed with a view to creating a uniform structure and a controlled definition for each concept. When necessary, within the conceptual relation, *HAS_TIME,* we have made the distinction between *phases* and *frequency. Default value* signifies that such a conceptual relation evokes the same concept activated in *tide.* We also point out when a specific conceptual relation is not activated within a concept. The analysis of the characteristics lexicalized in *differentiae* provides the defining features of the different types of *tides.*

TIDE

Rising tide (*flood tide, flood*)	
IS_A	tide
CAUSED_BY	[default value]
AFFECTS	[default value]
HAS_TIME	between low water and the following high water

Ebb Tide (*falling tide, ebb*)	
IS_A	tide
CAUSED_BY	[default value]
AFFECTS	[default value]
HAS_TIME	Between high water and the following low water

Moon tide (*lunar tide*)	
IS_A	tide
CAUSED_BY	direct attraction to the moon
AFFECTS	[default value]
HAS_TIME	[not activated]

Solar tide (*sun tide*)	
IS_A	tide
CAUSED_BY	direct attraction to the sun
AFFECTS	[default value]
HAS_TIME	[not activated]
Diurnal tide	
IS_A	tide
CAUSED_BY	[default value]
AFFECTS	[default value]
HAS_TIME	

(i) phases	one flood and one ebb period	
(ii) frequency	each tidal day	

Semidiurnal tide	
IS_A	tide
CAUSED_BY	[default value]
AFFECTS	[default value]
HAS_TIME	
(i) phases	two flood and two ebb periods
(ii) frequency	each tidal day

Mixed tide	
IS_A	tide
CAUSED_BY	[default value]
AFFECTS	[default value]
HAS_TIME	
(i) phases	Two flood and two ebb periods per day but of different ranges.
(ii) frequency	each tidal day

Mid tide	
IS_A	tide-moment
CAUSED_BY	[default value]
AFFECTS	[default value]
HAS_TIME	midway between the high water and the low water

High water	
IS_A	tide-moment
CAUSED_BY	flood
AFFECTS	[default value]
HAS_TIME	when water is at highest level

Low water	
IS_A	tide-moment
CAUSED_BY	[default value]
AFFECTS	[default value]
HAS_TIME	when water is at lowest level

Spring tide	
IS_A	higher high tide/ lower low tide
CAUSED_BY	combined gravitational attraction of both the moon and sun when aligned with the Earth
AFFECTS	[default value]
HAS_TIME	
(i) frequency	every two weeks when there is a full moon

Table 3

Definitional structure of the different types of tide

The definitions make the intercategorial relations very clear. Since this conceptual category is largely based on oppositions between its members: (1) rising tide/ebbtide; (2) moon tide/solar tide; (3) high water/low water. However all can be defined by the same set of conceptual relations, which activate basically the same or a similar set of lexical items. This template can be considered a conceptual grammar for the description of all types of tides,

which ensures a high degree of systematisation at the micro-structural level (Faber et al., 2005).

5 CONCLUSIONS

In this paper we have briefly introduced the concept of CL and have explained the advantages and disadvantages of using it. We propose a type of metalanguage for the basic format of controlled-language definitions which are based on Martín Mingorance's Functional-Lexematic Model (FLM).

Our research corroborates the notion that the linguistic description of any specialized concepts should make category membership explicit, reflect its relations with other concepts within the same category and specify its essential attributes and features (Faber *et al*., 2005).

Our results indicate that the use of controlled language in the definition of terms makes their conceptual description more coherent and systematic. Controlled language increases terminological consistency and standardization, simplifies the syntax and avoids any semantic ambiguities.

This is the preliminary research for the creation of controlled language, which we plan to do in the subsequent phase of our research.

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The Role of Writing Strategy Use in Relation to Chinese EFL Students' Achievement in English Writing: A Cognitive Approach

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This paper takes a cognitive approach to explore cognitive and metacognitive writing strategies in EFL student writers in relation to their achievement in L2 (English) writing and discuss the results and implications in teaching L2 writing. To determine the relationship between writing strategy use and writing task performance, 18 high- and 18 low- achieving Chinese EFL students selected out of 107 students in 9 English composition classes at a university in Taiwan participated in the present study. The results showed the similarities and differences on which parts the high- and low- achieving student writers focussed and to which they devoted more or less of their cognitive activities. Furthermore, the writing strategies used by the high- and low- achievers are statistically different in 1) generating ideas, 2) generating texts, 3) revising and 4) editing.

1 INTRODUCTION

Educational psychology is the branch of education and psychology focussed on the development of effective teaching techniques and the assessment of learners' aptitudes and progress (Conner, 2001). One psychological function that has been found to play an important part in educational achievement is metacognition in 'working memory', the processes involved in cognitive functions as self-regulation in executive control (Pickering and Phye, 2005). Executive control is a monitoring device that enables individuals to be aware of their own cognitive activity and to administer it effectively (Bereiter and Scardamalia, 1982). The present study aims to investigate Chinese students' cognitive/metacognitive strategies in the process of writing English on the basis of the comparison between the high- and low- achievers' strategy use during writing. It is based on the assumption that only by studying the students' writing process can we begin to design writing process methods and approaches and evaluate their appropriateness. If we could link into a student's strategy use during the writing process and uncover what it is that makes one student a great writer and another a poor one, we might be able to figure out how to help the English writing of weaker students.

2 LITERATURE REVIEW

2.1 Definition of Cognitive/Metacognitive Strategies

Metacognitive strategies may be shown in the form of cognitive strategies and appear to overlap with cognitive strategies. Phakiti (2003) proposes that metacognitive strategies may not be different from cognitive strategies; rather, one should identify the underlying goals for using a strategy and thereby define a strategy as either cognitive or metacognitive. As stated by Butterfield, Albertson and Johnston (in press), a distinction that can be made between cognition

and metacognition is that the former involves strategies for using knowledge to solve problems, whereas the latter concerns monitoring, controlling and understanding one's strategies.

2.2 Cognitive Theory in the Writing Process

According to Flower and Hayes (1981), Hayes (1996) and Hayes and Flower (1980), writing consists of three main cognitive processes/strategies: planning, translating and reviewing. Planning is divided into three sub-strategies: generating ideas, organizing, and goal-setting. The second part of the writing process, the act of composing referred to as "translating," is when writers actually put their ideas into visible language, an activity through which the writer transforms the ideas from a linear or hierarchic plan into sentences. Finally, reading and editing are the sub-strategies of reviewing.

"Planning, translating and reviewing are under the control of a Monitor" (Flower and Hayes, 1981, p. 367). According to Flower and Hayes (1981), Hayes (1996) and Hayes and Flower (1980), monitoring the writing process well is the ability to think about thinking and to continuously coordinate and examine the mental manipulation in sustaining and shifting the focus of attention among sub-strategies in order to ensure the writing's progress and quality. This process is referred to as executive control. "As writers compose, they monitor their current process and progress. The monitor functions as a writing strategist which determines when the writer moves from one process to the next" (Flower and Hayes, 1981, p. 374).

3 RESEARCH METHODS

3.1 Research Questions

1. From a cognitive perspective, what cognitive/metacognitive strategies do students use in completing English writing?
2. Is there any difference in cognitive/metacognitive strategies used by the high- and low-achieving students?

3.2 Research Design

In order to answer the research questions, I used a multiple case study to investigate students' strategy use in English writing by means of the think-aloud protocol. Eighteen high- and 18 low- achieving Chinese EFL students selected out of 107 students in 9 English composition classes at a university in Taiwan were recruited. The definition of high- and low- achieving students in English writing was the average top 2 and bottom 2 students in each class based on the multiple scores in English writing graded by the university teachers who taught a year long English composition. In the present study, all of them wrote on the same essay topic.

3.3 Data Collection Procedures

Data were collected through students' concurrent think-aloud protocols during writing and their finished think-aloud writings. The researcher did not set any specific expectations for participants with regard to what they might do. The think-aloud procedures did not comprise

any modeling so as not to affect the students' thought process or "cue specific thoughts or actions" (Smagorinsky, 2001, p.237) or their choice of the language for their verbalizations. In the practice think-aloud writing session, students were introduced to verbalize whatever came into their minds as they wrote, whether the thought was in English, Chinese or in English/Chinese. When they mastered this procedure, they were asked to think aloud in the actual writing session. They performed a think-aloud writing task alone in a quiet room in 40 minutes. The researcher remained unobtrusively in the background and did not intervene, except to prompt students by saying "keep talking" if s/he remained silent. Their writing processes were videotaped. The recorded think-aloud protocols produced by students were then fully transcribed verbatim into scripts so that the utterance of each strategy could be coded. The detailed data collection procedures are further illustrated as follows.

3.3.1. The Practice Think-Aloud Writing Session

Before the students start writing, they were first introduced by the researcher to the think-aloud procedure based on the principle given by Hayes and Flower (1983) and Manchon, Murphy and Roca de Larios (2005). The students were given the following introduction (originally in Chinese):

> I would like you to write a composition on a writing topic that now I am going to give you. When you write the composition, I would like you to say aloud everything that goes in your head. You should do everything that you do normally when you write a composition. The only difference is that you are going to do it thinking aloud. During writing you can use whatever language you want to use. You will have 40 minutes to complete the writing task on the computer.

If the students failed to verbalize their mental processes, there were always verbal signals ("keep talking") given by the researcher by prompting students to think aloud. After the principle of the think aloud writing had been explained to the students, they were encouraged to raise questions and concerns about the procedure. Then they had around 20 minutes to practise think-aloud on a given topic on the computer as follows.

> Do you agree or disagree with the following statement? With the help of technology, people nowadays can gain more information and learn it more quickly. Use specific reasons and details to support your argument.

3.3.2. The Actual Think-Aloud Writing Session

When the students were in the actual writing session, they composed their own think-aloud writings on the computer in 40 minutes and the whole writing process was videotaped, with the camera focussed specifically on the screen. The students were guided by the following instruction in the writing prompt as follows.

> Do you agree or disagree with the following statement? It is better for children to grow up in the countryside than in a big city. Use specific reasons and details to support your argument.

The topic was given right after the writing task began. When the students composed aloud, no interruption was made. If the students failed to think aloud, they were reminded to do so by the researcher with verbal signals ("keep talking").

4 RESULTS

The think-aloud protocol revealed strategies that the students were engaged in during writing. It displayed how the students focus their attention on different areas in the writing process. The utterances of strategies produced from the time the students started to read the writing prompt until the time they finished their writings were calculated.

4.1 The Analysis of Strategy Use in Six Major Processes

The 16 individual strategies that emerged in the data were grouped into six categories; the reading process, planning process, composing process, reviewing process, miscellaneous processes which were less directly related to the writing, and contextual influence. The utterances of strategies in the six main processes and percentages of utterances of strategies in the six main processes dominant in utterances of strategies in the entire writing processes (intensity of attention) are listed in Table 1.

Processes and Factors	High Achievers		Low Achievers	
	Utterances of Strategies (number)	**Intensity of Attention:** (%)	Utterances of Strategies (number)	**Intensity of Attention:** (%)
Reading	55	**0.7% (+)**	47	**0.6% (-)**
Planning	537	**6.4% (-)**	802	**9.7% (+)**
Composing	3264	**39.0% (-)**	3397	**41.1% (+)**
Reviewing	4409	**52.7% (+)**	3822	**46.3% (-)**
Miscellaneous	64	**0.8% (-)**	157	**1.9% (+)**
Contextual Influence	21	**0.3% (-)**	36	**0.4% (+)**
Total	8361	**100%**	8261	**100%**

Table 1

Intensity of Attention: The Breakdown of Strategy Use in Six Major Processes

Note: (+) and (-) are given to compare percentages between the high- and low- achievers.

Two major differences were observed between the two groups. First, other than the miscellaneous processes, with regard to the planning, the percentages in the low achievers were about 1.5 times as high as the percentages in the high achievers. In other words, the low achievers tended to engage more in the planning process than the high achievers. This pattern may imply that the low achievers needed to go back to do the planning, while the high achievers did not have this need and could move on with the other mental activities. The second difference, with respect to the reviewing process, was that the percentage in the high achievers was 6.4% higher than the low achievers. The reviewing process appeared to play a more

important role for the high achievers group than for the low achievers group. This pattern indicates that the high achievers exerted more effort to review their written texts.

	Number: H/L	Mean: H/L	P- value (two-tailed)
1. Reading Prompt			
P	18/18	6.111111/5.222222	0.490387
2. Planning			
FP	18/18	2.333333/2.555556	0.622383
IW	18/18	1.222222/1	0.718836
GS	18/18	23.11111/20.66667	0.601325
MS(I)	18/18	6.777778/12.44444	0.233189
MS(L)	18/18	4.111111/5	0.741799
GI	18/18	21.88889/47.44444	0.006096**
3. Composing			
GP	18/18	48/86.55556	0.050666
G	18/18	315.8889/268.6667	0.043849*
4. Reviewing			
RP	18/18	235.5556/254.3333	0.409711
R	18/18	23.44444/20	0.286216
RP+R	18/18	262.3333/274.3333	0.620735
EV	18/18	23.88889/26.88889	0.601297
RV	18/18	87.11111/54	0.000384**
E	18/18	117.6667/69.44444	0.002405**
RV+E	18/18	204.7778/123.4444	0.000104**
5. Miscellaneous			
GC	18/18	7.111111/17.44444	0.0967
6. Contextual Influence			
RI	18/18	2.333333/4	0.372364

Note: Strategy in the Writing Process

1. **P** Reading the Prompt
2. **FP** Formulating the Position
3. **IW** Interpreting the Writing task
4. **GS** Goal Setting
5. **MS(I)** Memory Search for Ideas
6. **MS(L)** Memory Search for Languages
7. **GI** Generating Ideas
8. **GP** Generating Pretext
9. **G** Generating texts
10. **RP** Rereading/Repeating sentence Parts
11. **R** Reading sentence(s)
12. **EV** Evaluating the written text
13. **RV** Revising the written text
14. **E** Editing the written text
15. **GC** Giving general Comments
16. **RI** Researcher Intervention

Table 2

Paired Group T-test: High- (H) and Low- (L) Achievers

As Table 2 shows, when the utterances of strategies in all the high- and low- achievers groups are further measured by pair group t-test, the results show that they are statistically significantly different in 1) generating ideas ($p<.01$), 2) generating texts ($p<.05$), 3) revising ($p<.01$), 4) editing ($p<.01$) and 5) revising and editing ($p<.01$). The high achieving student writers focussed more on 1) generating texts, 2) revising and 3) editing, while the low achieving student writers focussed more on generating ideas. This pattern shows that the high achievers concentrated on producing more texts, making meaning changes, and fixing grammatical and spelling errors while the low achievers group wasted lots of time and effort on generating ideas which they would never write down later in their texts. It is also noted that in terms of generating pretexts, the p-value is 0.050666, which just fails to reach statistical significance.

5 CONCLUSIONS

An important goal in writing instruction is to help students develop the self-regulation skills needed to successfully manage the intricacies of the writing process. By modelling the writing behaviors from the students with high achievement, it may be useful for teachers to think about which part(s) deserve(s) more attention in English writing. In terms of writing techniques, the process approach to the teaching of writing with a strong emphasis on encouraging students to do more reviewing actions might be worthwhile. Student writers need to engage in more reviewing, which is a central and possibly the most significant part of writing, as it is likely to enhance and improve the quality of writing. Teachers' writing pedagogy has to underscore the importance and potential benefits of evaluating, reviewing and reassessing the ideas, for doing so enables students to produce more successful writing.

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Two Subtypes of M-implicatures: A study with special reference to Modern Greek

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The neo-Gricean pragmatic M-principle (Levinson 1987, 1991, 2000 and Huang 2000, 2007) operates in terms of alternates that contrast in form. More specifically, the M-principle predicts that "marked or prolix anaphoric expressions will tend to pick up the complement of the stereotypical extensions that would have been suggested by the use of the corresponding unmarked forms" (Levinson 2000: 38). When it comes to anaphora, the M-principle predicts that, given an anaphoric M-scale {x, y}, the use of the marked y instead of the unmarked x will M-implicate a contrast either in terms of reference or in terms of contrastiveness and/or logophoricity (Levinson 2000, Huang 2000, 2007). Based on a study in Modern Greek anaphora, it will be argued that these two subtypes of M-implicatures (in reference and in contrastiveness/logophoricity) interact systematically in a hierarchical manner. Therefore, a hierarchical resolution schema will be proposed, according to which M-implicatures of reference are the first to be calculated. If, on the other hand, there is no contrast in reference despite the use of a prolix expression, then an M-implicature in terms contrastiveness and/or logophoricity is generated.

1 INTRODUCTION

Conversational implicature is one of the most fundamental notions of pragmatic theory and constitutes the basis for the development of neo-Gricean theories. The notion of implicature was introduced by Grice in the William James lectures delivered at Harvard back in 1967. Grice develops the theory of conversational implicature based on the fact that speakers intend meanings which are not formally (linguistically) coded. As Levinson (1983: 97) remarks, the notion of conversational implicature gives an explanation for this, as it gives 'some explicit account of how it is possible to mean […] more than what is actually said (i.e. more than what is literally expressed by the conventional sense of the linguistic expressions uttered)'. Since the inception of the classical Gricean theory, there have been many developments of the original Gricean concepts. For the purposes of this study, I will focus on the neo-Gricean pragmatic theory as introduced and developed by Levinson (1987a, 1987b, 1991, 2000), Horn (1984, 1988, 1989) and Huang (1991, 1994, 2000, 2004, 2007).

2 THE NEO-GRICEAN PRAGMATIC PRINCIPLES

Levinson (1987, 1991, 2000) puts forward a neo-Gricean pragmatic model which reduces the original Gricean maxims to three inferential pragmatic principles, namely, the Q(uantity)-[1],

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[1] The Q-principle is given as follows (Levinson 2000: 136-7):

Speaker's Maxim: Do not provide a statement that is informationally weaker than your knowledge of the world allows, unless providing a stronger statement would contravene the I-principle.
Recipient's Corollary: Take it that the speaker made the strongest statement consistent with what he knows, and therefore that:

I(nformativeness)- and M(anner)-principles. Here, I will mainly focus on the I- and M-principles.

(1)   The I-principle

Speaker's Maxim: The Maxim of Minimization
'Say as little as necessary', i.e. produce the minimal linguistic information sufficient to achieve your communicational ends (bearing the Q-principle in mind).
Recipient's Corollary: The Enrichment Rule.
Amplify the informational content of the speaker's utterance, by finding the most specific interpretation, up to what you judge to be the speaker's M-intended point. Specifically:
   (a) Assume that stereotypical relations obtain between referents or events, unless
      (i) this is inconsistent with what is taken for granted;
      (ii) the speaker has broken the Maxim of Minimization by choosing a prolix expression.
   (b) Assume the existence of actuality of what a sentence is 'about' if that is consistent with what is taken for granted.
   (c) Avoid interpretations that multiply entities referred to (assume referential parsimony); specifically: prefer co-referential readings of reduced NP's (pronouns or zeros)

The I-principle is an upper bounding pragmatic principle, hence, when the speaker says '…*p*…' s/he conversationally implicates '… more than *p*…' (Huang 2000: 209). In other words, according to the dictum of the I-principle, informationally weak expressions tend to be enriched informationally by the hearer.

(2)   The M-principle

Speaker's Maxim: Indicate an abnormal, non-stereotypical situation by using marked expressions that contrast with those you would use to describe the corresponding normal, stereotypical situation.
Recipient's Corollary: What is said in an abnormal way indicates an abnormal situation, or marked messages indicate marked situations, specifically:
When *S* has said "p", containing marked expression *M*, and there is an unmarked alternate expression *U* with the same denotation *D* which the speaker might have employed in the same sentence-frame instead, then where *U* would have I-implicated the stereotypical or more specific subset *d* of *D*, the marked expression *M* will implicate the complement of the denotation *d*, namely *d'* of *D*.

It is important to note that the M-principle operates in terms of alternates that contrast in form and not in semantic content. The main tenant of the M-principle is that the use of a marked[2] expression will implicate a marked message. Conversely, marked expressions should be

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(a) if the speaker asserted A(*W*), AND <*S*, *W*> form a Horn scale (such that A(*S*) – A(*W*)), then one can infer K ~ (A(*S*)), i.e. that the speaker knows that the strongest statement will be false;
(b) if the speaker asserted A(*W*) and A(*W*) fails to entail an embedded sentence Q, which a stronger statement A(*S*) would entail, and {*S*, *W*} form a contrast set, then one can infer ~K(Q), i.e. the speaker does not know whether Q obtains or not.

[2] The terms 'marked' and 'unmarked' are used by Levinson in the sense of normal/abnormal. This sense of 'markedness' is adopted in this work. For a discussion on the different senses of 'markedness' and the possibility of doing away with it see Haspelmath (2006).

avoided if no marked message is intended. M-implicatures are generated by M-scales defined as follows:

(3)   M-scale: {x, y}
       y +> M ~ x

By way of illustration, consider the following example of M-implicatures.

(4)   O   Janis stamatise to   aftokinito
       The John stopped   the car
       'John stopped the car.'
       +> John stopped the car in the normal way

(5)   O   Janis ekane to aftokinito na stamatisi
       The John made the car   to stop
       'John caused the car to stop.'
       +> John stopped the car in an unusual way

In example (4), where the speaker uses a less prolix expression, s/he also conveys an unmarked interpretation. By contrast, in (5), the marked interpretation of the second sentence follows from the use of a more prolix expression. This marked interpretation is the direct outcome of the application of the M-principle (for more on M-implicatures see Huang 1991, 1994, 2000, 2007, Horn 2004).

3 A NEO-GRICEAN PRAGMATIC THEORY OF ANAPHORA

So far, the neo-Gricean pragmatic principles have been presented. In a later stage, these principles are employed for the interpretation of the pragmatics-syntax interface and more accurately, they are applied to anaphora, a rather central area of research. The neo-Gricean pragmatic approach to anaphora has been mainly advocated in the works of Levinson (1987a, 1991, 1998, 2000) and Huang (1991, 1994, 1995, 1996, 2000a, 2000b, 2001a, 2001b, 2002, 2003, 2004, 2007). The more recent neo-Gricean apparatus for the interpretation of anaphora is proposed by Huang (2007). According to it, the interpretation of NP-anaphora can follow from the interaction of the three neo-Gricean pragmatic principles in the following way:

(6)   Huang's revised neo-Gricean pragmatic apparatus for anaphora

       (a) Interpretation principles

           (i)   The use of an anaphoric expression x I-implicates a local co-referential interpretation unless (ii) or (iii):

           (ii)   There is an anaphoric Q-scale <x, y>, in which case the use of y Q-implicates the complement of the I-implicature associated with the use of x, in terms of reference.

           (iii) There is an anaphoric M-scale {x, y}, in which case the use of y M-implicates the complement of the I-implicature associated with the use of x, in terms of either reference or expectedness.

       (b) Consistency Constraints

           Any interpretation implicated by (a) is subject to the requirement of consistency with:
           (i) the DRP.

      (ii) information saliency, so that

        a)   implicatures due to matrix constructions may take precedence over implicatures due to subordinate constructions, and

        b)   implicatures of co-reference may be preferred according to the saliency of the antecedent, in line with the following hierarchy:
topic> subject> object, etc.; and

      (iii) general implicature constraints, namely,

        a)   background assumptions,
        b)   contextual factors,
        c)   meaning$_{-nn}$, and
        d)   semantic entailments.

3.1 The case of Modern Greek

The neo-Gricean pragmatic apparatus can also account for the interpretation of NP-anaphora in Modern Greek. In the remainder of the discussion, I will focus on the case of M-implicatures.

    Recall at this point that Modern Greek is a typical pro-drop language and, as a result, it drops the overt subjects of its clauses. In consequence, in an unmarked context, finite clauses in Modern Greek appear with a phonetically null subject, as illustrated in the following example:

(7)   O Janis$_i$ theli Ø$_i$ na fighi.
        the John wants (he) to go
        'John wants to go.'

Given the neo-Gricean apparatus in (6), the interpretation of the null pronoun follows directly from the I-principle. However, the pro-drop effect is just a general tendency, which means that an overt pronoun form can also occur instead of the null one. This is illustrated in (8) below.

(8)   O Janis$_i$ theli aftos$_j$ na fighi.
        the John wants he   to go
        'John wants him to go.'

In contexts like those of (7) and (8), the null and the overt pronoun form a typical M-scale {Ø, *pronoun*}, such that the use of the more prolix pronoun *aftos*, instead of the less prolix null pronoun, will M-implicate the complement of the interpretation associated with the use of the null pronoun, i.e. disjoint interpretation. By contrast, the use of the unmarked null pronoun shows the intention of the speaker to avoid such a disjoint interpretation. It becomes fairly clear then that, in contexts like these, the marked message which is promoted by the use of a more prolix pronoun is a marked message in terms of reference.

    The picture, however, is not that clear, since the use of a more prolix form does not always result in change of reference[3]. Consider the following pair of examples:

(9)   O Janis$_i$ dhen katalave oti Ø$_i$ kerdhise to laxio.
        the John not realized that (he) won   the lottery

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[3] The indexation in example (10) indicates the preferred reading, i.e. the default interpretation. The full pronoun can also have an independent interpretation, although this is not the preferred reading in this context.

'John didn't realize that he had won the lottery.'

(10)   O Janis$_i$ dhen katalave oti aftos$_i$ kerdhise to laxio
the John not realized that he won the lottery
'John didn't realize that he had won the lottery.'

(11)   O Janis$_i$ nomizi oti Ø$_i$ ine o kaliteros mathitis
the John thinks that (he) is the best student
'John thinks he is the best student.'

(12)   O Janis$_i$ nomizi oti o idhios$_i$ ine o kaliteros mathitis
the John thinks that the same self is the best student
'John thinks that he himself is the best student.'

Indeed, the use of more prolix anaphoric expressions in examples (10) and (12) does not seem to trigger M-implicatures of disjoint reference as would otherwise be predicted by the M-principle.

Is the M-implicature therefore cancelled in contexts like these? Not at all. Since language is not redundant in this sense, there must be a difference between the use of more prolix anaphoric expressions and the null pronoun. In other words, the overt pronoun *aftos* in (10) and the anaphor *o idhios* in (12) must contrast in some way with the null pronoun. I argue that in these contexts there is a marked message in terms of emphaticness and contrastiveness, when the full pronoun *aftos* is used, and in terms of logophoricity when the anaphor *o idhios* is used.

What I observe here is some sort of unexpectedness (Edmondson & Plank 1978, Huang 2000a, Levinson 2000), that is, interpretations which are 'contrary-to-expectation' (the term used by Levinson 2000: 333) and which seem to be problematic for a neo-Gricean pragmatic analysis. However, this is not the case. As Huang (2000a: 225) notes, 'this unexpectedness may turn out to be logophoricity, emphaticness/contrastiveness or something yet to be discovered'. In any case, these contrary-to-expectation interpretations can be accounted for in terms of the systematic interaction of the neo-Gricean pragmatic principles, as will be shown below.

3.1.1 Emphaticness/contrastiveness

In distributions like those in (10), the use of *aftos* leads to a contrary-to-stereotype emphatic/contrastive interpretation. This contrastive or emphatic content is further supported by the presence of a natural negative gloss of the sort 'and not anyone else'. The use of *aftos* for emphaticness/contrastiveness is pragmatically motivated and it is subject to the M-principle. Let me spell it out. Given the choice between a marked (*aftos*) and an unmarked (null) expression, the speaker will tend to use the unmarked one unless s/he wants to promote a marked interpretation, contrary to the stereotypical one, which would have been triggered by the unmarked expression. Therefore, given the M-principle, the use of the more prolix overt pronoun will M-implicate an emphatic/contrastive reading of the pronoun.

3.1.2 Logophoricity

According to Culy (1997: 845), 'logophoric pronouns are usually described as pronouns that are used to refer to the person whose speech, thoughts, or feelings are reported or reflected in a given linguistic context'. This 'person' is also referred to as the 'internal protagonist' (Huang 2000a) or the 'minimal subject of consciousness' (Zribi-Hertz 1989). As Kuno (1987) and Kuno & Kaburaki (1977) note, the contrast between a pronoun and an anaphor, where they can both occur in the same distribution, is semantic/pragmatic in nature and is associated with the notion of 'point of view'.

This is the case with the use of the anaphor *o idhios* in contexts like that of (12). When the null pronoun is used, the speaker expresses the belief that *John* is the best student. In other words, the speaker states his own view about the protagonist of the sentence, who is *John*. In contrast, when *o idhios* is used, the speaker reports what *John* believes something about himself, that is, he reports the protagonist's point of view. As I understand it, the use of the anaphor *o idhios* encodes logophoricity.

The logophoric interpretation of *o idhios* can be accounted for by the systematic interaction of the neo-Gricean pragmatic principles. When there is an option between a null pronoun and *o idhios*, the speaker will tend to use the unmarked zero if a marked message is not intended. In contrast, if a logophoric interpretation is intended, the more marked anaphor, *o idhios*, will be used. This is explained in terms of the interaction of the M- and I-principles. Given the M-scale {Ø, *o idhios*}, the use of the more prolix anaphor instead of the unmarked zero will M-implicate the intention of the speaker to go for a logophoric interpretation.

4 TWO SUBTYPES OF M-IMPLICATURES

To recapitulate, it has so far been illustrated that the use of a more prolix anaphoric expression where a less prolix one could have been used does not necessarily trigger an M-implicature in terms of reference. At the risk of redundancy, the reader should recall that the use of the more prolix pronoun *aftos*, or the anaphor *o idhios* instead of the zero pronoun does not generate a contrast in reference. Rather, it indicates a marked message in terms of emphasis and logophoricity respectively. In consequence, I understand that the contrast that exists between *aftos* or *o idhios* on the one hand, and the null pronoun on the other, is maintained at a level other than reference. In a sense, there are two sub-types of M-implicatures, namely those indicating emphaticness/contrastiveness, and those signalling logophoricity. The pragmatic apparatus in (6) indeed predicts that M-contrasts can hold at a level other than reference, thus being able to account for these 'unexpected' interpretations. What now remains to be investigated is how these two sub-types interact with each other.

4.1 The M-hierarchical pattern

The examination of data from Modern Greek shows that there is a kind of complementarity between these two sub-types. This means that in cases where there is an M-implicature in terms of reference, there cannot be an M-implicature in terms of emphaticness/contrastiveness or logophoricity, and vice versa. What is more, as I understand it, apart form the systematic complementarity between these two sub-types, there must also be a kind of hierarchical relationship. What then is necessary for the pragmatic apparatus, is to formalise this hierarchy by incorporating a resolution schema that will predict the order in which these two types are calculated.

What I put forward here is a hierarchical schema which regulates the interaction of these two subtypes of M-implicatures (in reference and in contrastiveness/emphaticness or logophoricity). According to this hierarchical schema, M-implicatures in reference are calculated first, in the abscence of any contrastive/emphatic or logophoric intended meaning. However, when there is no contrast in reference, an M-implicature in contrastiveness/emphaticness or logophoricity will be calculated. This M-hierarchical pattern is summarized in (13) below.

(13)   M-scalar hierarchical schema
         M-contrasts:
                 (a) reference

> (b) contrastiveness/emphaticness or logophoricity

The numbering in the schema reflects the hierarchy of the two types of M-implicatures. The study of the empirical data shows that when there is an M-contrast in reference, there is no contrast in contrastiveness/emphaticness and/or logophoricity, and vice versa. This schema can account for the fact that M-implicatures are not cancelled, even when reference is maintained, since they operate at other levels of pragmatic explanation as well.

5 CONCLUSION

Summing up the discussion, I have outlined the neo-Gricean pragmatic framework for the interpretation of NP-anaphora. As was illustrated by the examination of some Modern Greek data, there are cases in which the use of a formally more marked anaphoric expression, instead of an unmarked one, does not trigger an M-implicature of disjoint reference. It was argued then that the M-implicature is not cancelled, but that it operates at a level other than reference, namely, that of contrastiveness/emphaticness or logophoricity. As a result, based on empirical findings from Modern Greek anaphora data, I put forward a hierarchical resolution schema, according to which M-implicatures in reference are the first to be calculated by interlocutors. When there is no contrast in reference, an M-implicature in contrastiveness/emphaticness or logophoricity takes over. In this way, an adequate explanation is given not only of the pragmatic factors involved in the choice of anaphoric expressions, but also of the fact that M-implicatures are not cancelled, even when reference is maintained, since they operate at other levels of pragmatic explanation as well.

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How and When do Children Acquire
the Use of Discourse Markers?[*]

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In this paper, I will be reporting on my research into the developmental aspects of the use of discourse markers, and will attempt to show that they are learned considerably earlier than is usually assumed. The study uses the data of 4 to12-year-old children's narratives where the subjects are asked to recall either the Fish Story or the Beach Story. The results demonstrate the early onset of discourse markers such as *so* and *and* at the age of 4. At this early age, the subjects can be shown to control the structure of discourse by means of discourse markers which guide the intended meaning of the utterances the hearer should understand. This central finding – that the use of *so* and *and* as discourse markers is established before there is any persuasive evidence of the control of logical connectives – suggests a larger hypothesis that the rudimentary use of discourse markers is a precursor for the emergent command of procedural meaning more generally.

1 INTRODUCTION

The term *discourse marker* is generally used to refer to a class of linguistic elements which are distinguished by their function of marking relationships between units of discourse and the meaning they encode. This term intends to indicate or signal how one unit of discourse is related to the prior utterance (Schiffrin 1987). During the last decade, the study of discourse markers has been brought into the centre of pragmatic research; nevertheless, there is considerable disagreement about how discourse markers should be analysed. Schiffrin, for example, argues that a primary goal of discourse is the accomplishment of conversational coherence. Speakers and hearers each have their own responsibility, in that a speaker is expected to produce an utterance, so that its message can be inferred by a hearer through a following utterance which displays appropriate attention to that message. Schiffrin's model of discourse markers is based on the notion of coherence in discourse, which is understood to be a relation with adjacent units of talk. Accordingly, the primary function of discourse markers is to indicate 'the location of utterances within emerging structures, meanings, and actions of discourses' (Schiffrin 1987: 24). For instance, *and* is analysed as a marker which functions as continuing a speaker's action in the sense that *and* marks the speaker's identification of a following unit as a continuation of his/her own preceding talk. In addition to the indexical function of discourse markers, they can link utterances to different 'planes of talk' simultaneously. Therefore, *and* operates at an ideational level by coordinating ideas, an action level by marking an action of continuing and an exchange level by continuing a turn. Hence, discourse markers lead to the 'integration of different components of talk' (1987: 330) or in other words *coherence.*

It seems to be true that discourse markers play multi-functional roles in utterances as Schiffrin proposed. However, Relevance Theory suggests that these multi-functions can be explained in terms of the encoded meaning of these expressions with the assumption that the speaker intends to produce an utterance as optimally relevant as possible. In Relevance Theory, there are two distinctive processes involved in utterance interpretation: linguistic form can encode either elements of the conceptual representations that undergo inferential

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computations or procedural information which constrains the process of inferential computations (Blakemore 1987, 2002). Discourse markers, in this theory, are defined as 'expressions that constrain the interpretation of the utterances that contain them by virtue of the inferential connections they express' (Blakemore 1987: 105). Relevance Theory does not consider coherence as a primary function of discourse markers, but it concerns most importantly how an utterance achieves relevance. In other words, given a trade-off between effects and processing effort in the degree of relevance, the use of discourse markers is considered to be 'consistent with the speaker's aim of achieving relevance for a minimum cost in processing' (Blakemore 2002: 79). Consider the example given in (1).

(1)   (a) John can open Bill's safe.
         (b) *So* he knows the combination.

                                                             (adapted from Blakemore 2002)

The discourse marker *so* in (1b) encodes information that the hearer is expected to perform an inference in which the proposition expressed by (1b) is a conclusion derived in an inference in which the proposition expressed by (1a) is a premise.[1]

   Research into discourse markers has broadened to include a large number of frameworks reflecting various research interests, methods, and perspectives. However, there is surprisingly little literature dealing with the question of how children first acquire the use of them. Most previous studies focus on the question at what age children acquire discourse markers. Those studies generally point out that they are acquired rather late at the age of 9 or 10. For instance, Champaud and Bassano (1994) examine how French children aged 8 to 10 years process sentences with discourse markers like *mais* ('but') and *pourtant* ('nevertheless') by means of the context choice task and the conclusion choice task. In both context and conclusion choice tasks, discourse markers in question show significant developmental progression in terms of an increase in the performance score between 8 and 10 years.[2] In turn, this result is interpreted as indicating that the pragmatic strategies underlying the use of connectives are fully mastered only later at the age of 10. In the same vein, Scott (1984) attempts to show a developmental trend in the use of discourse markers in natural language samples of children aged 6 to 12. She claims that conjunct use is emerging at 6 years of age and that development takes place through to the age of 12, with children learning to use the same conjuncts more frequently as well as the additional lexical items, which consist of the same set of conjuncts.

   Previous research suggests that the ability to mark relationships between units of discourse is developed relatively late. However, given that pragmatic competence continues to develop through additional stages (Bloom et al. 1980), it is not clear whether the late mastery of discourse markers necessarily means the lack of ability to understand them at an early age. Children's early use of discourse markers may enable them to detect the communicative need to develop a full understanding of the meaning of them. The present study addresses the questions of how and when children acquire discourse markers, as the answer to this question will provide insight into understanding the development of pragmatics in general. In this study two of the most frequently occurring discourse markers, namely, *and*

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[1] Hence, the speaker of (1) is indicating that the utterance in (1b) is relevant by directly specifying a cognitive effect ─ that is, the derivation of contextual implication.
[2] In the case of *mais*, children from both age groups obtain a relatively low score in the context choice task where subjects have to choose between opposite preceding contexts of sentences and no considerable increase is shown. However, a significant development occurs in the conclusion choice task. Champaud and Bassano suggest that this could be resulted in relative difficulty of the two tasks for *mais*, in the sense that the context choice task is more complicated than the conclusion choice task.

and *so,* will be discussed in the analysis of the data of 4 to12-year-old children's narratives.[3] This study undertakes both a qualitative and a quantitative analysis of the use of *and* and *so.*

2 METHOD

2.1. Subjects

The data for this investigation is provided from Dorothy Bishop who carried out the Expression, Reception and Recall of Narrative Instrument (ERRNI) Test, which investigates normal and language impaired children's expressive language and story comprehension. In the present study only the samples of normal children are used. The project is a cross-sectional study of 702 native English children between 4 and 12 years including 33 adults.[4] Children were recruited through schools in all regions of the UK (South West, South East, West Midlands, East Midlands, East Anglia, North, Yorkshire, Scotland, Wales, and Northern Island). Adults were recruited from diverse sources, including members of the subject panel at the department of Experimental Psychology, Oxford University, and students taking vocational courses at the Oxford College of Further Education. Other adults were recruited by testers based in the East Midlands, Yorkshire, and Northern Ireland. The subjects are 93.5% White, 4.1% African and 2.4% Asian.

2.2. Procedure

The activity was a story-telling task, where subjects were asked to relate a story, either the Beach Story or the Fish Story, and remember it after a short delay. A standard pictorial stimulus was used to elicit the narrative. The conversations were tape-recorded and then transcribed.

2.3. Analysis

The major complication in the analysis of the data is how to break the narratives into utterances and how to identify sentential coordination with discourse markers. All main clauses connected with *and* and *so* are counted as separate utterances unless a co-referential subject is omitted (e.g. *The boy went to the park and looked for the dog*). When this happens, the clauses coordinated with *and* are counted as one utterance.[5] An utterance introduced by *so* as a discourse marker is treated as a separate sentence (e.g. *She went on her bike. So her dad waved her off*).

   Results of segmentation of the transcripts into utterances are presented in Table 1, which shows a total number of utterances in the sample by age. An average number of utterances per child is also presented in Table 1. The sample sizes at age levels are different so this leads to the calculation of proportional frequencies in the analysis of the use of *and* and *so*.

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[3] Schiffrin and Blakemore provide two different approaches to discourse markers. Given this difference of views, it is not surprising that there is no agreement on what comprises the set of discourse markers. For example, *and* and *because* are included by Schiffrin, but are excluded by Blakemore. Fraser (1996) works within the coherence-based approach but he argues that *and* and *because* are not considered as discourse markers because they encode connections within utterances, on the assumption that discourse markers encode connectivity between textual units. It is, however, beyond the scope of the present study to discuss the concrete set of discourse markers. In this paper I will follow Schiffrin's set of discourse markers which includes *and, so, but, well, now, because, then, I mean, y'know, oh,* etc.

[4] Adult's mean age is 35.4 years (SD = 15.49 years), and the range is from 17 to 64 years.

[5] The transcripts do not have information about *and* produced rapidly with a single intonation contour since Bishop did not consider the prosody as a criterion when making judgments about boundaries.

		Total utterances	Average number of utterances per sample
Age	4	5183	26
	5	4345	33
	6	3725	50
	7	3211	52
	8	2934	55
	9	3208	61
	10	4326	65
	12	2546	59
	Adult	2163	65

Table 1

Total and average number of utterances

3 RESULTS

Fig. 1 presents the frequency of *and* by age. We can observe that as early as 4 years the frequency of *and* is located just below 0.2, which is higher than that in adults (0.13). Developmental progress is reflected in the form of increased production of *and* by the age of 6.
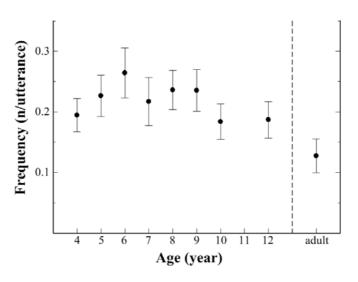

Figure 1

Frequency of *and* by age

Bloom et al. (1980) report that *and* appears as early as 25 months and that it is the first and the most frequently occurring discourse marker in children's discourse. *And* is the first discourse marker used to connect utterances that have a causal or a temporal relationship, before the child acquires expressions like *so, because* or *then*. Therefore, *and* is used to express various meanings even when more appropriate discourse markers are available. As the child acquires more specific discourse markers, which are matched to those meanings that *and* has expressed, it can be predicted that the occurrence of *and* decreases. In the present study the results support this prediction as the frequency of *and* decreases to 0.21 when that of

so reaches its highest (0.021) at age 7, as shown in Fig. 1 and Fig. 2. The frequency of *so* in Fig. 2 shows sevenfold increase between 4 and 7 years, and remains the same (0.021) by the age of 12, which is just below the adult level. *And* is the most frequent discourse marker at all ages as the lowest frequency of *and* (0.18) is sevenfold higher than the highest frequency of *so* (0.025), as shown in Fig. 1 and Fig. 2.
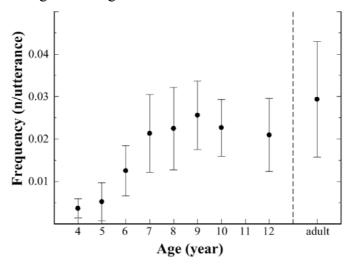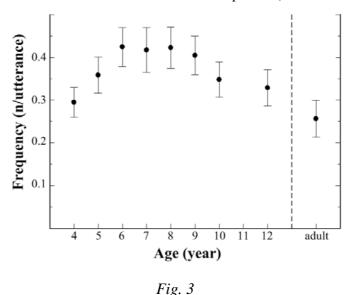

Fig. 2

Frequency of *so* by age

The graph in Fig. 3 presents the frequency of all discourse markers including *but, because, then, well, now* etc. The frequency of all discourse markers at age 4 is 0.29, which is slightly higher than the rate of adult use (0.25). This could be related to the high frequency of *and* and relatively low rate of other discourse markers. Between 6 and 9 years, the use of some discourse markers (e.g. *so, because*) increases but that of *and* decreases. Therefore, the rate of occurrence of discourse markers is balanced at a plateau, as shown in Fig. 3.

Fig. 3

Frequency of all discourse markers

In addition to a frequency comparison of discourse markers by age, it is worthwhile looking more closely at individual examples of children's narratives. In the early children's system, they tend to indicate explicitly that their narratives are structurally cohesive and form a coherent whole. For instance, the child in (2) initiates every utterance with *and*, apart from the first line.

(2)   *4-year-old's narrative*

> she's playing football
> **And** she says 'ah'
> **And** the boy says 'what's happened?'
> **And** the girl's packing up
> **And** the girl's pointing
> **And** they're playing in the park
> **And** the girl's got her watch

And seems to be used to signal that the second utterance is a continuation of the preceding utterance and the third is of the second, and so on. In addition, *and* plays a role of not only marking explicitly the relationships between adjacent utterances but informing that the child is to continue his turn. As Kyratzis and Ervin-Tripp (1999) point out, boundary markers are essential in narratives in order to create coherence since narratives are an activity of providing a reflection of reality rather than demonstrating it. The discourse markers *so, but, now* and *well* have boundary marking functions, which indicate shifts between episodes or between background information and main topic. However, as shown in (2), the child is creating a coherent text by means of *and* even when other connectives like *so* and *but* would be more appropriate. In this way, *and* plays a central role as an all-purpose discourse marker at an early age, connecting the discourse together and contributing to the coherence of the text, which succeeds in textuality.

Children at 4 years show few uses of *so*, as illustrated in Fig. 2.   However, when they use the discourse marker *so*, this seems to involve no indication of logical relations. For example, *so* in 4-year-old's narratives signals changes in episodes and gives rise to coherence, rather than encodeing a conclusion, as shown in (3).

(3)   *4-year-old's narrative*

> he's gonna have a good time
> **And** he's going to go just like
> he was a man was catching some fish
> **And** the little girl said "hello"
> **And** he had a good time
> **So**   he went to the sea side
> **And** he saw another man with black hair and brown body and green shorts

This could mean that the use of discourse markers like *so* is established well before there is any evidence of the control of logical relations. Thus, in the early stage, children use *and* as an all-purpose discourse marker and the use of *so* is limited to a rudimentary function of contributing to coherence. The use of *and* decreases as the functions of discourse markers that *and* has performed separate into that of specific discourse markers gradually.

4 DISCUSSION

The results show the pattern of usage of the discourse markers *and* and *so* by children at 4 years. *And* seems to be used as an all-purpose discourse marker in young children's narratives. *So* at an early age is used to signal a shift between episodes rather than logical relations. The use of *and* decreases as more specific discourse markers are acquired, in the sense that older children show more evidence of coherently organising their discourses by means of *so* and other discourse markers. According to Nelson (1996), although children at preschool age

begin to use discourse markers, the logical implications of expressions like *so* and *because* are fully understood only much later. Until the child acquires the adult-like uses of discourse markers, a child continuously needs to extract important features of the discourse contexts where adults use the expression. In the present study, it has been shown that younger children frequently mark coherent relations explicitly through *and* when older children and adults usually do not. The data presented here suggests that the uses of *and* are gradually taken on by *so* and other discourse markers. Therefore, developmental progression takes the form of the increasing use of discourse markers like *so* and *but* as the adult-like uses of these discourse markers are emerging gradually.

The rudimentary use of discourse markers show that children at age 4 attend to discourse structure and signal explicitly that their narratives are constructed as a whole. The usage of discourse markers thus shows an ability of control over the structure of narratives. Jisa (1984/85) points out that children at 5 years exhibit a 'top-down control' process in that their utterances are structurally tied with discourse markers. In a bigger picture this suggests that young children's rudimentary use of discourse markers seems to be a precursor for the emergent command of procedural meaning. The idea that some expressions do not encode conceptual representations but indicate how to understand the sentence containing them has been suggested by many researchers including Anscombre and Ducrot (1989). Hansen (1997) proposes a relevance-theoretic account of discourse markers in that discourse markers are 'basically instructions on how to process their host utterances in a given context' (1997:160). Within a coherence-based approach, a procedure-like account can also be found. Sanders and Noordman (2000) argue that discourse markers 'guide the reader in selecting the right relation' (2000:56). Although there is some disagreement about what kind of directions discourse markers lead to (e.g. arguments, coherence relations, etc.), it seems to be generally agreed that discourse markers play the role of guiding interpretation. Children's early use of *and* and *so*, which shows elementary control over narrative structure, can in this light be construed as a precursor for the later more explicit control of procedural meaning.

5 CONCLUSION

Relatively little research has been done on children's acquisition of discourse markers, although they clearly play an important role in their developing understanding and use of the language. In the present study, it has been shown that *and* and *so* appear at the age of 4 and that the use of these expressions as discourse markers is established well before there is any persuasive evidence of the control of logical connectives. At this age children use *and* as an all-purpose discourse marker, and thereafter several of the functions served by *and* are gradually taken on by other discourse markers. This finding suggests that the rudimentary uses of *and* and *so* seem to be a precursor for the emergent command of procedural meaning. For further research, more specific categories of *and* needs be established to see how the shift happens. However, as argued by Bloom et al. (1980), it is complicated to decide the categories expressions such as *and* belong to in early children's speech since they are not explicit but need to be inferred.

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Acquisition of the Chinese Reflexive 'ziji' by Russian and English Speakers[*]

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This study empirically investigates how Russian- and English-speaking learners of Chinese acquire syntactic properties of the Chinese reflexive 'ziji'. To my knowledge, a few studies have been done on the acquisition of 'ziji' by English speakers (e.g. Yuan 1998) and no empirical studies have focused on the acquisition of 'ziji' by Russian speakers. The present study is aimed to fill a gap in this research area.

1 PROPERTIES OF REFLEXIVES

The cross-linguistic difference between English, Chinese and Russian reflexives lies in that English reflexives can only take a local antecedent both in finite and non-finite clauses, as in (1a) and (1b), while the Chinese reflexive *ziji* can take a long-distance antecedent as well as a local one both in finite and non-finite clauses, as in (2a) and (2b); the Russian reflexive *sebja* can only take a local antecedent in finite clauses but either a long-distance or a local antecedent in non-finite clauses, as in (3a) and (3b).[1]

(1) (a) John$_i$ thinks that Bill$_j$ trusts himself$_{*i/j}$. (finite) [English]

    (b) John$_i$ asked Bill$_j$ to trust himself$_{*i/j}$. (non-finite)

(2) (a) Zhangsan$_i$ renwei Lisi$_j$ xiangxin ziji$_{i/j}$. (finite) [Chinese]
        Zhangsan think Lisi trust self

    (b) Zhangsan$_i$ yao Lisi$_j$ xiangxin ziji$_{i/j}$ (non-finite)
        Zhangsan ask Lisi trust self

(3) (a) Ivan$_i$ dumaet chto Petr$_j$ doverjaet sebe$_{*i/j}$. (finite) [Russian]
        Ivan thinks that Petr trusts self$_{DAT}$

    (b) Ivan$_i$ poprosil Petra$_j$ doverjat' sebe$_{i/j}$ (non-finite)
        Ivan asked Petr$_{ACC}$ to-trust self$_{DAT}$

Long-distance reflexives display subject-orientation effects. Chinese and Russian reflexives can only take a subject as their antecedent, as in (4) and (5). In contrast, reflexives in English can be bound to both subject and non-subject, as illustrated in (6).

(4) Zhangsan$_i$ gei le Lisi$_j$ yi zhang ziji$_{i/*j}$ de zhaopian. [Chinese]
     Zhangsan give PFV Lisi one CL   self   DE photograph

(5) Ivan$_i$ podaril Petru$_j$ svoju $_{i/*j}$ fotografiju. [Russian]

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[1] The abbreviations used in the examples are: ACC = accusative case; DAT = dative case; PFV = perfective aspect marker; CL = classifier; DE = modifying marker that occurs at the end of a pronominal modifer.

Ivan gave   Petr$_{DAT}$ self   photograph$_{ACC}$

(6)   John$_i$ gave Bill$_j$ a photograph of himself$_{i/j}$.   [English]

The properties of reflexives in the three languages are summarized in Table 1:

	Chinese	English	Russian
LD binding (finite clauses)	+	-	-
LOC binding (finite)	+	+	+
LD binding (non-finite)	+	-	+
LOC binding (non-finite)	+	+	+
Subject binding	+	+	+
Object binding	-	+	-

Table 1

Properties of reflexives in Chinese, English and Russian

The study is organised as follows. The accounts for the properties of the reflexives in the three languages are given in Section 2. Section 3 presents the empirical study with the results discussed in Section 4. We reach a conclusion in Section 5.

2 THEORETICAL BACKGROUND

The analysis adopted in this paper is based on the distinction between morphologically simple X^0 and complex XP reflexives and the relativized notion of SUBJECT. According to Progovac (1992, 1993), a reflexive and its binder must have the same X-bar status. Further, SUBJECT for an XP reflexive can only be a c-commanding XP specifier (i.e. [NP, NP] and [NP, IP]), and SUBJECT for an X^0 (head) reflexive can only be another c-commanding head (i.e. AGR). In English, long-distance (hence, LD) binding is not possible because the first available SUBJECT determines the governing category, in which the XP reflexive must be bound. Chinese does not have a morphological AGR but has a syntactic AGR, which is anaphoric and therefore is co-indexed with the AGR in higher clauses. This makes it possible for *ziji* to have LD binding. Russian hosts a morphologically overt AGR in finite clauses, but a morphologically null AGR in non-finite clauses. LD binding of X^0 reflexives across PRO SUBJECTs in Russian can be explained by the presence of anaphoric AGR in infinitivals.

The Relativized SUBJECT approach also provides an explanation for the subject-orientation of X^0 reflexives in Chinese and Russian. X^0 reflexives can only be bound to X^0 categories, and AGR is the only salient c-commanding head for X^0 reflexives; as a result, AGR is the only possible binder for a morphologically simple reflexive. Once the reflexive is bound to AGR, it is automatically bound to the subject co-indexed with that AGR. Therefore, the Chinese and Russian reflexives can only take a subject as the antecedent. XP reflexives do not recognise AGR as their binder. Instead, they can only be bound to XP categories ([NP, NP] and [NP, IP]). Thus, morphologically complex reflexives can take a subject and an object as the antecedent, which is the case of English reflexives.

3 EMPIRICAL STUDY

Regarding acquisitional problems facing non-native speakers with respect to the acquisition of *ziji*, the following predictions are made: (1) Russian learners will have difficulty in acquiring LD binding of *ziji* in finite clauses but not in non-finite clauses, whereas English learners will have difficulty in acquiring LD binding of *ziji* both in finite and non-finite clauses. (2) Russian learners will acquire (i) LD binding of *ziji* both in finite and non-finite clauses and (ii) subject-orientation of *ziji* more easily than English speakers. (3) Applying the Relativized SUBJECT analysis (Progovac 1992; 1993), LD binding of *ziji* will entail subject-orientation. (4) The behaviour of *ziji* in learners' grammars is constrained by Universal Grammar (hence, UG).

3.1 Subjects

There are 81 subjects in this empirical study consisting of 47 Russian- and 24 English-speaking learners of L2 Chinese, and 10 Chinese native speakers who serve as a control group. Table 2 provides information about subjects in each group.[2]

Groups	No.of subjects	Average age (SD)	Average months of studying Chinese (SD)	Average months in China/Taiwan (SD)	Mean scores in Proficiency test (SD)
EB	8	21 (2.51)	7 (4.72)	4 (2.88)	7 (5.41)
EI	8	22 (2.70)	16 (4.56)	5 (5.91)	24 (3.80)
EA	8	24 (3.16)	40 (10.01)	10 (6.36)	33 (1.46)
RB	10	17 (0.69)	6 (0.00)	0 (0.00)	5 (2.31)
RI	12	19 (1.44)	25 (8.08)	3 (8.75)	23 (1.61)
RPI	13	20 (1.30)	31 (14.30)	5 (3.17)	28 (0.82)
RA	12	23 (3.44)	58 (16.70)	20 (24.20)	34 (1.98)
NC	10	32 (12.50)	N/A	N/A	40 (0.48)

Table 2

Information about subjects in the experiment

3.2 Material and design

When designing the experiment, I followed Yuan (1998). All subjects were asked to perform a multiple-choice comprehension task. The task contained 70 Chinese sentences including 43 distracters. There were 9 sentence types with three tokens in each type. The test sentences involved some pragmatically and semantically 'biased' sentences, as well as pragmatically and semantically 'neutral' sentences (Thomas 1989; Yuan 1998). The purpose of including neutral and biased sentences is to determine whether L2 learners' interpretation of reflexives is controlled by formal syntactic rules or affected by pragmatic considerations.

3.3 Results

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[2] The abbreviations for subjects used in the paper are: EB = English Beginner, EI = English Intermediate, EA = English Advanced, RB = Russian Beginner, RI = Russian Intermediate, RPI = Russian Post-Intermediate, RA = Russian Advanced, NC = Native Chinese.
SD stands for standard deviation.

The percentage of interpretations of coreference between *ziji* and NP is given in Table 3 (pp52 -53).

Following Yuan (1998), the choice of LD/LOC in Types 1-2 and 4-5 is combined with the choice of LD, in order to ascertain whether LD binding of *ziji* is possible in L2 grammars of Chinese. In Types 7-9, the choice of subject/object is combined with that of object, to determine whether object antecedents are incorrectly chosen for *ziji* by L2 learners.

In Type 2, where LD in finite clauses is favoured, there is a significant difference between non-native groups and the Native Chinese group (EB vs. NC: $X^2 = 28.571$, *d.f.* = 1, *p* < 0.0003; EI vs. NC: $X^2 = 59.636$, *d.f.* = 1, *p* < 0.00001; EA vs. NC: $X^2 = 41.000$, *d.f.* = 1, *p* < 0.0008; RB vs. NC: $X^2 = 61.333$, *d.f.* = 1, *p* < 0.00001; RI vs. NC: $X^2 = 75.485$, *d.f.* = 1, *p* < 0.00002; RPI vs. NC: $X^2 = 61.500$, *d.f.* = 1, *p* < 0.0001; RA vs. NC: $X^2 = 84.354$, *d.f.* = 1, *p* < 0.0002).

In Type 2, English groups admit significantly more LD binding of *ziji* than Russian groups (EB vs. RB: $X^2 = 36.818$, *d.f.* = 1, *p* < 0.0005; EI vs. RI: $X^2 = 16.780$, *d.f.* = 1, *p* < 0.004; EA vs. RA: $X^2 = 37.690$, *d.f.* = 1, *p* < 0.0001). There is no significant difference between the EI and RPI groups ($X^2 = 0.561$, *d.f.* = 1, *p* < 0.157).

In Type 5, where LD binding in non-finite clauses is favoured, a significant difference is found between all non-native groups and the NC group (EB vs. NC: $X^2 = 2.367$, *d.f.* = 1, *p* < 0.008; EI vs. NC: $X^2 = 18.474$, *d.f.* = 1, *p* < 0.0003; EA vs. NC: $X^2 = 15.109$, *d.f.* = 1, *p* < 0.0006; RB vs. NC: $X^2 = 21.087$, *d.f.* = 1, *p* < 0.0002; RI vs. NC: $X^2 = 36.818$, *d.f.* = 1, *p* < 0.0001; RPI vs. NC: $X^2 = 27.538$, *d.f.* = 1, *p* < 0.0001; RA vs. NC: $X^2 = 31.943$, *d.f.* = 1, *p* < 0.0001).

In Type 5, English groups admit significantly more LD binding of *ziji* than Russian groups (EB vs. RB: $X^2 = 18.195$, *d.f.* = 1, *p* < 0.0002; EI vs. RI: $X^2 = 16.255$, *d.f.* = 1, *p* < 0.0001; EA vs. RA: $X^2 = 21.880$, *d.f.* = 1, *p* < 0.0007). No significant difference is found between the EI and RPI groups ($X^2 = 8.333$, *d.f.* = 1, *p* < 0.274).

There is an asymmetry in the interpretations of *ziji* in finite (Type 2) and non-finite (Type 5) clauses among all non-native groups. LD binding is significantly more admissible in non-finite clauses than in finite clauses among English speakers (EB: $X^2 = 1.471$, *d.f.* = 1, *p* < 0.006; EI: $X^2 = 28.225$, *d.f.* = 1, *p* < 0.0001; EA: $X^2 = 15.676$, *d.f.* = 1, *p* < 0.0003) as well as among Russian speakers (RB: $X^2 = 26.868$, *d.f.* = 1, *p* < 0.0001; RI: $X^2 = 22.014$, *d.f.* = 1, *p* < 0.0002; RPI: $X^2 = 18.500$, *d.f.* = 1, *p* < 0.0002; RA: $X^2 = 29.638$, *d.f.* = 1, *p* < 0.0001).

Types 7-9 deal with the orientation of the Chinese reflexive *ziji* in simple clauses. In Type 9, where object binding is pragmatically favoured, there is a significant difference between English groups and the Chinese group (EB vs. NC: $X^2 = 25.400$, *d.f.* = 1, *p* < 0.0002; EI vs. NC: $X^2 = 28.048$, *d.f.* = 1, *p* < 0.005; EA vs. NC: $X^2 = 35.808$, *d.f.* = 1, *p* < 0.0001). However, no significant difference is found between Russian groups and the Chinese group (RB vs. NC: $X^2 = 0.083$, *d.f.* = 1, *p* < 0.925; RI vs. NC: $X^2 = 0.564$, *d.f.* = 1, *p* < 0.617; RPI vs. NC: $X^2 = 0.951$, *d.f.* = 1, *p* < 0.812; RA vs. NC: $X^2 = 0.832$, *d.f.* = 1, *p* < 0.746).

In Type 9, Russian speakers admit significantly more subject-orientation than English speakers (EB vs. RB: $X^2 = 22.273$, *d.f.* = 1, *p* < 0.003; EI vs. RI: $X^2 = 26.064$, *d.f.* = 1, *p* < 0.007; EI vs. RPI: $X^2 = 21.308$, *d.f.* = 1, *p* < 0.0002; EA vs. RA: $X^2 = 29.448$, *d.f.* = 1, *p* < 0.0001).

	Eng Beg	Eng Int	Eng Adv	Rus Beg	Rus Int	Rus Post-int	Rus Adv	Native Chinese
Type 1: *ziji* in embedded finite clause (neutral)								
LD	29	21	8	20	14	13	0	52
LOC	33	58	54	80	80	69	92	16
LD/LOC	38	21	38	0	6	18	8	32
LD + LD/LOC	**67**	**42**	**46**	**20**	**20**	**31**	**8**	**84**
Type 2: *ziji* in embedded finite clause (LD favoured)								
LD	16	17	25	10	6	5	0	76
LOC	42	75	50	83	92	72	95	4
LD/LOC	42	8	25	7	2	23	5	20
LD + LD/LOC	**58**	**25**	**50**	**17**	**8**	**28**	**5**	**96**
Type 3: *ziji* in embedded finite clause (LOC favoured)								
LD	20	4	4	13	0	3	0	3
LOC	38	87	79	87	100	94	92	70
LD/LOC	42	9	17	0	0	3	8	27
LOC + LD/LOC	**80**	**96**	**96**	**87**	**100**	**97**	**100**	**97**
Type 4: *ziji* in infinitive clauses (neutral)								
LD	29	8	4	13	9	0	0	30
LOC	33	66	46	87	86	82	89	13
LD/LOC	38	26	50	0	5	18	11	57
LD + LD/LOC	**67**	**34**	**56**	**13**	**14**	**18**	**11**	**87**
Type 5: *ziji* in infinitive clause (LD favoured)								
LD	29	16	46	30	25	15	22	63
LOC	29	42	33	50	64	49	59	20
LD/LOC	42	42	21	20	11	36	19	17
LD + LD/LOC	**71**	**58**	**67**	**50**	**36**	**51**	**41**	**80**
Type 6: *ziji* in infinitive clause (LOC favoured)								
LD	29	0	0	40	20	3	6	3
LOC	38	83	83	50	72	90	86	94
LD/LOC	33	17	17	10	8	7	8	3
LOC + LD/LOC	**71**	**100**	**100**	**60**	**80**	**97**	**94**	**97**
Type 7: *ziji* in uniclauses								

(neutral subject and object)							
Subject	54	59	54	97	92	95	92	94
*object	13	8	0	3	5	5	8	3
*subject/object	33	33	46	0	3	0	0	3
*object + *subject/object	**46**	**41**	**46**	**3**	**8**	**5**	**8**	**6**
Type 8: *ziji* in uniclause (subject favoured)							
Subject	63	63	63	87	95	100	89	97
*object	8	8	4	10	5	0	11	3
*subject/object	29	29	33	3	0	0	0	0
*object + *subject/object	**37**	**37**	**37**	**13**	**5**	**0**	**11**	**3**
Type 9: *ziji* in uniclause (object favoured)							
Subject	50	44	38	80	81	76	77	80
*object	17	27	29	20	14	17	18	10
*subject/object	33	29	33	0	5	7	5	10
*object + *subject/object	**50**	**56**	**62**	**20**	**19**	**24**	**23**	**20**

Table 3

Percentage of interpretations of coreference between *ziji* and an indicated NP in the comprehension test
(LD = long-distance subject NP; LOC = local subject NP; LD/LOC = either LD or LOC NP; LD + LD/LOC = LD collapses with
LD/LOC; subject/object = either subject or object; object + subject/object = object collapses with subject/object)

4 DISCUSSION

4.1 Interpretation of 'ziji' by Russian and English speakers

As can be seen from Table 3, Russian speakers of all groups acquire LD binding in finite clauses (Type 2) at rather low rates (5%-28%). This can be explained by L1 influence on the L2 grammar. In Russian, LD binding in finite clauses is not allowed, as Russian has a morphologically overt AGR in finite clauses, which blocks the binding domain. In order to make LD binding possible for *ziji* in finite clauses in the interlanguage grammar, Russian learners should become aware of the difference between presence and absence of a morphologically overt AGR in finite clauses. In non-finite clauses (Type 5), Russian speakers accept LD binding at higher rates (36%-51%), which is also evidence of L1 transfer. In Russian, like in Chinese, LD binding in infinitive clauses is possible due to the presence of an anaphoric AGR in these clauses. Thus, LD binding is possible in non-finite clauses in Russian L2 grammar of Chinese.

The results of inferential statistical analyses indicate that no significant difference is found between Russian groups and the Chinese group in acquiring subject-orientation of *ziji*. In Type 9, where object is favoured, Russian speakers take a subject as the antecedent at high rates (62%-81%).[3] This provides evidence that the syntactic knowledge of both Russian and Chinese speakers can correctly resist the pragmatic favouring given that in Russian as well as in Chinese the reflexive can only be bound to the subject.

With regard to English learners' interpretation of *ziji,* the percentage in Table 3 indicates that English speakers of all groups accept LD binding both in finite (Type 2) and non-finite (Type 5) clauses at quite high rates: 25%-58% in Type 2 and 58%-71% in Type 5, respectively. This gives evidence that English learners are able to acquire the LD binding property of *ziji* both in finite and non-finite clauses*,* which is not instantiated in their L1.

According to statistical analyses, English speakers are significantly different from the Native Chinese in acquiring subject-orientation of *ziji* in simple clauses. The results of sentence Type 9 in Table 3 show that when the object NP is favoured, the object binding is incorrectly chosen by English speakers at the rates of 50%-62%. This can be explained by L1 transfer given that in English both a subject and an object are possible antecedents of the reflexive, whereas in Chinese only subject binding is available.

4.2 Correlation between LD domain and subject-orientation

In Progovac's (1992, 1993) Relativized SUBJECT analysis, it is argued that LD binding entails subject-orientation. However, the findings of my research do not support this view. If the relationship took place, the learners should have bound *ziji* long-distance at high rates and reject object antecedents. As the results in Table 3 indicate, Russian speakers allow LD binding of *ziji* in Type 2 at 5%-28% and in Type 5 at 36%-51%. Meanwhile, they reject the object antecedent in Type 9 only at 19%-24%. English speakers permit LD binding of *ziji* in Type 2 at 25%-58% and in Type 5 at 58%-71%. In Type 9, English speakers reject the object antecedent only at 50%-62%. These data clearly demonstrate the absence of the correlation between LD binding and subject-orientation in the interlanguage grammars.

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[3] Some Russian and Chinese speakers also accept object-orientation which seems to be caused by their performance errors.

5 CONCLUSION

The findings of my study reveal that Russian learners have difficulty in acquiring the LD binding property of *ziji* in finite clauses but not in non-finite clauses. This can be explained by L1 influence on the L2 grammar. English speakers of all groups successfully acquire LD binding both in finite and non-finite clauses. This provides evidence that English learners are able to acquire the LD binding property, which is not present in their L1. Russian learners are in advantageous position comparatively to English speakers with respect to subject-orientation property of *ziji*. Given that in Russian only subject is allowed as the antecedent, Russian learners easily acquire the subject-orientation property of *ziji*. It is not very clear, however, why English speakers appear to acquire LD binding better than Russian speakers. This question needs further investigation. In contrast to the Relativized SUBJECT approach, the implicational relationship between LD binding of *ziji* and subject-orientation of *ziji* in learners' L2 grammars of Chinese is not upheld in this paper. The findings of my study support the transfer part of the Full Transfer/Full Access model of SLA proposed by Schwartz and Sprouse (1994, 1996) in that L1 transfer is found in the initial representations of Russian and English speakers' L2 Chinese. Overall, the syntactic behaviour of L2 learners falls within the range sanctioned by UG.

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The Early Acquisition of Determiners in Yucatec Mayan and Spanish[*]

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This study compares the early acquisition of determiners in two unrelated languages: Spanish and Yucatec Mayan. By conducting Elicited Imitation Tasks we found out that determiners are part of the mental grammar of the Spanish speaking children earlier (2;00) than in the Yucatec children (3;00). We attribute it to the different nature of the languages and a special characteristic of the Yucatec input.

1 INTRODUCTION

Some researchers have documented that determiners appear very early in the acquisition of English; according to Lieven et al. (2003) determiners are the first grammatical words which were used productively by Annie, the girl of the study. These researchers documented all of the new and old syntactic structures used by the child. At the age of 2;01,11 Annie still used a conservative language in which a small amount of words were novel (said in exactly the same way) and did not show any evidence of grammatical rules being applied, except for the case of determiners and the possessive morpheme that seemed to be use in a more abstract way (Lieven *et al* 2003:349) From a very different perspective, Kedar et al.(2004) found that children learning English are sensitive to determiners as the functional head of NP at the age of 24 months (Kedar *et al.* 2004).

Determiners also seemed to appear early in children learning Spanish, another Indo-European language. In the study about the acquisition of demonstratives conducted by Espinosa (2002) it was found that determiners are already being used by the child at the age of 2;04. Also in Muñetón Ayala (2005) it is documented that children learning Spanish are using determiners in spontaneous speech, although with minimal frequency.

However, in the analysis of spontaneous speech of two Yucatec Mayan children, clear presence of determiners were not found until the age of 2;07. This is important if we consider that the Mayan language has already put into debate the Noun bias argument, which means that the acquisition of languages can differ typologically. In Mayan languages, children learn verbs before nouns (See for instance Brown 1998).

In this paper we discuss the different nature of determiners in Yucatec Maya and Spanish and how they differ in their process of early acquisition.

2 DETERMINERS IN ADULT SPEECH

2.1 Yucatec Mayan

In Yucatec, definite articles and demonstratives are formed by the same grammatical expression. It consists of two particles formed by what has been called by Hanks (1990) a base *le* and a glottal enclitic *–a', proximal; -o', distal or neutral[1]; -e', topicalizer; -ti',*

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[1] Bohnemeyer (submitted) proposes that this enclitic has also characteristics of a neutral term.

anaphoric. The base contains the grammatical meaning of definiteness and the enclitics hold the deictic meaning.

(1)   **Le**   pek'**-o'**
        DET   dog-ENCL.DIST/NEU
        'The dog'/ 'that dog'

The definite article can be expressed without either the base or the enclitic; it is possible to convey the meaning in the context of enunciation. The same stands as for to distinguish when are they being used as articles or demonstratives, one important clue in this respect are gestures; these are uttered spontaneously with demonstratives to point the referent. The base and the enclitics mark the Noun Phrase; they are found both Sentence Initial and Sentence Final (Monforte 1999).

It is interesting to point out that deictic words in Yucatec form not only the discontinuous shapes of the determiners but also the continuous shapes of the pronouns.

(2)   (a) Continuous: Le   (l)   -o'
                        DET   EP   ENCL.DIST
                        'That one'

        (b) Discontinuous: Le   paal –o'
                        DET   child.ENCL.DIST
                        'That boy'/ 'the boy'

This characteristic of continuity and discontinuity belongs not only to demonstratives and the definite article, but to all of the Yucatec deictics. There are 14 bases and 6 enclitics, they do not all combine with each other, but the show certain combination rules. The following example shows the continuity and discontinuity of the locative adverbs:

(3)   (a) Continuity: Te'el   -a'
                        LOC ENCL.PROX
                        'Here'

        (b) Discontinuity: Te   che' -a'
                        LOC   wood-ENCL.PROX
                        'The piece of wood over there'

In everyday speech sometimes the lateral of the definite article and the demonstrative base is elided.

(4)   Ja'ats'   men **e**   kax -ito **-o'**
        Hit-PASS PREP.DET   hen-DIM.DET F
        "It was hit by the hen"

As we can see from (4) the lateral is elided and sticks to the word that precedes it, like a suffix.

2.2 Determiners in Spanish

In contrast to Yucatec, the Spanish language has two different expressions for articles and demonstratives. However, articles (*el, la, lo*) and the far distant demonstrative (*aquel,*

aquella, aquello) of Spanish come from the Latin demonstrative *ille ,illa, illud*[2].   This statement seems to also be true for English language, according to Lyons (1977). The English article 'the' comes from the demonstrative 'that'. This is noteworthy if we recall that in Yucatec articles and demonstratives are actually the same expression.

2.1.1 Definite Article

In Spanish, as any other Romance language, gender and number produce the paradigm of the definite article. It inflects in gender and number, not only singular and plural, but also neuter.

	Singular	Plural	Neuter
Masculine	El	Los	
Feminine	La	Las	
Neuter			Lo

Table 1

Paradigm of Spanish article inflection

The article must also agree with the noun it modifies; sometimes the agreement is phonologically accurate, but not always, for instance, feminine nouns regularly have an –a ending, but it is possible to find feminine nouns with an –o ending:

(5)   Phonological accuracy: **La**   ris-**a**
                                 ART.FEM.SG   laugh-FEM.SG

(6)   Non phonological accuracy: **La**   man-**o**
                                     ART.FEM.SG   hand-FEM.SG

The meaning of the definite article in Spanish has been traditionally defined in terms of the shared and known information it conveys and its reference to uniqueness. The former alludes to the introductory topics in discourse; once they are identified by speaker and addressee they are referred by the definite article. The latter is used to specify an entity for its particular characteristics, as in the utterance: "The human being is able to speak". This uniqueness of the human being as the only one who shows this characteristic is expressed by the article.

2.1.2   Demonstratives

Demonstratives also inflect in gender and number and must agree with the noun.

	Singular	Plural	Neuter
Masculine	Est-e	Est-os	
Feminine	Est-a	Est-as	
Neuter			Esto

Table 2

Inflection of the proximal demonstrative in Spanish

In general, Spanish masculine takes an –o ending, however, the demonstrative masculine is expressed with suffix –e and neuter takes the –o suffix. While neuter definite articles can be used as determiners, the demonstrative neuter is never used as a determiner.

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[2] The third person singular pronoun of Spanish also comes from this Latin demonstrative.

2.3 Child Language

Demonstratives appear very early in the process of ontogeny in many languages.   Clark (1978:97) suggests that this is because, as every deictic word, demonstratives are a clear link between words, pointing and the world. She proposes four stages in which demonstratives are acquired: (i) children start pointing, (ii) they point and utter additionally demonstratives alone, as pronouns, (iii) they point and utter the demonstrative as determiner with its noun, (iv) children can eventually get rid of pointing.

2.1.1 Child Language: Spanish

There are two studies of spontaneous speech of children learning Spanish which can account for the fact that demonstrative determiners are used early by the children, and as Clark (see above) argued, pronouns precede them. In the analysis of the transversal data of children learning Castilian Spanish made by Muñetón Ayala (2005:326), it is shown that demonstrative determiners are already being produced at the age of 24 months: 4% in Muñetón Ayala in contrast to deictic adverbs and pronouns. In the case study of a child learning Mexican Spanish,[3] Espinosa (2002) documents 15% of determiners in contrast to 85% of pronouns from the age of 1;02 to 3;00 years old. The first determiners are found in Flor at 2;03 showing no agreement:

(7)   *Eto   capulino
        This.PROX.**N**   Mexican Black Cherry.**M**
        Goal: Este capulín
        'This Mexican Black Cherry'

Children acquiring Spanish need to master the whole paradigm of determiners plus agreement. According to Perez Pereira (1991), errors like (7) are found because children learning Spanish pay attention to phonological cues when assigning gender to determiners. Definite articles are also found early in child Spanish, although error-free article-noun agreement is mastered around the age of three years, and due to the complexity of these morphemes, adult-like competence probably around the age of six (Clark 1985).

2.1.2 Child Language: Yucatec

There is still little evidence on how the acquisition of Yucatec takes place, and no study has yet specialized in determiners;[4] however Pfeiler documents that the "acquisition of morphology (in Yucatec) is first characterized by deictic and topicalizer suffixes" (2002:80) and that the speech of Armando, one child in her study, from 1;01 to 1;07 shows "an adequate use of the nominal but only partial use of the verbal morphology" (Pfeiler 2006:338). Due to the difficulties to define forms and function of one word utterances in child's languages, Flores Vera (1998) analyzed the data of the same child and he argues that deictic words are the third lexical category employed.

  In my own study of Armando from 1;02 till 1;07, I also found that deictics are very frequent and combine with nouns and other deictic words. I show as follows some representative examples:

(8)   e pek' (1;03)
        ? dog

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[3] The study was made with C. Rojas *corpus* (ETAL) in the UNAM.
[4] The only article on the acquisition of indefinite articles by Pfeiler is still in process.

(9)   pa'al-o' (1;06)
        pamper-ENCL.DIST

(10)   le   te   - o'   (1;07)
        DET LOC   ENCL.DIST
        'The one over there.'

(10) was the most complex utterance with a determiner found in the speech of Armando; the rest were utterances like (8), so we cannot be sure which type of deictic he was using. We also analysed the speech of his cousin Sandi, and found no adult-like determiner until the age of 2;07. Since we found the presence of discontinuity very early we wondered why the determiner along with a noun seemed not to appear at all. One possible answer was the input, so we compared the frequency of use of the deictics of Armando against the input. Except for the modal *bey* and the demonstrative *le*, we could explain the frequency of use of Armando in terms of the frequency of the input.   The presentative base *je'el* is the one with the highest frequency in both; we think that the child's use of this deictic is very high not only because it is the most frequent but also because it is very useful to link by point words and the physical word. This deictic has a very similar function to the French *voilá*. It introduces a topic and gathers the attention of the addressee.

3 AIM OF THE RESEARCH

Since all that we know about the age of acquisition of determiners in both languages comes from the analysis of spontaneous speech, we cannot be sure when they start being part of the mental grammars. So far we can tell that a Yucatec child uses the enclitics early in acquisition, particularly characterised by the use of topicalizers. Apparently Spanish speakers use both determiners very early but they do not seem to be very frequent in the speech. In this study we pretend to answer the following questions: (i) When do determiners begin to be part of the mental grammars of both Spanish and Yucatec children? (ii) Do children acquiring different languages follow the same routes? (iii) Why? We take into account that in spontaneous speech when spoken sentence final Yucatec determiners are difficult to perceive, they get attached to the preceding word and drop the lateral. For this reason we focus on sentence-final determiners.

4 METHOD

I conducted elicited imitation tasks with 13 monolingual Yucatec children and 20 monolingual Spanish-speaking children from the ages 2;00 to 5;00. To encourage the smaller children to "play" with us, we started with a 7;00 year old child whose responses were used as the comparative pattern. The experiments were conducted in Quintana Roo, Mexico in two Mayan communities: Campamento Hidalgo and Punta Lagunas, and the Spanish-speaking children were recruited in two different schools in Cancún, Quintana Roo, Mexico. Children were told that they had to repeat a story, exactly as said to them. In the Spanish sentences demonstratives and definite articles were uttered. Sentences like (11) were used in the Yucatec Mayan batteries:

(11)   Wi'ij   **e**   kaax-**o'**
        Hungry   DET   hen-ENCL.DIST/NEU
        'The hen is hungry'

The Spanish sample is given in (12):

(12)   Cierra   los   ojos **la**   gallina
         Close-VB 3SG   DET   eyes DET.SG. hen
         'The hen closes its eyes'

Both stories were about different animals wanting to sleep, eat and play. A bilingual adult speaker of Yucatec from the same area that I trained in applied the test to the Yucatec children. There were 3 batteries of 6 utterances each.

5 RESULTS

As for the Yucatec sample we had difficulties to talk to these children because they are not used to strangers. They were very shy to talk to us so either their speech had very low volume or they took a hand or the clothes into the mouth which made it harder to understand them, for this reason we decided that 12 out of 14 determiners repeated by the Yucatec children show mastery of determiners, since 7;00 year old girl uttered this number of determiners. Only up to three-year-old Yucatec children reach this number.

Age	Number of determiners repeated	Percentage (%) of determiners per child
2;00	0 out of 14	0
2;00	0 out of 14	0
2;08	6 out of 14	42
2 years old	6 out of 42	**14**
3;00	12 out of 14	85
3;04	4 out of 4	100
3;07	11 out of 14	78
3;08	13 out of 14	92
3 years old	40 out of 46	**85**
4;00	12 out of 14	85
4;00	8 out of 8	100
4;08	12 out of 14	85
4 years old	32 out of 36	**90**
5;00	11 out of 11	100
5;00	14 out of 14	100
5 years old	25 out of 25	**100**
7;00	12 out of 14	**85**

Table 3

Yucatec speaking children

The results appeared to be inaccurate due to the fact that not all the children repeated all of the sentences, in the cases where other adults were present they started laughing and that made it impossible for us to make the children to keep on talking. However, according to the percentages, determiners seemed to be part of the mental grammar of Yucatec children up to the age of 3;00, if we ignore the results of the children that did not complete the tasks, we obtained 85% of determiners uttered per age, except for the 5-year-old children. Two-year-old children made mistakes like the following:

(13)   (a) Adult: Wi'ij **e** kaax**o'**
                 'The hen is hungry'

        (b) Child*: *Wi'ka kaaxo'*

'Hungry he hen.ENCL.DIST/NEU'

As for the Spanish-speaking children we found a very different view, they were basically all able to utter the determiners.

Age	Number of determiners repeated	Percentage of determiners reapeted
4 children Mean age 2;06	14 out of 14	100
1 child age 3;04	12 out of 14	85
4 children Mean age 3;06	14 out of 14	100
5 children Mean age 4;06	14 out of 14	100
5 children Mean age 5;06	14 out of 14	100

Table 4

Spanish-speaking children

Two-year-old and sometimes also three-year-old children repeated the demonstratives without /s/ 'ete' or the definite article without /l/ but it was considered irrelevant.

6 CONCLUSIONS

These results lead us to the conclusion that determiners within the noun phrases are mastered earlier in Spanish than in Yucatec. It is possible that children take different routes in the acquisition of their languages. The route suggested by Clark (1978) in which children's use of determiners is preceded by pronouns might be the one taken by the Spanish speakers. Children acquiring Spanish deal later with the complexity of determiner agreement. On the other hand, Spanish-speaking children also take the noun-bias, and definite article is heavily related to nouns in Spanish, as they are obligatory in many contexts.

In Yucatec we found that determiners are very frequent in adult speech, but they remain ambiguous, which might make it difficult for children to perceive them. Furthermore they can be used with nouns and verbs, adjectives, etc. It is also clear that while determiners in Spanish are a lexical category, in Yucatec they are morphemes, and then pronouns might not be the link to determiners in Yucatec. We observed that the highest frequency of deictics in Yucatec is given by the presentative j*e'el-* which might be the deictic which helps Yucatec children to link words and the physical world, while demonstratives might be the route for Spanish speaking children.

Another possible route taken by Yucatec children are the enclitics. Pye (1992) already observed that children learning Quiche Maya pay attention to what is at the end, and they start using suffixes due to their perceptual saliency (also see Pye, Pfeiler, de Leon, Brown, & Mateo 2007). The two-year-old children in my experiment who failed to utter determiners always omitted the base *le* but were always able to repeat the glottal enclitic. Aksu and Slobin (1985) have already argued that children learning morphologically complex language, the case of Yucatec, first start producing complex words rather than multiword utterances, like Spanish-speaking children. It is likely that Yucatec children failed to repeat the multiword utterances of my experiment because they master first nominal and verb morphology.

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Moral Incoherence in Documentary Linguistics: Theorizing the interventionist aspect of the field[*]

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Recent linguistic literature abounds with overtly moral language justifying linguists' intervention in endangered language situations. To use Matras' disparaging characterization, language revitalization is no longer 'just a topic of research, but a mission' (2005: 226). Documentary linguists thus find themselves in the unusual situation of having developed an interventionist stance that superficially resembles the rhetoric of missionary linguist counterparts, despite many academics' continuing uneasiness about missionary methods and motives. Through a broad survey of the recent endangered language literature, I argue that the contrast between documentary linguists' use of moral language and their rejection of the moral contributions of missionary linguists starkly highlights the moral incoherence that philosopher Alasdair MacIntyre identifies with post-Enlightenment attempts to find a shared rational basis for morality. This incoherence contrasts with the missionary linguist's worldview, which I suggest typifies the tradition-based rational enquiry advocated by MacIntyre. The moral framework of missionary linguists includes allegiance to the Christian community rather than to the academy; the cultivation of virtue as part of identity, and the belief that moral judgments can have a rational basis. In short, the clash between academic and missionary linguists rests on a fundamental disagreement about the terms of moral debate. I conclude that fruitful engagement can only occur if academic linguists stop accepting particular claims to truth only as illuminations of supposedly universal values, and, like their missionary colleagues, situate their moral language within a particular tradition.

1 INTRODUCTION

Documentary linguistics is a relatively new subfield of linguistics that distinguishes itself from descriptive linguistics in terms of its increased focus on primary data, its multi-disciplinary approach, and its heightened concern for cooperation with, and involvement of, the community of endangered language speakers (Himmelmann 2006:15). As the improvements in technology that enable large-scale documentation are combined with a growing awareness of the looming losses in linguistic diversity, it seems that recent theorizing has begun to move 'away from the Saussurian solipsism that has been our past tendency, toward a much broader involvement in language as it appears on the world stage' (Woodbury 2003: 39).

This recognition that 'crucial stakeholders' of language documentation (Woodbury 2003: 35) exist beyond the academic community led in the early 1990s to a debate that Lise Dobrin would later call a 'pivotal moment in the history of the discipline' (2005: 44). This debate centered on the question of whether linguists, in their encounters with the speakers of little-known, endangered languages, should attempt to maintain moral neutrality and 'professional detachment' (Ladefoged 1992: 811). Many linguists have followed Dorian's lead in insisting that

such detachment is not tenable, since both action and inaction on the part of linguists are unavoidably political (Dorian 1993: 575) and 'interest laden' (Collins 1998: 259).

It has become relatively common to hear linguists interpreting the outcome of such debates as progress in the right direction: the necessary and inevitable shedding of delusions of objectivity that were a cover for the misuse of power. For example, Dorian deplores linguists' 'dispassion' as having contributed directly to the loss of 'rich linguistic diversity' (1999: 37), while Grinevald is but one of many voices calling linguistic colleagues to the recognition that involvement in documentation and revitalization efforts is a 'responsibility' that linguists should accept (1998: 159). The increase in overtly moral language justifying linguists' intervention in endangered language situations has even led some to point out the similarity between EL (endangered language) and missionary rhetoric. For example, Matras disparagingly characterizes language revitalization as no longer 'just a topic of research, but a mission' (2005: 226).

In this paper, I argue that the outcome of recent debate should not be interpreted as a kind of moral awakening. Instead, I present two kinds of evidence to support the claim that recent EL moral debate is fundamentally incoherent. First, I demonstrate the parallels between the debate among documentary linguists and the moral incoherence that Alasdair MacIntyre (1985) identifies with modern, post-Enlightenment attempts to find a shared rational basis for morality. Second, I suggest that the generally negative reaction of academic linguists to their missionary counterparts provides additional evidence for the incoherence of EL rhetoric by illuminating a fundamental disagreement about the appropriate terms of moral debate.

2 MODERNITY AND MORAL INCOHERENCE

Moral philosopher Alasdair MacIntyre has argued that the characteristics of moral discourse in Western post-Enlightenment society are evidence of an advanced state of moral decline. He claims that modern culture is characterized by a shared belief in emotivism: a worldview according to which all moral utterance disguises personal preferences and is essentially manipulative and illusory (1985: 14). The crucial claim of emotivism is that a rational basis for morality has never existed: moral language, with its appeal to impersonal ethical standards, has always been 'rationally interminable' (1985: 12).

If emotivism is true, then the only coherent moral option, according to MacIntyre, is to reject completely the façade of moral language and to embrace a Nietzchean nihilism (1985: 111). However, MacIntyre makes the radical claim that moral theory *did* at one time embody 'genuine objective and impersonal standards' (1985: 19). He traces the historical process by which a shared rationale for morality was lost, through secularization and the rejection of Aristotelianism to the subsequent failure of Enlightenment philosophers Kant, Kierkegaard, Diderot and Hume to come up with a rational vindication of morality. He then advocates the resurrection of a pre-modern moral philosophy which claims a rational basis for making moral judgments.

In this section, I situate the ongoing ethical debate among documentary linguists in the framework of MacIntyre's claim. I suggest that there are four significant parallels between the rhetoric used in this debate and the moral incoherence of modernity as described by MacIntyre.

2.1 Agreement about the lack of a rational basis for morality

First, several linguists who have developed elaborate moral arguments for intervention in endangered language communities also admit that the right and wrong of these arguments does

not seem to be rationally decidable. For example, Grinevald explains why she feels it is acceptable to elaborate an 'agenda for the linguistic profession in the face of the endangerment situation' (1998: 124) without trying to sustain this rationally. Her statement typifies the belief in emotivism as described by MacIntyre:

> I will not argue here for why linguists and the world at large should be concerned with the fate of endangered languages, convinced as I am… that it is a question not really amenable to rational thinking, and more a matter of ideology than many want to admit. (1998: 154)

Another example of the awareness that moral language is used as an expression of personal preference is Ken Hale's description of why one should be concerned about language loss: having presented the 'self-serving perspective' of linguists concerned about losing data, he notes that the pain of a personal experience of language loss can present motivation to act 'as much as any other consideration' (1998: 213). In other words, as long as the linguist and the endangered language speaker have some shared desire to preserve language, one reason is as good as another – it is a matter of personal experience.

In short, several influential documentary linguists seem to share a belief in emotivism, confirming MacIntyre's observation.

2.2 Unresolvable yet interminable ethical debate

As MacIntyre points out, modern ethical arguments may logically follow from their premises and thus be deductively valid, but the premises may represent rival claims between which, given the moral incoherence of our culture, there is no way to rationally decide (1985: 8). The ethical debate among documentary linguists appears to be of this incommensurable type. The largest potential conflict is between the wishes of endangered language speakers and those of linguists and of humanity in general. Giving the speech community their 'rightful central place' (Grinevald 2003: 70) or even allowing them to completely dictate the field linguist's agenda (Wilkins 1992) potentially conflicts with the view that the ongoing tragedy must be stopped, leading to the requirement that the attitudes of the speech community be 'sensitively managed' (Crystal 2003: 19) and to the attempt to 'change…erroneous public perceptions' (Annamalai 2003: 165-166). As Dobrin (to appear) perceptively points out, linguists' 'activist discourse clearly prepares us to respect and support certain choices more than others' (9).

This conflict emerges in different forms throughout the EL literature. It extends into mundane questions of data ownership, such as the debate about whether documentary data should belong to linguists and '"drive-by" typologists' or to the community (Nathan & Austin 2004: 181). It also surfaces as a tension between the potentially conflicting goods of language preservation and economic development. In Nettle and Romaine's view, for example, one must ultimately focus on preserving 'cultures and habitats' as the places where indigenous languages thrive (2000: 179). However, others insist that linguists' efforts to encourage communities to preserve their 'ancestral cultures' make the emergence of new ones, better suited to the modern world, seem 'necessarily maladaptive' (Mufwene 2002: 21-22).

Linguists are not unaware of the tensions peculiar to this debate. For example, Newman emphasizes that the goals of revitalization and documentation directly conflict with each other, leading to the paradox that 'the good-hearted, well-meaning linguist, to whom we can all extend our admiration, will do less of a job of basic documentation than one would have hoped for' (2000: 6). However, these questions do not seem to have moved significantly closer to resolution, and many linguists are unwilling to admit that different views may be fundamentally incompatible. For example, Nettle and Romaine hold out the optimistic promise that 'the active

cultivation of stable multilingualism can provide a harmonious pathway through the clash of values inherent in today's struggle between the global and the local, between uniformity and diversity' (2000: 197).

In addition, the moral and ethical fervour of linguists' rhetoric sometimes contrasts with anti-climactic plans of action. A common approach has been to attempt to identify and act on areas of commonality, based on the assumption that such areas can always be found. For example, Woodbury recognizes a 'wide range of agendas' (2003: 43) and chooses to accommodate multiple perspectives by focusing on documentation as the 'common ground' between activist and academic domains (Woodbury and England 2004: 124), thus constructing a relatively neutral discipline centered on 'text curation' (2003: 41).

Overall, the participants in the EL debate, while arguing vociferously about various ethical dilemmas, seem to believe that even if these debates cannot be solved rationally, one can always find enough common ground to ensure that actions will be minimally disturbing to all concerned.

2.3 Unmasking

According to MacIntyre, a 'most characteristically modern activity' in our state of moral decline is the attempt to expose how another's arbitrariness and self-will is hiding behind a mask of morality (1985: 72). The EL rhetoric abounds with examples of 'unmasking', as classically exemplified in Dorian's deconstruction of Ladefoged's supposed political and moral detachment. However, even those who seem most convinced of the impossibility of ideological objectivity are in turn unmasked by others. For example, Matras, who like Ladefoged holds to the possibility of a purely academic role for linguists, uncovers the aspirations to heroism that he believes underlie the 'moral high ground' recently taken by linguists (2005: 228). Similarly, Muehlmann highlights ways in which the concept of biolinguistic diversity is used to unify contradictory views by simultaneously amplifying the voices and interests of indigenous language speakers on the one hand and essentializing them as icons of endangerment on the other (2004: 144). Thus, despite the increasingly common claim that overtly moral principles must underlie any ethical intervention in endangered language situations, academics frequently accuse each other of using moral discourse to mask self-interest and personal preference.

2.4 Universalist discourse

MacIntyre characterizes modern society as lacking a moral tradition, within which morality could be rational and decidable (1990: 60). Other scholars have suggested that without a particular tradition of inquiry, one's allegiance will be to a universal, supra-tradition in which the particular is an illumination of the universal (Hauerwas 1985: 5).

Universalist discourse in EL rhetoric is manifested in the tendency to emphasize the relevance of language loss to questions of planetary survival, even to the point of downplaying the importance of individual traditions and languages. For example, Crystal (2000) emphasizes that the tragic element of language loss does not derive from the interest of an individual language 'in its own right' (32) but from the potential destabilization of the entire ecosystem when diversity is lost, and the resulting reduction in the 'adaptational strength of our species' (34). And for Dalby, the reasons to 'stop losing language' are 'valid not just for individual communities and their speakers but for all of us and our children' (2002: 281).

Related to the depiction of language endangerment as a problem that affects humanity as a whole is the assumption that particular linguistic ideologies must be fundamentally in agreement with this view. Hence Dorian claims that, when given the chance, people will choose to save their language (1999: 39). Dobrin (to appear) notes that documentary linguistics is not very good at absorbing the implications of 'language program failure' (1). Documentary linguists seem to believe that there cannot really be people who do not want to save their language, or whose fundamental allegiance, as long as they have a modicum of global awareness, is not to the future of the entire planet.

In this section, I have offered a reinterpretation of the moral debate occurring among documentary linguists. The parallels between the modern moral decline posited by MacIntyre and the types of discourse used by EL scholars suggest not only that EL rhetoric is morally incoherent, but also that, despite disagreement and mutual accusations of self-interest, linguists share essentially the same terms of moral debate. Specifically, linguists seem to agree that it is appropriate to use moral language as if it were objective, despite its lack of a shared rational basis. There is implicit consensus on the acceptability of using objective-sounding moral language oneself while continuously unmasking its arbitrary character when it is used by others. Furthermore, there is agreement that actions must be constrained by the incompatible values of various stakeholders, so that agendas are built on the lowest common denominator. In the following section, I show how the reaction of documentary linguists to the moral orientation of missionary linguists makes the moral incoherence of EL rhetoric all the more evident.

3 ACADEMICS AND MISSIONARY LINGUISTS: DIFFERENT TERMS OF DEBATE

Although linguists have historically reacted quite negatively to the moral language used by missionaries (e.g., Stoll 1982, Lewis 1988), it might seem that documentary linguists are now in a somewhat different position with regard to missionary linguists. As I have shown, the emergence of moral rhetoric in documentary linguistics means that missionary linguists are no longer alone in their use of overtly moral language to recruit people for a cause. Moreover, documentary linguists with a global language preservation agenda can no longer afford to ignore the role of major players in language documentation efforts such as the SIL, whose 6000+ members are involved in language work in nearly 1400 languages (Wycliffe Bible Translators 2005).

Despite the superficial similarities between EL and missionary rhetoric, however, documentary linguists have not generally become more appreciative of missionaries' moral orientation. In this section, I argue that the reaction of documentary linguists to the moral orientation of SIL linguists constitutes additional evidence for the moral incoherence of EL rhetoric. The way that documentary linguists respond to SIL reflects their awareness of three areas in which SIL has a fundamentally different moral framework: their allegiance to the church and Christian community rather than to the academy; their cultivation of virtue as part of their identity, and their belief that there is a rational basis for making moral judgments. These differences are the same as those identified by MacIntyre and other scholars as dividers between tradition-based moral enquiry and the modern allegiance to a universalist supra-tradition that can accept particular claims to truth only as illuminations of supposedly universal values (Hauerwas 1985: 5).

3.1 The cultivation of virtue/character as a part of identity

First, some linguists have noted that their missionary counterparts explicitly subordinate their technical expertise to a focus on virtue and character. For example, Dobrin (to appear) has noted that 'the missionary model' in Melanesia involves building long-term exchange relationships, and notes that SIL members consider this long-term commitment to be fundamental to their work, explicitly including training in this area as part of their methodology (50).

3.2 The belief that there is a rational basis for making moral judgments

Second, some linguists are concerned that SIL members really believe the moral statements they make, even to the point where this affects their actions. For example, Everett states that his aversion to working within SIL is based on his observation that 'solid science' is not their first priority, since in his view SIL linguists produce good documentation only as a 'by-product of…sectarian objectives' (2003: 144-145). Such criticism of SIL's overtly moral objectives is ironic in view of the increasing insistence that documentation and preservation interventions cannot and should not be apolitical or morally neutral. However, if the moral language used by linguists is indeed shaped by emotivism, then missionaries' belief that moral language is rationally decidable will be considered objectionable by those who, like Everett, use such language only for its utility.

3.3 Allegiance to the church/Christian community rather than to the academy or state

Third, some linguists notice that SIL linguists appear to hold a fundamentally different political allegiance than they do. In a discussion of the possibilities of collaboration between documentary linguists and SIL in South America, Grinevald's limited praise for SIL's presence in South America is for those individual linguists whose 'theoretically oriented work' has 'an impact on the field of linguistics at large' (1998: 146). Grinevald's criticism of SIL's methods similarly focuses on the failure of SIL to bring more South Americans into the fold of academia, rather choosing to 'train native speakers in translation work' (1998: 146). Several theologians have suggested that within a Christian political worldview, primary allegiance is to the church as a political community whose voice to the world is always shaped by its particular identity, and whose main task is to form and sustain a community whose members do not give their primary allegiance to other polities (cf. Hauerwas 1985: 12; Yoder 1997). Within such a framework, it seems that Grinevald and SIL linguists only differ in the community to which they are trying to recruit potential converts.

In sum, what really prevents engagement between academic and missionary linguists is that the two do not agree on the terms of debate. For SIL, the terms of debate include allegiance to the church, the cultivation of virtues, and a preference for tradition-based moral inquiry over universalist rhetoric. In the current context, academics cannot ignore SIL without giving up their cherished desire to save as many languages as possible. However, it is unlikely that SIL will allow their views to be co-opted to serve as particular illuminations of a universal, grand scheme of intervention to save humanity.

4 CONCLUSION

Documentary linguists find themselves in the unusual situation of having developed an interventionist bent that superficially resembles the rhetoric of missionary linguists, despite their profound uneasiness about SIL's methods and motives. Such a situation invites an analysis of the true difference between academic and missionary uses of moral language. In this paper, I have shown that, despite the increasing use of moral language in public academic inquiry, most scholars hold to emotivism as defined by MacIntyre (1985), eschewing any tradition of inquiry within which morality could have a rational basis. This contrasts with the worldview of missionary linguists, whom I suggest typify the tradition-based rational enquiry advocated by MacIntyre.

MacIntyre's main claim is that the fragmented and contradictory moral language often used today does not prove that morality has always lacked a rational basis, but rather reflects a historical process in which moral utterance, stripped of its 'teleological context', has become meaningless (1985: 55). He insists that tradition-based enquiry is the only truly rational form of enquiry (1990: 60) and that such enquiry does not preclude engagement between traditions, but is in fact a prerequisite for genuine engagement (1990: 219). If MacIntyre is right, then the moral language used by missionary linguists may be more internally consistent and intellectually honest than the universalist discourse used in much EL rhetoric. I suggest that fruitful engagement can only occur if academic linguists begin to speak the same language as their missionary colleagues by situating their moral language within a particular tradition.

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Language Acquisition in Autistic Children: A Longitudinal Study

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The acquisition process of autistic children differs from that of normal children (acquisition by immersion) in that they need speech therapy support. Additionally, only half of autistic patients speak as adults and their linguistic level remains lower than that of normal subjects (Howlin 2003). Despite the importance of language in the diagnosis (it is one of the main criteria for autism in DSM-IV (1994)) and the deficits of autistic people, longitudinal studies of language development in autistic children don't exist. The aim of our study is to describe language acquisition in autistic children, and to propose more precise hypotheses regarding the language acquisition delay, as well as answering other questions:

Why is there a severe delay of acquisition in verbal autistic people (first words: 38 months against 12 in normal children)?

Why do Aspergers show a less severe delay (1st words: 15 months)?

How can we explain the identical delay between first words and first combinations in autistic (14 months) and SLI children; and that it's higher than in normal (6 months) and even in Asperger children (11months)?

There are three main (mutually compatible) hypotheses: (a) Dissociation between comprehension and linguistic production in autistic children. (b) Deficit in ToM (Theory of Mind) in autistic population, in addition to an SLI in verbal autistic children explaining the delay. (c) Deficit in ToM in all autistic population but with different degrees of impairment. To test these assumptions, we have collected and transcribed corpora from nine autistic children at different stages of language acquisition. We have compared our corpora with those of healthy and SLI children at similar stages. Additionally, we use parents' questionnaires, plus an experimental test (borrowed from Savage-Rumbaugh et al., 1993) to evaluate the first hypothesis. We do standard false belief tests to assess ToM.

1 INTRODUCTION

One of the major characteristics of the autistic syndrome is an important delay in language acquisition (DMSM-IV 1994). The acquisition process of autistic children also differs from that of normal children in that autistic children do not seem to acquire language through immersion as normal children do but need speech therapy support. Additionally, only about half of children with autism speak as adults and their linguistic level remains lower than that of normal subjects (Howlin 2003). Despite the importance of language in both the diagnosis and the deficits of autistic people, longitudinal studies of how language develops in autistic children do not exist.

There are three important criteria in the definition of autism:
- Communication and Socialization deficits
- Absence of symbolic play
- Repetitive behavior

Patients within the autistic syndrome split up in three categories:
- Asperger people who have a slight delay in language acquisition but with a normal acquisition;

- Verbal autistic people who show an important delay in language acquisition. Moreover, whereas normal children acquire language by immersion, autistic children need important speech therapy support;
- Non-verbal autistic people who never acquire language

Let us compare the timing of language acquisition processes in four different populations (normal, Asperger, Specific Language Impairment (SLI), autistic):

Populations	First words	First combinations	Delay word/combination
Normal	11 months	17 months	6 months
Asperger	15 months	26 months	11 months
SLI	23 months	37 months	14 months
Autistic	38 months	52 months	14 months

Table 1

Comparative chronology of language acquisition

Regarding first word production, autistic children are late not only when compared to normal children (38 months vs. 11 months) but also when compared to Asperger children (15 months). This delay increases for first combinations. Additionally there is a delay between first words and first combinations, which is considerably longer in autistic children (14 months) than in normal (6 months) and Asperger (11 months) and indeed is equivalent with the delay for SLI children. These data raise some questions:
- Why is language absent in 50% of autistic people?
- How can we explain the severe delay of acquisition in those autistic people (first words: 38 months against 12 months in normal children) who finally acquire language?
- How can we explain the less severe delay of acquisition (1st words: 15 months) shown by Asperger patients?
- How can we explain the fact that the delay between first words and first combinations is identical in autistic (14 months) and SLI children; and that it is higher than in normal (6 months) and even Asperger children (11 months)?

We propose three hypotheses:
- There is a dissociation between linguistic comprehension and production in autistic children. In other words, they're linguistically competent and their linguistic deficit lies in their performance.
- Given that the autistic syndrome population suffers from a deficit in ToM (Theory of Mind), in verbal autistic children, an SLI is compounded with the deficit in ToM, which explains the delay and the difference with the Asperger population.
- Finally, autistic children might have a problem limited to ToM, as do Aspergers. However, the difference in language acquisition between Asperger, verbal and non-verbal autistics could be due to different degrees of impairment in ToM in the different groups (Asperger, verbal and non-verbal autistic patients).

In order to test the first assumption, we did Savage-Rumbaugh's test and we constructed a comprehension questionnaire that parents and educators have had to fill in. To test the two last hypotheses, we have done false-belief tests and a corpus comparison.

2 METHOD

2.1 Participants

Participants were 9 children with autism (3 girls, 6 boys) between 3 years 9 months and 9 years 2 months at the beginning of the study. All children were recruited at the Isatis department of the Saint-Jean-de-Dieu hospital (Lyon, France) where they were initially diagnosed with DSM-IV (1994) Autistic Disorder. They had a mean Child Autism Rating Scale Score (CARS) of 38.64 (standard deviation = 12; range = 35-47) and developmental age between 12-16 months and 28-32 months at the beginning of the study (January 2007).

We have divided children in three groups: first words, first combinations and first phrases, as evaluated relative to mean length of utterance (MLU), i.e., respectively 1, 2 and superior to 2 (Victor, Eliott, Lyne = 1; Matthieu, Charlotte, Félix = 2; Maeva, Ahmed, Grégory > 2).[1]

2.2 Procedure

We collected corpora of nine autistic children who are at different stages of acquisition. Children have been (and will continue to be) recorded approximately every three months and during 3 years at the Isatis and Tarentelle medical daycare centers. Children are recorded in three types of situations (work, lunch-time and play-time). We have done Savage-Rumbaugh tests and false belief tests at the end of the first year.

2.2.1 Corpora collection

We transcribed the corpora according to the recommendations of CHILDES (http://childes.psy.cmu.edu), an international project on language acquisition which puts on line corpora in various languages of normal or language impaired children. We then compared our corpora with those of normal children and children with SLI at similar stages of language acquisition which are available on the site of CHILDES.

2.2.2 Savage-Rumbaugh tests

We have adapted Savage-Rumbaugh experiment in order to evaluate the comprehension of our autistic children. Originally, this experiment aimed to compare linguistic understanding between Kanzi (a bonobo in the LRC in Atlanta) and an 18-month-old child, with the following hypothesis: the competence of the bonobo is better than his performance, just as is the case in normal children. Similarly we wanted to see whether, in autistic as in normal children, language understanding precedes language production.

This experiment consists in asking the subject to perform different actions which are described linguistically. Here are the different sentence types, that, following Savage-Rumbaugh & al. (1993), we used:

(1)   Type 1: A: *Put object X in/on transportable Y*
                  B: *Put object X nontransportable object Y*
       Type 2: A: *Give (or show) object X to animate A*
                  B: *Give object X and object Y to animate A*
                  C: *(Do) action A on animate A*
                  D: *(Do) action A on animate A with object X*
       Type 3: *(Do) action A on object X (with object Y)*
       Type 4: *Announce information*
       Type 5: A: *Take object X to location Y*

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[1] The names used have been changed to preserve anonymity.

B: *Go to location Y and get object X*
C: *Go get object X that's in location Y*
Type 6: *Make pretend animate A do action A on recipient Y*
Type 7: *All other sentence types.*

2.2.3 False belief tests

The false belief test is used to assess Theory of Mind. Normal children usually succeed at passing it at around 4 years. We presented to the children illustrated stories inspired by the Sally-Ann test. We tested only the children at the third stage of acquisition.

3 RESULTS

3.1 Corpora results

We have studied the evolution of the MLU of our children.
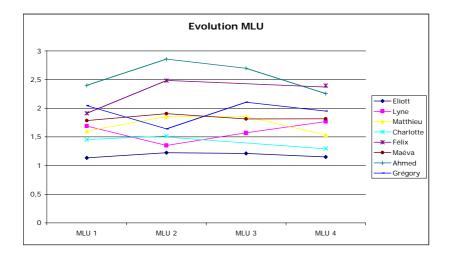
Figure 1

MLU Evolution

We can see a current stabilization even if there are big variations between children. For example, Gregory's MLU (in blue) decreases a lot between the first and the second sessions, because of the interruption of the PECS method of communication (which was supposed to allow him to develop a more spontaneous language). Given that it did not work, the educators have come back to the PECS method and his MLU has risen again and is currently stabilising. As another example, Felix's MLU (in violet) increases a lot between the first and the second session. He changes stages of acquisition (first combinations to first sentences). Then his MLU stabilises.

We have compared the MLU evolution of autistic children with that of normal children with identical MLUs at the time of the first session. Whatever the stage of acquisition is at the beginning, the MLUs of normal children increase whereas those of autistic children stabilise or increase only slowly.

We have analyzed the children production with respect to the lexical categories used:

---

[2] PECS program: the child has to put pictures (representing actions or objects) in the right order. This helps him to produce a grammatical sentence.
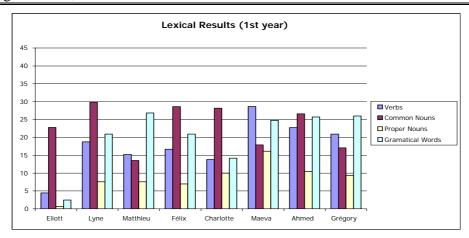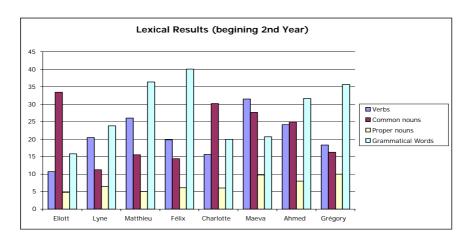
Figure 2

Lexical Results (1st year)

Figure 3

Lexical Results (2nd year)

However, we cannot isolate homogeneous tendencies in autistic children.

At the first stage of acquisition (represented by Eliott and Lyne), we notice a predominance of common nouns (in keeping with what is observed in normal children). This predominance decreases during the language acquisition process.

At the beginning of the second year, we notice an important increase of grammatical words. In all children, except Eliott, Charlotte and Maeva, grammatical words represent the biggest part of their production.

We have compared the results of the first year for our autistic children with the results of normal and SLI children with an equivalent MLU.

For the comparison SLI/autistic, we notice that SLI children produce a lot of grammatical words compared to their verbs and common nouns production. For autistic children, proportions are somewhat equivalent.

For comparison between normals and autistics:

At the first stage of acquisition, normal children produce the same proportions of each lexical type whereas autistic children produce more common nouns.

This difference dwindles at the second stage of acquisition. Normal and autistic children produce more or less equal proportion of verbs and common nouns. However, normal children produce more grammatical words.

Finally, at the third stage of acquisition, normal children overstep the three-hundred-words point and syntax acquisition is engaged as we can see by the strong proportion of grammatical words. Autistic children have progressed slowly in each lexical type.

We have made a t-Student test on our data. The difference between autistic and SLI children is significant for each lexical type. Concerning the comparison with normal children: the difference is significant only for common nouns for children at the first stage of acquisition. This difference extends to verbs and grammatical words for children at the second stage of acquisition. Finally, at the last stage of acquisition, the difference between autistic and normal children is significant for all lexical types. Thus, differences between autistic and normal children increase with age.

3.2 Savage-Rumbaugh results

If we except Victor, all children have more than 60% of correct or partially correct responses.
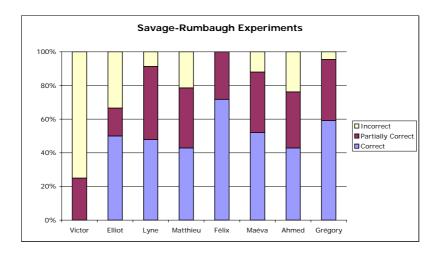
Figure 4

Savage-Rumbaugh Results

However, we had to repeat a lot and to reformulate sentences for the children to completely understand what we were asking them to do. For example, for the sentence "Put the fork on the truck," if the child did not do the action immediately, we had first to say "Take the fork" and, once the child got it, to tell him to put it on the truck.

We investigated which type of errors children make.
- They make errors on verbs: the child does not understand the meaning of verbs. For example if we ask him to show an object, he will give it to someone.
- They do errors on nouns: the child does not identify the object. So he looks at the table to find the object or takes any object and waits for the response of the experimenter.
- They do errors on agent: the child reverses the agent with the patient. For example, we ask the child to push the dog with the car but he pushes the car with the dog.
- They do errors on preposition: the child does not know the meaning of the preposition. For the sentence "put the cat *next to* the house" the child puts the cat *in* the house.
- They do errors on location: the child cannot identify the location mentioned. E.g., we ask the child to fetch his taxi card on his diagram. The child looks around him and moves only if the experimenter shows him where to go.
- Children add an object for the action. For example, when we ask the child to take the doll and to put the pen on the floor, he will put both objects on the floor.

We have compared the errors of our two best children (Félix and Grégory) who are both at the third stage of acquisition.

	Félix (6 years old)	Grégory (9 years old)
Errors on verb	3	3
Errors on object	1	2
Errors on agent	4	0
Errors on preposition	0	1
Errors on location	0	3
Add an object	2	1

Table 2

Errors Comparison

They do not make the same errors. For example, Félix has difficulties with agency and Grégory does not. In the same way, Grégory has difficulties with location and Félix does not. What seems common to all autistic children is that they have problems with the comprehension of verbs.

3.3 False belief results

All children failed this test. It was difficult for them to understand the whole story and it was difficult for us to catch and keep their attention on the story.

4 DISCUSSION

Our corpus analysis results show that the MLU of autistic children evolves very slowly, especially compared with that of normal children which quickly increases. The passage from first combinations to first sentences is difficult. It may be due to a lack of referential words (nouns and verbs).

We can propose a tentative explanation, based on the comparison of normal and autistic children on lexical results. During the two first stages of acquisition, the lexical results of normal and autistic children are somewhat equivalent, in terms of the proportion of each lexical group. The true difference concerns the size of vocabulary, which is bigger in normal children. At the last stage of acquisition, the proportion of grammatical words of normal children increases and that of autistic children does not. One possibility is that autistic children do not have enough referential vocabulary to trigger syntax and the grammatical lexicon increases with the progression of syntax.

The linguistic evolution of autistic children remains limited which can be explained by the relative stagnation of grammatical words. The extension of non-grammatical vocabulary is followed by an increase of grammatical vocabulary. Below 250-300 words, production, the MLU and grammatical vocabulary remain limited. So we may insist on the acquisition of non-grammatical vocabulary (in particular on verbs) for various reasons:

- grammatical acquisition remains limited because of the relatively poor size of the lexicon of referential words in autistic children;
- the referential lexicon is more important for communication even though the underdevelopment of the grammatical lexicon limits linguistic expression;

- the hypothesis is that if autistic children reach the 300 words-point, the grammatical vocabulary and syntax would develop rapidly. It is better to be realistic about the possibilities for autistic children to follow the same development as for normal children, but it is nevertheless possible that the increase of referential vocabulary would trigger syntactic development.

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OBJECT Topicalization in Cantonese[*]

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TOPIC and FOCUS topicalization constructions are commonly found in Cantonese, a Chinese language spoken by 71 million people. This paper accounts for the phenomenon of topicalization in Cantonese within the framework of Optimality-Theoretic Lexical-Functional Grammar (OT-LFG), focusing on constructions where the TOPIC or FOCUS fills the OBJ function.

While the [+New] feature is what licenses FOCUS topicalization in Cantonese, the NEW-L constraint cannot be directly applied to the language since a Cantonese FOCUS does not necessarily contain purely [+New] information and the [+New] information is not obliged to occur in the leftmost position of the FOCUS. The constraint [+New]-FOCUS ∧ FOCUS-L, along with other new constraints, are proposed in this study to account for the phenomenon. One hierarchy and two subhierarchies are established for TOPIC and FOCUS topicalization respectively.

1 INTRODUCTION

This paper investigates the phenomenon of OBJ topicalization in Cantonese within the OT-LFG framework, adopting Rosén's (1998: 184) definition of topicalization which defines it as 'a construction in which a leftmost constituent is understood as filling a missing constituent in the sentence'. The relevant constraints are identified and new constraints are introduced in order to establish constraint hierarchies for topicalization in Cantonese.

This paper is organized as follows. Section 2 discusses the methodology. Section 3 presents some observations on topicalization in Cantonese based on the results of a questionnaire survey. Section 4 identifies the relevant constraints and introduces new constraints. In section 5, constraint hierarchies for TOPIC and FOCUS topicalization are established. The paper is concluded in section 6.

2 METHODOLOGY

Based on the results of a questionnaire survey on topicalization in Cantonese completed by 40 native Cantonese speakers (see Fung, in preparation), some observations on Cantonese topicalization are outlined and the relevant constraints are identified. New constraints are introduced whenever necessary. Constraint hierarchies are established for topicalization.

3 OBSERVATIONS ON TOPICALIZATION IN CANTONESE

In this section, some observations on topicalization constructions in Cantonese are presented, based on the results of the questionnaire survey conducted.

When the phrase bearing the OBJ function is at the same time the discourse topic of the sentence, it can either be extracted to the initial position to become a topicalized discourse

topic (hereafter TOPIC) or stay in its canonical post-verbal position. The case is similar for a topicalized discourse focus (hereafter FOCUS). The OBJ carrying [+New] information can either be topicalized to become a FOCUS or stay in its canonical position. A FOCUS may contain [-New] information together with the [+New] element and it is not obligatory that all [+New] information appear inside the FOCUS (Fung 2006).

      An OBJ can be partially topicalized. With an OBJ consisting of a Q^0, a CL^0 and an NP, the NP can be topicalized to become the TOPIC or the FOCUS, being separated from its CL^0. It is however impossible to extract the CLP (consisting of a CL^0 and an NP), leaving the Q^0 *in situ*. Whenever the CL^0 is topicalized, it has to be topicalized together with its NP complement. Constructions where the NP complement is left *in situ* are ill-formed.

4 THE RELEVANT CONSTRAINTS

The following are the constraints relevant to topicalization in Cantonese, according to the above observations:

(1)   (a) SUBJ-L: SUBJ aligns left in the clause (Morimoto 2001)
        (b) DISTOPIC-L: Phrase designating the discourse topic aligns left in the sentence
        (c) Abut-OBJ(V-HD): Abut $Edge_1$ of OBJ with $Edge_2$ of V^0 (Morimoto 2001)
        (d) Abut-NP(CL-HD): Abut $Edge_1$ of NP with $Edge_2$ of CL^0
        (e) Abut-CLP(Q-HD): Abut $Edge_1$ of CLP with $Edge_2$ of Q^0
        (f) [+New]-FOCUS ∧ FOCUS-L: When there exists some [+New] information in the sentence, there must be a FOCUS, and the FOCUS aligns left in the sentence
        (g) *TOPICALIZE-FC: Do not topicalize functional categories

The newly introduced constraints, DISTOPIC-L, Abut-NP(CL-HD), Abut-CLP(Q-HD), [+New]-FOCUS ∧ FOCUS-L and *TOPICALIZE-FC, will be discussed briefly in the following.

4.1 DisTopic-L

One of the main goals of this paper is to find out when and how a *discourse topic* is topicalized to become a TOPIC. Though a discourse topic usually stretches across a number of utterances, what is being dealt with here is the phrase *in a sentence* which designates the discourse topic. The DISTOPIC-L constraint is introduced, which requires that the left edge of the phrase designating the discourse topic align with the left edge of the immediate sentence containing that phrase. Every element (to be defined below) intervening between the left edge of the discourse topic and the left edge of the sentence incurs one violation to the constraint.

4.2 Abut-NP(CL-HD) and Abut-CLP(Q-HD)

The Abut-NP(CL-HD) constraint, which says that an NP has to abut with its CL^0, is introduced based on the observation that an NP can be topicalized leaving its CL^0 *in situ*. Extracting a CLP separating it from its Q^0 is however impossible. This illegitimacy has to be accounted for by the Abut-CLP(Q-HD) constraint, which requires that a CLP abut with its Q^0. One violation is incurred to these constraints by each element occurring between the specified edges. The following phrase illustrates how these constraints work:

(2)   [$_{QP}$ *saam1* [$_{CLP}$ *bun2* [$_{NP}$ *zi6din2*]]]
        three   CL   dictionary
      'three dictionaries'

This phrase satisfies Abut-CLP(Q-HD) since the left edge of the CLP, *bun2 zi6din2*, abuts with the right edge of the Q^0, *saam1*. This constraint is violated by, for example, **saam1 ngo5 bun2 zi6din2* (three-1.SG-CL-dictionary), where the CLP, *bun2 zi6din2*, and the Q^0, *saam1*, is separated by the D^0, *ngo5*. The phrase in (2) also satisfies Abut-NP(CL-HD), with the left edge of the NP *zi6din2* abutting with the right edge of the CL^0, *bun2*. **Bun2 saam1 zi6din2* (CL-three-dictionary), for instance, incurs one violation to this constraint by separating the NP *zi6din2* and the CL^0 *bun2* by the Q^0, *saam1*.

In the above discussion, it is stated that the number of violations incurred is the number of *elements* intervening between the edges. The word *element* is interpreted as a categorial unit in this study. The example below illustrates what an element refers to:

(3)   ***saam1 bun2 zi6din2   aa3   ngo5   maai5zo2***
       three CL   dictionary   PART   1.SG   buy.PERF
       'It is **three dictionaries** that I have bought.'

In (3), the sentence-initial QP, which consists of three elements including a Q^0 (*saam1*), a CL^0 (*bun2*) and an NP (*zi6din2*), and the particle *aa3* standing in front of the SUBJ *ngo5* incur in total four violations to the SUBJ-L constraint.

4.3 [+New]-FOCUS ∧ FOCUS-L

The [+New]-FOCUS ∧ FOCUS-L constraint is derived particularly for FOCUS topicalization. The two occurrences of 'FOCUS' in the constraint refer to a topicalized discourse focus. This constraint requires that there be a FOCUS in the sentence whenever there exists some [+New] information *and* that the FOCUS should occur in the leftmost position. One violation is incurred *either* when there is some [+New] information but no FOCUS in the sentence *or* when the FOCUS does not align left.

Choi (1999) argues that topicalization is employed in English to encode information prominence instead of newness. PROM-L is then a relevant constraint for characterizing English topicalization. As discussed in Fung (2006), FOCUS in Cantonese can encode discourse focus bearing either the [+Prom] or [-Prom] feature and it is the [+New] feature, rather than the [+Prom] feature, which licenses FOCUS topicalization. Choi's (2001) NEW-L, however, cannot be directly applied to Cantonese. Although the [+New] feature licenses FOCUS topicalization, a FOCUS may also at the same time contain some [-New] information, and it is not obligatory for the [+New] element to appear in the leftmost position of the sentence. Neither is it necessary that all [+New] information appear inside the FOCUS. Based on these observations, the conjunctive constraint [+New]-FOCUS ∧ FOCUS-L is introduced, which states that there must be a FOCUS when there exists some [+New] information in the sentence *and* that the FOCUS should align left. This constraint conjunction does not require that all [+New] information should appear inside the FOCUS or that the FOCUS should contain only [+New] information. Neither does it demand that the [+New] information align left.

4.4 *Topicalize-FC

*TOPICALIZE-FC is introduced based on the observation that sentence (4) is well-formed while sentence (5) is ill-formed (assume that *zi6din2* and *saam1 bun2* bear the [+New] feature in (4) and (5) respectively, so that they are topicalized to satisfy [+New]-FOCUS ∧ FOCUS-L):

(4)   ***zi6din2   aa3   ngo5   maai5zo2   saam1 bun2***
       dictionary   PART 1.SG   buy.PERF   three   CL
       'I have bought three **dictionaries**.'

(5)   *saam1   **bun2** aa3   ngo5   maai5zo2   zi6din2
          three   CL   PART   1.SG   buy.PERF   dictionary

While the topicalized phrase in (4) is an NP, the topicalized elements Q^0 and CL^0 in (5) do not form a maximal projection. This, however, does not necessarily lead to ungrammaticality. Consider example (6).

(6)   **maai5zo2**   laa1   ngo5   go2   bun2   syu1
          buy.PERF   PART   1.SG   DEF   CL   book
          'I have already **bought** that book.'

In this example, the FOCUS *maai5zo2* is a V, which is not a maximal projection either. This construction shows that a topicalized element is not necessarily a maximal projection.

 Another difference between constructions (4) and (5) is that the topicalized phrase in (4) is an NP which takes no complement. In (5), it is a Q^0 and a CL^0 which are topicalized, with the NP complement of the CL^0, *zi6din2*, being left *in situ*. Leaving the complement *in situ*, again, cannot explain its unacceptability. In (6), the V *maai5zo2* is topicalized to become the FOCUS, also leaving its CLP complement *go2 bun2 syu1* in its canonical OBJ position.

 Though the complements of the topicalized CL^0 and V^0 in sentences (5) and (6) respectively are both left *in situ*, the two constructions differ in the syntactic category of the topicalized element. In (6), the stranded CLP is the complement of the topicalized V^0, which is a lexical category, while the stranded NP in (5) is the complement of the topicalized CL^0, which is a functional category. Based on this observation, the ***TOPICALIZE-FC** constraint is proposed, which disallows topicalizing only a functional category with its complement being left *in situ*. One violation is incurred to this constraint for every topicalized functional category whose complement stays in its canonical position.

 It should, however, be noted that, since Cantonese is a pro-drop language, the complement can be dropped, provided that it can be recovered from the context. If the NP *zi6din2* in (5) is dropped, the sentence becomes grammatical:

(7)   **saam1 bun2**   aa3   ngo5   maai5zo2
          three CL   PART   1.SG   buy.PERF
          'It is **three** (dictionaries) that I have bought.'

To conclude, what ***TOPICALIZE-FC** prohibits is that the functional category is topicalized with the complement being left *in situ*. The functional category is free to be topicalized when the complement can be recovered from the context and is dropped.

5 THE CONSTRAINT HIERARCHIES

The following two hierarchies are arrived at based on the observations presented in section 3:

(8)   (a) Constraint hierarchy for TOPIC topicalization:
              DISTOPIC-L >> SUBJ-L , Abut-OBJ(V-HD), Abut-NP(CL-HD)
          (b) Constraint hierarchy for FOCUS topicalization:
              Abut-CLP(Q-HD), *TOPICALIZE-FC >> [+New]-FOCUS ∧ FOCUS-L >> SUBJ-L,
              Abut-OBJ(V-HD), Abut-NP(CL-HD)

Since both the canonical structure and the topicalization construction are acceptable in some cases, the notion of free ranking (Kager 1999) is involved. This paper, however, concentrates on the phenomenon of topicalization, and therefore only considers the hierarchies for selecting the topicalization constructions as the optimal outputs.

In this paper, it is assumed that the OT input consists of an underspecified f-structure and an i-structure (King 1997). King (1997) mentions that every constituent is assigned a discourse label in the i-structure. It is therefore normal to find discourse topic, [+New] and [-New] information coexisting in an i-structure. Though it is possible for some constructions to have TOPIC as well as FOCUS in an attempt to satisfy both DISTOPIC-L and [+New]-FOCUS ∧ FOCUS-L, this kind of construction is not commonly found in the language. Since a language is assumed to have one single hierarchy (subhierarchies are possible where options exist), it is reasonable and desirable to combine the above-established hierarchies for TOPIC and FOCUS constructions into one hierarchy for Cantonese. This issue will however be left for future research. The inputs given in the following will therefore be independently evaluated against the hierarchy for TOPIC topicalization and the one for FOCUS topicalization, and constructions with multiple topicalized phrases will not be included in the candidate set. The constraint ranking for TOPIC constructions will be examined first. Consider the following input:
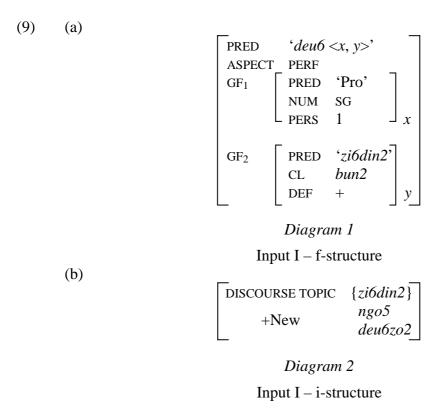
(9)   (a)

$$
\begin{bmatrix}
\text{PRED} & \text{`}deu6 <x, y>\text{'} \\
\text{ASPECT} & \text{PERF} \\
\text{GF}_1 & \begin{bmatrix} \text{PRED} & \text{`Pro'} \\ \text{NUM} & \text{SG} \\ \text{PERS} & 1 \end{bmatrix} x \\
\text{GF}_2 & \begin{bmatrix} \text{PRED} & \text{`}zi6din2\text{'} \\ \text{CL} & bun2 \\ \text{DEF} & + \end{bmatrix} y
\end{bmatrix}
$$

Diagram 1

Input I – f-structure

(b)

$$
\begin{bmatrix}
\text{DISCOURSE TOPIC} & \{zi6din2\} \\
\text{+New} & \begin{matrix} ngo5 \\ deu6zo2 \end{matrix}
\end{bmatrix}
$$

Diagram 2

Input I – i-structure

Tableau 1 shows how the optimal output is selected with hierarchy (8a).

(10)

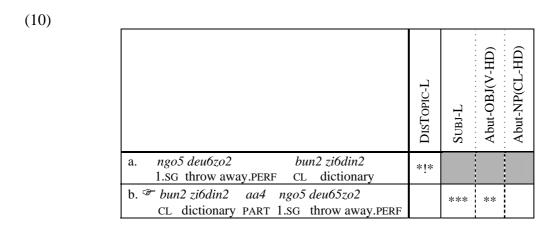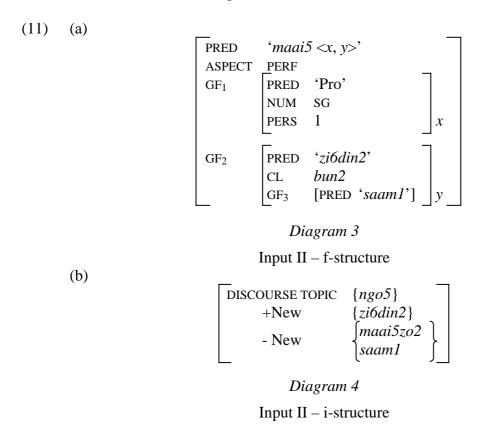|	DISTOPIC-L	SUBJ-L	Abut-OBJ(V-HD)	Abut-NP(CL-HD)
a. *ngo5 deu6zo2 bun2 zi6din2* 1.SG throw away.PERF CL dictionary	*!*			
b. ☞ *bun2 zi6din2 aa4 ngo5 deu65zo2* CL dictionary PART 1.SG throw away.PERF		***	**	

Table 1

Evaluation of Input I with hierarchy (8a)

Candidate (10a), with the canonical structure is ruled out by violating the highest-ranked DISTOPIC-L. With DISTOPIC-L outranking SUBJ-L, Candidate (10b), the topicalization construction, becomes the optimal output.

Now consider another input:

(11)　(a)

$$
\begin{bmatrix}
\text{PRED} & \text{`\textit{maai5} <x, y>'} \\
\text{ASPECT} & \text{PERF} \\
\text{GF}_1 & \begin{bmatrix} \text{PRED} & \text{`Pro'} \\ \text{NUM} & \text{SG} \\ \text{PERS} & 1 \end{bmatrix} x \\
\text{GF}_2 & \begin{bmatrix} \text{PRED} & \text{`\textit{zi6din2}'} \\ \text{CL} & \textit{bun2} \\ \text{GF}_3 & [\text{PRED `\textit{saam1}'}] \end{bmatrix} y
\end{bmatrix}
$$

Diagram 3

Input II – f-structure

(b)

$$
\begin{bmatrix}
\text{DISCOURSE TOPIC} & \{ngo5\} \\
\text{+New} & \{zi6din2\} \\
\text{- New} & \begin{Bmatrix} maai5zo2 \\ saam1 \end{Bmatrix}
\end{bmatrix}
$$

Diagram 4

Input II – i-structure

Since the discourse topic is at the same time the SUBJ *ngo5*, it is obvious that the canonical SVO structure, which satisfies both DISTOPIC-L and SUBJ-L, is the optimal output with respect to the hierarchy for TOPIC topicalization. The following discussion will then concentrate on the evaluation against the hierarchy for FOCUS topicalization in (8b). The tableau below shows the evaluation:

(12)

	Abut-CLP(Q-HD)	*TOPICALIZE-FC	[+New]-FOCUS ∧ FOCUS-L	SUBJ-L	Abut-OBJ(V-HD)	Abut-NP(CL-HD)
a. *ngo5 maai5zo2 saam1 bun2 zi6din2* 1.SG buy.PERF three CL dictionary			*!			
b. *zi6din2 aa3 ngo5 maai5zo2 saam1 bun2* dictionary PART 1.SG buy.PERF three CL				**	**	***!*
c. *bun2 zi6din2 aa3 ngo5 maai5zo2 saam1* CL dictionary PART 1.SG buy.PERF three	*!			***	**	
d. ☞ *saam1 bun2 zi6din2 aa3 ngo5 maai5zo2* three CL dictionary PART 1.SG buy.PERF				****	**	

Table 2

Evaluation of Input II with hierarchy (8b)

The canonical construction (12a) violates [+New]-FOCUS ∧ FOCUS-L by having no FOCUS. Candidate (12c) violates Abut-CLP(Q-HD) by topicalizing the CLP *bun2 zi6din2*, separating it from the Q^0 *saam1*. Since SUBJ-L, Abut-OBJ(V-HD) and Abut-NP(CL-HD) are on the same stratum of the hierarchy, candidate (12d) wins over candidate (12b) by incurring fewer cumulative violations to the three constraints.

   According to the results of the questionnaire survey, both candidates (12b) and (12d) are acceptable given that the [+New] information falls on the NP *zi6din2*. The hierarchy has to be revised since it only selects (12d) as the optimal output. The number of violations to SUBJ-L and Abut-NP(CL-HD) differ for the two candidates. With SUBJ-L outranking Abut-NP(CL-HD), candidate (12b) becomes optimal. With Abut-NP(CL-HD) outranking SUBJ-L, candidate (12d) is optimal. The tableaux below show how the two optimal outputs are selected with different subhierarchies:

(13)

	Abut-CLP(Q-HD)	*TOPICALIZE-FC	[+New]-FOCUS ∧ FOCUS-L	Abut-OBJ(V-HD)	SUBJ-L	Abut-NP(CL-HD)
a. *ngo5 maai5zo2 saam1 bun2 zi6din2* 1.SG buy.PERF three CL dictionary			*!			
b. ☞ *zi6din2 aa3 ngo5 maai5zo2 saam1 bun2* dictionary PART 1.SG buy.PERF three CL				**	**	****
c. *bun2 zi6din2 aa3 ngo5 maai5zo2 saam1* CL dictionary PART 1.SG buy.PERF three	*!			**	***	
d. *saam1 bun2 zi6din2 aa3 ngo5 maai5zo2* three CL dictionary PART 1.SG buy.PERF				**	***!*	

Table 3

Evaluation of Input II with SUBJ-L outranking Abut-NP(CL-HD)

(14)

	Abut-CLP(Q-HD)	*TOPICALIZE-FC	[+New]-FOCUS ∧ FOCUS-L	Abut-OBJ(V-HD)	Abut-NP(CL-HD)	SUBJ-L
a. *ngo5 maai5zo2 saam1 bun2 zi6din2* 1.SG buy.PERF three CL dictionary			*!			
b. *zi6din2 aa3 ngo5 maai5zo2 saam1 bun2* dictionary PART 1.SG buy.PERF three CL				**	*!***	**
c. *bun2 zi6din2 aa3 ngo5 maai5zo2 saam1* CL dictionary PART 1.SG buy.PERF three	*!			**		***
d. ☞ *saam1 bun2 zi6din2 aa3 ngo5 maai5zo2* three CL dictionary PART 1.SG buy.PERF				**		****

Table 4

Evaluation of Input II with Abut-NP(CL-HD) outranking SUBJ-L

It has been assumed that SUBJ-L, Abut-OBJ(V-HD) and Abut-NP(CL-HD) are on the same stratum. According to Tesar and Smolensky (1998), all constraints are on the highest level of the hierarchy at the initial stage for constraint demotion. Therefore, when Abut-NP(CL-HD) in *Tableau 3* or SUBJ-L in *Tableau 4* is demoted, Abut-OBJ(V-HD) stays with the higher-ranked constraint for further demotion if necessary.

6 CONCLUSIONS

In this paper, an OT-LFG account has been proposed for the phenomenon of topicalization in Cantonese. Some observations on this phenomenon have been presented, based on which the relevant constraints have been arrived at. Five new constraints have been introduced, which are DISTOPIC-L, Abut-NP(CL-HD), Abut-CLP(Q-HD), [+New]-FOCUS ∧ FOCUS-L and *TOPICALIZE-FC. The constraints have been ranked against each other and one hierarchy and two subhierarchies have been established for TOPIC topicalization and FOCUS topicalization respectively.

It is hoped that this OT-LFG account of OBJ topicalization in Cantonese will contribute to the field of Cantonese syntax by demonstrating how the framework can be applied to the language. Topicalization constructions involving different grammatical functions can be investigated in the future in order to provide a comprehensive account of topicalization.

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The Social Meaning of Stress Assignment in Hønefoss Norwegian[*]

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There are two ways of assigning stress to loan words in East Norwegian dialects. In the case of loan words, stress can be assigned on the same syllable as in the language from which it was borrowed, in which case stress is lexical. Alternatively, a loan word can be subject to the Initial Primary Stress Rule (IPSR) (Kristoffersen 2000), a rule which moves stress from the 'borrowed' position to the initial position. Røyneland (2005) suggests that stress assignment conveys social meaning, and calls for more research from different areas of Norway. This study uses data from the town of Hønefoss to see whether factors of social background correlate with an individual's choice of stress assignment. It also investigates which internal factors might influence the choice of stress assignment. I demonstrate that the social meaning of stress assignment in Hønefoss Norwegian is strongly tied to a speaker's occupational status and that word frequency might play a role in the choice of stress assignment.

1 INTRODUCTION

In Norwegian morphologically simplex words, stress generally falls on the leftmost syllable of the root. In words of foreign origin, however, this is not always the case. In loan words stress is often assigned to positions to the right in the word, which means they are stressed on the same syllable as in the language they are borrowed from. The loan word *maskin* 'machine' for instance was borrowed from Latin through French, and is assigned stress on its second syllable resulting in pronunciation (1).

(1)   [mɑ 'ʃiːn]

Speakers of some East Norwegian dialects however have a choice when it comes to stressing these loan words. There exists a rule called the Initial Primary Stress Rule (IPSR) that moves stress from any right bound syllable to the initial syllable (Kristoffersen). If the IPSR is applied to the word *maskin*, stress is moved to the initial syllable, a consonant geminate is created and the word is pronounced

(2)   ['mɑʃ.ʃɪn]

2 THE VARIABLE AND SOCIAL CONSTRAINTS

The variation of stress assignment is, to a certain degree, governed by social constraints. Although the Norwegian Language Council, an institution that advises in linguistic matters, has stated that both variants of stress assignment are accepted in spoken Norwegian (Språkrådet 2001) the application of stress on a loan word's initial syllable is possibly one of the most socially stigmatised features of rural or lower prestige East Norwegian speech, at least as seen by people in the capital (Røyneland 2005: 159). Indeed studies of young people's

speech also indicate that stressing loan words on this syllable is hardly ever found in Oslo (Jahnsen 2001). A study from another major urban area, Drammen, shows that applying stress on a loan word's initial syllable is seen as an unattractive feature of speech (Kristiansen 1995). Data from towns in more rural areas like Romerike however suggest that stressing loan words on the initial syllable is still more common than stressing them on the borrowed position and that this dialect feature is not dying out (Skolseg 1994). Stress assignment variation in areas further away from Oslo appears to carry other kinds of social meaning, for example Royneland (2005) finds that in the town of Røros which is situated in the north of East Norway, there is a significant gender difference in usage of stress and that stress assignment on the initial syllable of loan words indexes a masculine identity. She calls for more research to see if similar conclusions can be drawn about stress assignment and its correlations with social variables in other places.

Although the social position of stress assignment to loan words is fairly well known in Norway, at least in larger urban areas, the internal factors that might influence stress assignment have not been looked at to the same degree. Kristoffersen (2000) notes how in the dialects in the area close to Oslo only loan words that have tonal accent 1[1] can undergo the IPSR and have stress moved to the initial syllable, which seems to be right for Hønefoss as well. There is mostly intra-speaker variation when it comes to stress assignment however, and there seem to be certain loan words that are more readily pronounced with initial stress than others. Some internal factors will be investigated in this paper to see if there are any clear patterns that could explain this variation.

A study of stress assignment could also help illuminate patterns of dialect levelling. Hønefoss is in an area that is said to currently be experiencing regional dialect levelling, a process where local forms are lost to supra-local ones (Skjekkeland 2005). Although the variable of stress assignment is not a local feature but something traditionally found in many areas of East Norway, an investigation of its usage in Hønefoss will still be worthwhile. Stress assignment on the initial syllable of loan words is a feature that is traditional to the Hønefoss dialect but losing ground in the urban centres nearby. It can therefore be claimed that if the urban Hønefoss dialect is converging with other urban varieties in the area, people will be stressing loan words on their borrowed position and will refrain from moving stress to the initial syllable.

3 THE SAMPLE

This study examines variation in a corpus of collected data from ten speakers. The subjects are between the ages of 24 and 37, are all originally from Hønefoss and have decided to settle in the town. Six of the ten speakers in the analysis were recorded in pairs. The remaining four were recorded individually by the author. There are four men and six women in the sample. All subjects were asked the same questions by the interviewer regarding biographical information, attitudes against the local dialect and the local area. The length of the interviews range from 20 minutes for a speaker recorded individually to 1.5 hour for a pair. Only loan words of non-Germanic origin were used for this analysis as they are the easiest to discriminate from the native vocabulary. This resulted in a total of 246 tokens from the 10 speakers, ranging from 9-36 tokens per speaker.

To examine the competing effects of different internal and external factors on stress assignment in the data, a multivariate analysis was performed with Goldvarb X (Sankoff D., Tagliamonte S.A., & Smith E. 2005). Four social variables are examined; gender first of all, as Røyneland found indications in Røros that stressing loan words on the initial syllable indexes a masculine identity. Subsequently, three factors that have traditionally determined

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[1] Most Norwegian dialects differ between two distinct word melodies often described as tonal accent 1 and 2 in literature. For accounts of Norwegian prosody in English see Jahr & Lorentz (1983) and Kristoffersen (2000)

people's socio-economic class are looked at: education level, occupational status and income. These are tested for because stress assignment on loan words' initial syllables is described as a feature with lower social prestige in literature (Kristiansen 1995; Royneland 2005). Educational attainment is categorised into 3 levels, which are:

1)   No higher education: The informant has not obtained any degrees after finishing secondary school. (N= 2)
2)   Vocational training: The informant has attended vocational training after finishing secondary school. (N=3)
3)   University education: The informant has a university level degree. (N=5)

The occupational status groups used in Kerswill's study of migrant speech in Bergen (1994: 53) were used as a basis for this study, but collapsed into three groups[2]. These three categories are:

1)   Unskilled workers: this category consists of the same subjects as those without higher education above. (N=2)
2)   Skilled workers: civil servants, lower clerical workers, in general workers that hold positions of a low degree of responsibility. (N=5)
3)   Higher professionals: managers and other worker groups who hold positions with a high degree of responsibility. (N=3)

Perhaps due to the small size of this sample, the income disparity between the subjects is not very big: the seven working subjects' incomes range between approximately 200,000 NOK a year to 320,000 NOK a year which in my personal view means that their incomes create a natural class and can only with difficulty be divided into separate groups. Informants' incomes will therefore not be looked at any further and will not be included in the statistical analysis.

Four internal variables are included in the analysis to see whether they might tell us whether specific kinds of loan words are more likely to undergo the stress movement rule and be stressed on the initial syllable. The first factor group tested for is word class:

1)   Nouns (N=163)
2)   Verbs (N=29)
3)   Adjectives: there were two adverbs that originally did not fall in this category, both tokens were *eventuelt* 'alternatively', they were collapsed into this group as the adjectival form of the word is identical to the adverbial one. (N=54)

The second internal constraint tested for was word length, measured in number of phonological syllables. Naturally, only polysyllabic words have variation in stress assignment, and so the three categories tested for were:

1)   Two phonological syllables (N=47)
2)   Three phonological syllables (N=118)
3)   Four or more (there were some words in the data with five phonological syllables) (N=81)

A third internal factor is morphological form. There is variation to be found in suffixes of certain Norwegian verbs and nouns: the definite article suffix in certain singular and plural nouns can vary between *–en(e)* and *–a*, while some past tense verbs can either get the tense

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[2] The unemployed subject was put in the category of last held job. Two of the subjects were students but both were working part time in a job they aspired to stay in and were thus put in the category this job would fall in.

suffix *–et* or *–a*. The *–a* forms in all cases are a traditional dialectal form while *–en* and *–et* suffixes are forms probably influenced by Danish through the written standard Bokmål. The latter forms are generally associated with urban varieties or varieties of the higher social classes. There might therefore be a correlation between usage of these suffixes and stress assignment. Unfortunately, there was only a small portion of the words in the sample that fell in this category. They were still included in the test and three groups were created:

1)   Used form derived from Old Norwegian *–a* (N=12)
2)   Used form derived from Bokmål *–en(e)/-et* (N=9)
3)   Not applicable for token (N=225)

The last internal factor looked at in the investigation is word frequency. Bybee (2001) suggests that highly frequent words are more easily subject to change than words with low frequency. The relative frequencies of the different loan words in this study are looked up in a corpus of spoken language collected in Oslo consisting of 900,000 words (Norsk talespråkskorpus). The categories of frequency distinguished between are:

1)   Infrequent words: words with 0-54 instances in the Oslo corpus (N=212)
2)   Frequent words: words with 70-235 instances in the Oslo corpus (N=34)

Perhaps rather ironically, there are not very many tokens of frequent words, but this does not change the fact that there might be a difference in the amount of usage of different loan words, and the categories are tested for as they stand.

4 THE RESULTS

As shown in Table 1, the speakers naturally fall into two categories; five speakers use the borrowed pattern and only stress loan words on the initial syllable 0-24% percent of the time, while the remaining five stress loan words on the initial syllable 70%-100% of the time.
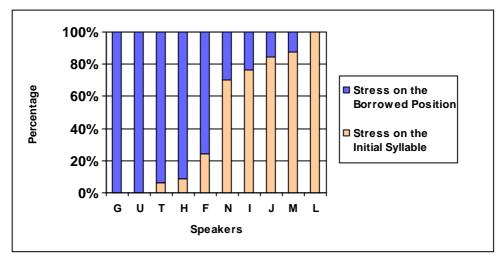

Figure 1

Stress assignment patterns of the selected ten speakers

4.1 The Relative Contribution of the Variables

We now turn to the variables to see if any of these can explain the divide between the speakers. The variable rule application Goldvarb X (Sankoff D., Tagliamonte S.A., & Smith E. 2005) was used to find the degree of contribution of the different variables to the results. Table 2 shows the different independent variables or factor groups and within them each factor's relative weight. Values above 0.5 favour application of the dependent variable, and values below 0.5 disfavour application of the dependent variable. The first variable tested for is gender, which was found not to be statistically significant. These data then do not suggest that speaker sex constructs the variation in the way that was reported for Røros by Røyneland (2005). The other two social variables, educational level and occupational status, were analysed in individual runs. Both were found to be contributing significantly to the results but the model with occupational status showed the best goodness of fit[3] and educational level will therefore be excluded from the rest of the analysis. Table 2 shows us that speakers in the occupational status groups 'unskilled' and 'skilled workers' favour stress assignment on the initial syllable with factor weights of .90 and .65 respectively. Subjects who fall in the group of high professionals do not favour the application of initial stress with a factor weight of .28. Of the internal constraints, only word frequency is chosen as significant, while the others do not seem to be contributing to the results. 'Frequent words' favour the application of stress on the initial syllable with a factor weight of .72, while 'infrequent words' do not with a weight of .46. Finally, what we see from table 2 is that application of stress on the initial syllable is something happening approximately a third of the time in the data. This seems to contradict the pattern shown in table 1, but is due to the larger number of loan words produced by speakers who mainly stress words on the 'borrowed' position.

Factor Group	Frequency	%	Weights
External Factor Groups			
Gender			
Male	40/120	33.3%	[.58]
Female	27/126	21.4%	[.43]
Occupational Status			
Unskilled workers	20/27	74.1%	.90
Skilled workers	34/94	36.2%	.65
Higher professionals	13/125	10.4%	.28
Internal Factor Groups			
Word Class			
Nouns	46/163	28.2%	[.51]
Verbs	9/29	31%	[.55]
Adjectives	12/54	22.2%	[.43]
Word Length			

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[3] Educational level and occupational status are both significant, but the analysis shows that it is the model with occupational status that shows the best goodness of fit with a log likelihood of -115.456. Educational level has a log likelihood of -121.162. The unskilled workers and the subjects with no higher education are the same subjects in both groups. The differences between the two groups lie in the subjects put in 'vocational training', 'university education' and 'skilled workers' and 'higher professionals' respectively. Two of the five subjects with university education were assigned to the category 'skilled worker' in the 'occupational status' analysis as they do not hold positions with much managerial responsibilities. One of these was the only among the five subjects who had university education to stress loan words mainly on the initial syllables, in contrast to the others in that group who all stressed loan words mainly on their 'borrowed' positions. This subject falls in the 'skilled worker' category under 'occupational status' which might explain why this model has a log likelihood closer to 0 and thus better goodness of fit.

Two syllables	6/47	12.8%	[.29]
Three syllables	38/118	32.2%	[.57]
Four or more syllables	23/81	28.4%	[.53]
Suffix Form			
Old Norwegian	4/12	33.3%	[.57]
Written standard influenced	2/9	22.2%	[.43]
Not applicable	61/225	27.1%	[.50]
Word Frequency			
Frequent	17/34	50%	.72
Infrequent	50/212	23.6%	.46
Totals			
Stress on the initial syllable:	67/246	27.2%	
Stress on the borrowed position	179/246	72.8%	

Table 1

Factor groups and their contribution to the results (insignificant groups between brackets). Overall tendency: .23, N=246. Factor groups were selected in the following order: *Occupational Status*; *Word Frequency*. The factor groups not selected were *Gender, Word Class, Word Length and Suffix Form*

4.1.1 The Contribution of the Social Factors

The table above indicates that occupational status plays a role in the social meaning of stress assignment in Hønefoss Norwegian. The question that arises is whether occupational status is an indicator for social prestige in general. This cannot be determined completely, but it should be noted that the category of occupational status does not only include status on the work floor, but also incorporates education, i.e. with a category for unskilled workers and two for workers with formal training. As education has often been seen as another indicator of social prestige together with economic security (which again generally is determined by occupational status), the category of occupational status can be treated as a strong indicator of social status in general. What we find then is that people with a high status seem to avoid stressing loan words on the initial syllable, while subjects with lower status in jobs where no formal skills are required do the opposite and mostly stress loan words on the initial syllable. The social meaning of stress assignment in Hønefoss Norwegian is thus closely tied to social status, and the form of stress which is likely to enjoy higher social prestige is the one on a loan word's borrowed position.

4.1.2 The Contribution of the Internal Constraints

Only one internal factor group was found to be contributing significantly to the results for stress assignment. Word class, word length and suffix form do not seem to have any influence upon the results. It must be noted however that the sample in this analysis is rather small, and that for suffix form, for instance, only a fraction of the sample could actually be used. These factors will therefore be tested for on a bigger sample in the future to see if the number of tokens will make a difference. Although the statistical analysis shows that frequency is significant, only 34 tokens in the data are actually frequent words. The difference found however is interesting. The analysis shows that frequent words favour assignment of stress on the initial syllable. If looked at individually, these results might indicate that a change is going on where application of stress on the initial syllable is becoming more popular. In view of the

background and remaining results however, a more likely conclusion to draw might be that these frequently used loan words are such a common part of the vocabulary that speakers consider them to be 'native' and therefore assign them native prosodic properties, i.e. stress on the leftmost syllable of the root. Further investigation is needed to see whether this is actually the case.

4.2 Signs of Dialects Converging

Although there are clear signs of variability in the sample, it is fair to say that both variants of stress assignment are very much present in the dialect. The traditional pattern of stressing loan words on the initial syllable is not the most used form of stress assignment, it is used only about a third of the time overall, but this result is due to the larger amount of loan words produced by informants of higher statuses. If informants are looked at individually, we find a clear divide with half of the speakers using initial stress to a high degree and the other half to a low degree, as shown above in table 1. Thus examined, it is fair to say that stress on initial syllables is still very much present in the dialect. Another interesting fact is that two of the speakers who apply stress to the initial syllable, M and J, are the youngest informants in the sample - 24 and 25 years old - and so there are no indications that this is a feature disappearing from younger people's speech, as seen in the findings in Oslo (Jahnsen 2001: 96).

An interesting similarity to findings from Oslo and Drammen however is the social evaluation the feature holds; it is the same in the major urban areas as in Hønefoss Norwegian. Stress assignment on the initial syllable of loan words seems to be a feature primarily found in subjects with lower occupational status who probably also hold a lower social status in general. This social stigma is noted to have been found in Oslo but not so much in other rural areas further away from major cities (Røyneland 2005: 159). From this, we might conclude that although the speech of Hønefoss may not have levelled with the bigger urban varieties, the same social constraints for variation exist in the areas.

5 DISCUSSION

A different result has been found among the group of speakers in Hønefoss than what Røyneland found in Røros; there is no sign that stress assignment on the initial syllable is part of a masculine identity in Hønefoss. It is worth noting however that Røyneland's main focus was on adolescents and it could be that the adolescents in Hønefoss show a different pattern from the older generation investigated in this paper. Further analyses are needed to see whether this is the case. There is an indication that frequent words are more easily stressed on their initial syllable than infrequent words. This will be explored further in future work. Although there is variability when it comes to stress assignment in Hønefoss, there are no signs that either of the two variants is the strongest as there were two equally large groups of subjects who either stress loan words on the initial syllable or do not. We can conclude however that the higher the occupational status one enjoys the greater the chance is that one does not stress loan words on the initial syllable, but keeps to the 'borrowed' pattern. The opposite is also true; the lower one's occupational status, the greater the chance that one keeps to the traditional way of stressing loan words, by moving stress to the initial syllable. This pattern fits the description of stress in other East Norwegian urban areas, where stress assignment on initial syllables is described as a phenomenon with lower social prestige. There is proof therefore of similar social positions of the two variants in Hønefoss and bigger urban areas like Oslo and Drammen. Whether this similarity in social evaluation has implications for actual language change however remains unknown. Further investigation is needed to see whether the Hønefoss dialect is converging with urban speech from the rest of East Norway.

As stress on the initial syllable is the traditional pattern found in Hønefoss, stress on the borrowed position of a loan word can be seen as the focus of change, and I conclude that this changed form is the carrier of social meaning. By stressing loan words on the borrowed position and not moving stress, speakers of the Hønefoss dialect are conveying an association with higher levels of social prestige and the higher socio-economic classes.

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The Role of Prosody in Japanese:
The use of pitch information in spoken word recognition by L1 and L2 speakers

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This study examined the role of pitch accent in the perception of spoken Japanese by native speakers of Japanese with and without pitch accent in their variety and students learning Japanese with and without pitch accent in their L1. A laboratory-based word discrimination test using Japanese pitch accented words was employed to determine how native pitch accent pattern influenced word recognition. The results revealed a facilitatory effect of L1 pitch accent background in Japanese, and of Japanese L1.

1 INTRODUCTION

Some languages of the world, like Chinese, distinguish words by tone whilst other languages, like English, do not. A few languages, including some Scandinavian languages, have restricted pitch accent contrasts in a subset of their vocabulary. Japanese can be regarded as one such restricted pitch accent language, though there are interesting differences among varieties of Japanese in this respect – some varieties of Japanese have pitch accent, whilst other varieties do not.

This study follows up previous research findings on the role of pitch accent in Japanese. It has been reported that for selection of words in the mental lexicon, not only phonetic segment information but other articulatory phonetic information is used (Lahiri & Marslen-Wilson, 1991), which can include prosodic information. A study of lexical recognition (Otake & Cutler, 1999) found that pitch accent information was used early and effectively by both Tokyo pitch accent speakers and accentless speakers of Japanese in narrowing down the set of potential candidates. In a Japanese pitch accent identification test (Hirata, Ayusawa, Nakagawa, & Odaka, 1997), similar performance was found between Japanese speakers from two regions where the same accent patterns are shared, whilst speakers from the region where different accents are used performed differently. Another study revealed that both pitch accent and non-pitch accent speakers use pitch information in word activation; however pitch accent speakers demonstrated higher sensitivity in their performance than non-pitch accent speakers (Otake, 2002).

Hirata et al. (1997) also found such perceptual differences among L2 speakers of Japanese, depending on the subjects' L1. Pitch accent in Japanese can be acquired by Japanese learners with different suprasegmental backgrounds (Nishinuma, 1994; Nishinuma, Arai, and Ayusawa, 1996). However, it has also been found, in a pitch accent distinction test by native speakers of English and French learning Japanese, that their performance is different from native speakers and reflects characteristics of the native system (Nishinuma, Arai, & Ayusawa, 1996). Our study includes L2 learners of Japanese whose L1 is English, which has contrastive stress but not pitch accent, and Norwegian, which is like Japanese in being a pitch accent language. Studies on the use of pitch accent contrast in Japanese by Norwegian learners cannot be found in the published literature.

This study investigates the following questions and related hypotheses:

Q1. Is the perception of pitch accent in word identification significantly different between native Japanese speakers with different accent backgrounds? If so, in what ways does it differ?

H1. There will be statistically greater accuracy and confidence in the use of F0 contour in word identification by native Japanese speakers with a pitch accent background.

Q2. Is pitch accent information involved in recognizing Japanese words by L2 speakers of Japanese with different L1 accent backgrounds (English, Norwegian)?

H2. There will be statistically greater accuracy and confidence in the use of F0 contour in Japanese word identification by L2 speakers with a L1 pitch accent background (Norwegian) than by native speakers of a non-pitch-accent language (English)

It was envisaged that we could also investigate whether L1 performance differs from L2 performance, and if so to what extent.

To test these hypotheses, a word discrimination test explored the role of F0 contour in the identification of words with lexical pitch accent in Japanese, using four subject groups. The L1 Japanese subjects included speakers of the standard accent with lexical pitch as well as speakers of an accent without lexical pitch. The L2 subjects included English students learning Japanese as a foreign language and Norwegian students also learning Japanese.

2 METHODOLOGY

The word discrimination task involved word pairs with contrasting pitch accents, High-Low (HL, Accent type 1) vs. Low-High (LH, Accent type 2 for the word *hashi*; Accent type 0 for the word *ame*) in the pitch-accent variety of Japanese. Each pair was represented by a single ambiguous word in the non-pitch accent variety of Japanese. Subjects were presented with 19 pitch-differentiated auditory stimuli graded in equidistant F0 values, ranging from HL to LH. *Superlab* was used to control the experiment. Each auditory presentation of a stimulus item was accompanied by two pictures representing the meanings of the members of the word pair. There were thus two alternative responses for each item, and subjects were required to push a button next to the appropriate picture to indicate their response. The proportion of the HL and LH responses was calculated for each item, and comparisons were made among the subject groups.

2.1 Subjects

There were four groups of subjects in this study: Group 1 consisted of 17 Japanese L1 speakers from the Tokyo pitch-accent dialect area (JL1_PA); Group 2 had 17 Japanese L1 speakers from a non-pitch accent dialect area (JL1_NPA); Group 3 was made up of 17 intermediate/advanced-level learners of Japanese as a foreign language who had English as their L1 (JL2_E); and Group 4 had 25 intermediate/advanced learners of Japanese with Norwegian as their L1 (JL2_N). The subject groups were homogeneous in that they were all university students, except for three English subjects.

2.2 Materials

Four two-mora words were selected for this experiment: *hashi* (HL 'chopsticks'); *hashi* (LH 'bridge') and *ame* (HL 'rain'); *ame* (LH 'sweets'). The four words were elicited from a Japanese L1 speaker with standard pitch accent and digitally recorded onto the computer

using a microphone. The forms with pitch accent type 1, *hashi* (HL) and *ame* (HL), were used as the base forms. Using the speech analysis tool *Praat*, the pitch of each word was manipulated in a series of 19 10 Hz steps from an archetypal pitch accent type 1 (HL) to an archetypal pitch accent type 2 (LH). The range of the *hashi* series was from HL *ha-* at 195 Hz and -*shi* at 85 Hz (the 0 Hz manipulation) to LH *ha-* at 195 Hz and -*shi* at 265 Hz (the 180 Hz manipulation). The 19 manipulated *ame* series ranged similarly in F0 from pitch accent types 1 to 0 in intervals of 10 Hz, from HL *a-* at 210 Hz and -*me* at 120 Hz (the 0 Hz manipulation) to LH *a-* at 210 Hz and -*me* at 300 Hz (the 180 Hz manipulation). See Figure 1. Table 1 shows the Hz values at three indicative F0 manipulation points; for clarity, the 8 stimuli on either side of the +90 Hz mid-range have been omitted. The mid-range was defined as the equidistant point of F0 manipulation (+90 Hz) from the first and the last F0 variants (0 Hz, 180 Hz).
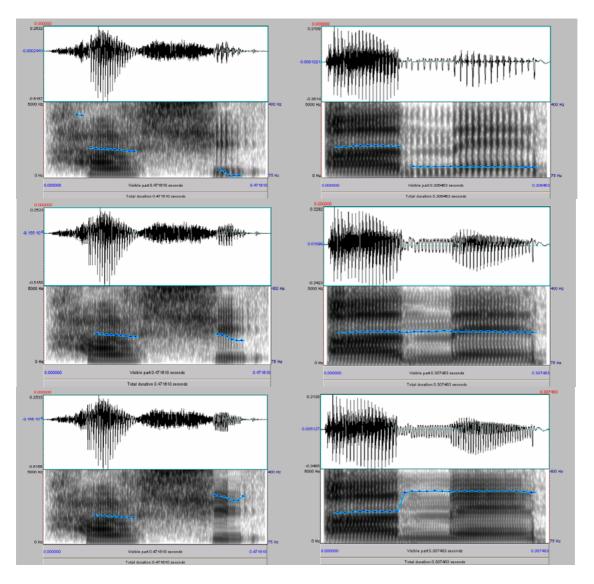
Figure 1

Hashi and *ame* stimuli: archetypal HL, mid-range, and archetypal LH

2nd mora pitch manipulation	*hashi*		*ame*	
	1st mora	2nd mora	1st mora	2nd mora
from the base (Hz)	*ha* (Hz)	*shi* (Hz)	*a* (Hz)	*me* (Hz)
0	195	85	210	120
+90	195	175	210	210
+180	195	265	210	300

Table 1

The archetypal HL, mid-range, and archetypal LH stimuli Hz values

2.3 Procedure

Subjects were required to make a two-alternative forced choice response each time they heard a stimulus. They were asked to identify the words they heard by pushing a button associated with one of the two pictures demonstrating the word meanings. Each stimulus was presented twice, as an isolated word; the 38 pitch-manipulated stimuli were presented in random order.

2.4 Analysis

The statistical test used to examine our data was the Binary Logistic Model with repeated measurements on the statistical programme, SPSS. This model described the relationship between two variables in our study: the two-choice response and the group, with differentiated F0 points. It was first established that there was no significant difference between first and second responses from each subject for each stimulus. To keep the model simple, we used only one response, and for this purpose, first answers were arbitrarily chosen.

Further explorations of inter-group contrasts were also conducted from our model; the different combinations of groups at each F0 point were compared using the statistical programme SAS.

3 RESULTS

We present the results of each word pair under the following headings; first, frequency and ratio in the raw data, then the regression analysis (using the binary logistic model), and finally accuracy and confidence measures.

3.1 Frequencies

The first stage in the analysis was to display the raw data, based on the first responses only, using cross tabulations to show the response frequencies and ratios for each of the word pairs (Tables 2 & 3). The percentage figures in these tables reflect the complementary nature of the responses: identification of one word involves rejection of the other alternative. Thus, as LH responses rise, HL responses fall. Whilst occasionally a subject failed to provide an answer, the total percentage of two answers was 100% for most test items. So, the percentage of the HL responses was calculated by subtracting the percentage of LH responses from 100. In the tables, the rows represent each of the 19 stimuli at 10 Hz intervals; the first stimulus (the 0 Hz

manipulation of the second mora) indicates the archetypal HL pattern and the last stimulus (the 180 Hz manipulation of the second mora) indicates the archetypal LH. The columns show the subject groups, and for each one, 'Count' provides the raw group score out of the maximum of 17 for groups 1-3 and out of 25 for group 4, followed by the percentage.

Tables 2 & 3 present the identification pattern for each set of graded stimuli in each subject group; the raw data figures show the percentage of identifications of the test word as *hashi* (LH) 'bridge' (Table 2) and *ame* (LH) 'sweets' (Table 3).

The graphs in Figure 2 correspond to the tables: the vertical axis shows the percentage LH response and the horizontal axis shows the step increases in Hz from the base value 0 to 180 on the second mora. The first point represents 0 Hz of manipulation (85 Hz) and the last point represents 180 Hz of manipulation (265 Hz) for *hashi* and the first point is 120 Hz and the last point is 300 Hz for *ame*. Responses of all groups are included together in the graphs, and clear differences among the four groups were observed. In both graphs, the steepest line is the JL1_PA group, followed by the JL1_NPA group. The two non-native groups' successful word identification follows a broadly similar pattern to that of the natives; however the highest confidence level for each response is lower, at around 70%, compared to approximately 100% for JL1_PA and roughly 80-90% for JL1_NPA.

	Group 1: JL1_npa		Group 2: JL1_pa		Group 3: JL2_e		Group 4: JL2_n	
F0 manip.	Count	Percent	Count	Percent	Count	Percent	Count	Percent
0	2	11.76	0	0.00	5	29.41	10	40.00
10	2	11.76	1	5.88	5	29.41	8	32.00
20	2	11.76	0	0.00	4	23.53	5	20.00
30	1	5.88	0	0.00	6	35.29	7	28.00
40	3	17.65	1	5.88	5	29.41	7	28.00
50	3	17.65	0	0.00	5	29.41	10	40.00
60	2	11.76	0	0.00	5	29.41	9	36.00
70	8	47.06	1	5.88	6	35.29	8	32.00
80	3	17.65	4	23.53	6	35.29	11	44.00
90	10	58.82	10	58.82	7	41.18	12	48.00
100	12	70.59	11	64.71	5	29.41	11	44.00
110	13	76.47	11	64.71	10	58.82	13	52.00
120	15	88.24	17	100.00	11	64.71	18	72.00
130	14	82.35	16	94.12	12	70.59	14	56.00
140	13	76.47	16	94.12	12	70.59	19	76.00
150	12	70.59	14	82.35	10	58.82	15	60.00
160	15	88.24	16	94.12	12	70.59	19	76.00
170	10	58.82	17	100.00	12	70.59	15	60.00
180	11	64.71	12	70.59	13	76.47	17	68.00

Table 2

Word discrimination: frequency and ratio of 'bridge' (LH) responses by pitch- differentiated stimulus and subject group for *hashi* (1st responses)

F0 manip.	Group 1: JL1_npa		Group 2: JL1_pa		Group 3: JL2_e		Group 4: JL2_n	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
0	1	5.88	0	0.00	4	23.53	6	24.00
10	1	5.88	0	0.00	3	17.65	8	32.00
20	1	5.88	0	0.00	4	23.53	6	24.00
30	2	11.76	1	5.88	4	23.53	6	24.00
40	1	5.88	0	0.00	6	35.29	10	40.00
50	1	5.88	0	0.00	6	35.29	7	28.00
60	1	5.88	1	5.88	5	29.41	9	36.00
70	0	0.00	0	0.00	7	41.18	9	36.00
80	7	41.18	4	23.53	7	41.18	8	32.00
90	16	94.12	17	100.00	13	76.47	16	64.00
100	14	82.35	16	94.12	12	70.59	18	72.00
110	16	94.12	17	100.00	8	47.06	11	44.00
120	14	82.35	16	94.12	12	70.59	18	72.00
130	14	82.35	16	94.12	11	64.71	16	64.00
140	14	82.35	16	94.12	14	82.35	16	64.00
150	13	76.47	17	100.00	7	41.18	15	60.00
160	13	76.47	17	100.00	12	70.59	13	52.00
170	15	88.24	16	94.12	12	70.59	18	72.00
180	16	94.12	17	100.00	13	76.47	20	80.00

Table 3

Word discrimination: frequency and ratio of 'sweets' (LH) responses by pitch- differentiated stimulus and subject group for *ame* (1st responses)
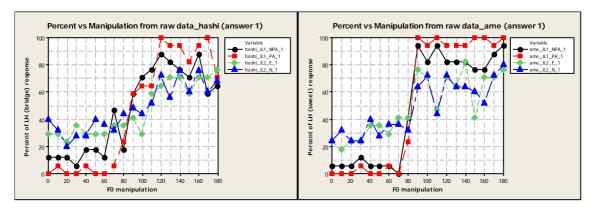
Figure 2

Identifications of *hashi* (LH) 'bridge' and *ame* (LH) 'sweets' among subject groups (from raw data)

3.2 The Binary Logistic Model

Our data was analysed using a Binary Logistic Model with repeated measurements on SPSS. The overall pattern of the four groups is shown in the graphs of Figure 3. The graph shows that the groups behaved differently as F0 manipulation increased. The JL2_E and JL2_N groups show broadly similar response curves in the model, whilst there is a clear difference between two JL1 groups, and JL1_PA is the most responsive to differences across the stimulus range. SAS explored the variation between the different combinations of groups at

each F0 point. A significant difference between the L1 groups and the L2 groups was observed (p=0.009 at 60 Hz and p=0.0011 at 120 Hz for *hashi*; p=0.0028 at 60 Hz and p=0.0511 at 120 Hz for *ame*). The difference between the two L1 groups was significant (p=0.0887 at 60 Hz and p=0.0887 at 120 Hz for *hashi*; p=0.0137 at 150 Hz, p=0.0349 at 160 Hz for *ame*) unlike the difference between the two L2 groups. The difference between the combined groups JL1_NPA&JL2_E and JL1_PA&JL2_N was observed at certain points (p=0.0209 at 70 Hz, p=0.0772 at 120 Hz for *hashi*; p=0.0071 at 150 Hz, 0.0827 at 160 Hz for *ame*), but this might reflect a JL1_PA vs. JL1_NPA difference at points outside the mid-range. There was no large difference between the two L2 groups at any stimulus value point.
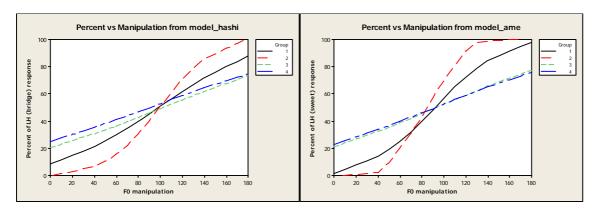
Figure 3

Identifications of *hashi* (LH) 'bridge' and *ame* (LH) 'sweets' among subject groups (from model)

3.3 Accuracy and Confidence

Table 4 displays the percentage of correct responses at 0-60 Hz and 120-180 Hz manipulation points. The accuracy of the JL1_PA group is significantly higher than the accuracy of the other 3 groups. Both L2 groups again show similar scores, although the scores of the English group are slightly higher than Norwegian group for both words. There are clear differences in accuracy between JL1_PA and NPA groups.

	hashi				*ame*			
	JL1_NPA	JL1_PA	JL2_E	JL2_N	JL1_NPA	JL1_PA	JL2_E	JL2_N
0-60 Hz & 120-180 Hz	82.93%	96.42%	70.58%	65.77%	87.39%	98.11%	72.90%	69.86%

Table 4

The percentage of the correct responses at 0-60 Hz and 120-180 Hz manipulation points

We categorized responses falling into the 0-40% and 60-100% bands as high confidence responses; responses in the central 41-59% band reflect low confidence, or guessing. The central band for the L2 groups accounts for around 33% of the total stimuli range for both words, from the rough estimation from the model. This is a higher proportion than is found in the L1 groups, with the 17% (*hashi*) and 6% (*ame*) for the JL1_PA group, and 22% and 11% for JL1_NPA.

4 DISCUSSION

A significant difference in accuracy and confidence level between the L1 pitch accent and non-pitch accent groups was observed. These results establish that the non-pitch accent background of L1 speakers impeded their perception of pitch accent in standard Japanese. Highly significant differences were observed between L1 and L2 groups; however, contrary to expectation, the Norwegian group demonstrated tendencies similar to those of the English group; however, this result might be dependent on the methodology employed; the non-native groups showed a greater level of internal inconsistency in test performance, and a few subjects who showed a total lack of awareness of the Japanese standard pitch skew the results. One of the factors influencing this was the kind of Japanese pitch accent they had been exposed to. A further pedagogical factor may also be very important: the role of pronunciation teaching, especially suprasegmental training, in their classroom experience. Further research would be required to investigate these. There are, in addition, mobility and socio-economic factors which might influence pitch contrast performance among L1s.

Whilst the four groups performed differently, response curves in the model were very similar across groups, indicating that all groups used pitch accent information in lexical selection.

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Reference to Space in Chinese and English Poster Descriptions[*]

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The present study compares reference to space in Chinese and English oral discourses elicited on the basis of a poster description task. In the last two decades, reference to space has received a lot of attention from linguists and acquisitionists alike. The typology for the expression of space in languages as proposed by L. Talmy instigated a lot of these studies cross-linguistically. Whereas reference to space is very much linked with our perceptual and cognitive systems (and may therefore be considered to be guided by universal factors), recent studies also show that languages have very different ways of expressing spatial information. For example, English is proposed to be satellite-framed, expressing manner of motion in the verb and path in the satellite; Chinese, on the other hand, seems to be an equipollent language (Slobin) that expresses path in both main verbs and satellites. These raise questions in the acquisitional context regarding the factors guiding acquisition: whether they are of a universal cognitive or of a language-specific nature. The comparison of discourses by English and Chinese natives will allow us to address this question in more detail. In addition, the present task requires, on the part of speakers, not only spatial knowledge (introducing a spatial setting, keeping track of the hierarchical ordering of spatial information, etc.), but also knowledge about discourse coherence and cohesion overall. Results of the present study show that Chinese resembles English with respect to frequency of the expression of explicit spatial relations and this is largely task-specific. The two differ in aspects such as the place of the location with respect to the rest of the information in the utterance, and types of spatial relations expressed in the poster description; and this is mainly of a language-specific nature.

1 INTRODUCTION

Generally speaking, reference to space is concerned with 'the way in which entities are located or move in a particular place in a physical world…providing spatial information may consist of presenting the locations of some objects as landmarks for establishing the locations of other objects' (Hendriks 1993:15). According to Talmy (1975, 1983), a 'complete motion scene' includes four elements: a Figure, which is moving or located with respect to another entity; a Ground, which is the reference object itself; a Motion, the movement or the state of location *per se*; and a Path, which is the course of displacement or the position occupied by the Figure in relation to the Ground. Apart from these, a 'motion event' may also involve external events such as Manner and Cause. The spatial relations between the Figure and the Ground can be positional or static (i.e. a general location), or directional and dynamic (i.e. change of location). Based on his analysis of spatial information encoded in the verb proper, Talmy makes a typological classification of languages into three main groups, combining information about Motion and Manner/Cause; Motion and Path (e.g., French); and Motion and Figure (e.g., Atsugewi) respectively. Both Chinese and English, the two languages compared in the present study, fall into the first group.

In the light of Talmy's overview of spatial situations, the present study aims to examine reference to space in English and Chinese oral discourses resulting from a particular task of poster description. The spatial events involved in this task, as can be seen in what

follows, mainly belong to the type of 'general locations', and particular attention will be directed to language-specific characteristics (especially the distribution of spatial information in locative prepositional phrases given that the verbs in these two languages encode similar spatial information) and/or communicative demand set by the task.

1.1 A brief review of related previous studies

It should be noted, in the first instance, that the task of static spatial description of a poster has been conducted before (e.g. Carroll *et al*. 2000). However, it has mainly been conducted in the field of second language acquisition and focuses on how principles of information organization are perspective-driven and associated with patterns of grammar. In contrast, the present research is more specifically concerned with the way in which spatial concepts are organized and expressed in oral discourse by subjects with different native languages. The same 'poster description' task, which includes native adult subjects, is also conducted by Hendriks and Watorek (2005), but the languages contrasted are French and English, the former of which tends to express Path in the verb root, whereas the latter encodes Manner/Cause instead. Thus more differences are likely to be ascribed to the typological variations rather than language-specific characteristics. Other similar description tasks conducted employ different elicitation materials (usually three-dimensional space) such as a miniature village or a miniature living room, and are mainly concerned with the linearization strategy ('grouping' vs. 'sequential') adopted by subjects in relation to organized vs. dysfunctional space (Carroll & Stutterheim 1993; Ehrich & Koster 1983, amongst others).

It should be mentioned that in a number of cross-linguistic studies of reference to space, English remains one of the most frequently studied languages while research in Chinese is scarce. Available empirical researches in Chinese usually focus on the spatial perspectives adopted by children in oral discourse or on the comparison between Chinese and some non-Germanic or Romance language such as Japanese (see, for example, Fang 1987). Therefore, a systematic investigation with this particular type of poster description task between English and Chinese is greatly needed.

1.2 Research questions and research method

The present study aims to examine two main questions: first, how does Chinese differ from English (if at all) in reference to space with respect to the following three aspects: the expression of explicit spatial relations in the poster descriptions; place of the location with respect to the rest of the information in the utterance; and types of spatial relations expressed? Second, to what extent can these differences (if at all) be ascribed to language-specific characteristics, and to what degree are they due to the requirement inherent in the poster description task?

The subjects in the present study consist of 10 native speakers of Chinese and 10 native speakers of English with an average age of 20 years. The poster used as the elicitation material in this task is taken from the series: *Hier fallt ein Haus, dort steht ein Kran, und ewig droht der Baggerzahn, oder, die Veranderung der Stadt*, 'Here collapses a city' by Jorg Muller, 1976.[1] It is the central picture from a triptych depicting the scene of a historical town square. The task is designed in such a way that the subject should produce a reasonable oral discourse that enables the naïve interlocutor, who has no visual access to the poster, to draw a picture of the town square exclusively based on the description heard. Subjects are assessed

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[1] The elicitation material used and the data from native English speakers in the present study partly came from a two-year project exploring into the role of conceptual complexity in the acquisition of the spatial domain by speakers of different languages. The project was financed by the CNRS (Project APN 2JE 454), and was directed by M. Watorek.

individually. When the information provided by the subject is not sufficient, he may be asked questions like 'could you be a bit more precise?', but not questions requiring exact spatial information like 'Where is X?'.

2 RESULTS

In what follows, the results of reference to space in Chinese and English poster descriptions will be discussed in three sub-sections. Section 2.1 will analyse the data concerning the frequency of explicit spatial relations in oral discourse with focus on the varying degrees of explicitness of the Ground in reference maintenance in Chinese. Section 2.2 deals with the place of the Ground in relation to other elements in the utterance, with particular attention paid to some distinctive pattern that might be found in Chinese. Finally, the data will also be analysed in terms of types of spatial relations expressed, namely, what topological and projective (i.e., sagittal, lateral and vertical) relations are expressed by different speakers.

2.1 The expression of explicit spatial relations in the poster descriptions

Concerning the expression of explicit spatial relations in this study, we find that both English and Chinese subjects provide explicit spatial information in their descriptions (72% in English; 91% in Chinese). Furthermore, the data shows that speakers of both languages frequently provide more than one locative prepositional phrases in their utterances. We attribute this feature to the data elicitation material used, since the best way to describe the poster is to specify explicitly the relative locations between entities, or with respect to the poster as a whole.

It should be noted that Chinese speakers provide a particularly high proportion of spatial information in the utterance (91%). That is, the percentage of the Ground omission resulting from Chinese RVC constructions[2] is unusually low. We thus believe it is meaningful to compare the different forms of the Ground in reference maintenance in Chinese normal narrative and this particular poster description. Table 1 below represents a spatial scale in Chinese ranging from the most explicit form of 'full lexical NP' to the least explicit one (i.e., 'omission of the Ground').

FORMS OF GROUND	NORMAL NARRATIVE	POSTER DESCRIPTION
Full lexical NP	19%	72%
Lean forms[3]	11%	26%
Omission of Ground	70%	2%

Table 1

The Poster Description[4]

Concerning omission of the Ground, it was found that there was a huge difference between the frequency of use in the poster description (2%), and that used in normal narrative (70%). We propose that this is, in the first instance, due to the fact that the predominant majority of events in this task belongs to a subtype of 'general location', namely, 'absolutely static

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[2] Resultative Verb Compound (RVC) refers to the phenomenon that the verbal predicate in Chinese usually takes the form of two non-identical verbs immediately following each other, i.e. Verb1-Verb2. The second verb is a verb complement mainly expressing the result of an action (for more details, see Li & Thompson 1981: 54). Ground is usually omitted in such cases.

[3] Lean forms here include pronominal NP, composite locative and nominalized place word.

[4] The data in the column of 'Normal Narrative' in this table is quoted from Hendriks 1993: 151.

location', which is set in stark contrast with the 'change of location', where the verb complement which encodes the spatial information of Path in Chinese RVC constructions often leads to omission of the Ground. In fact, in events of absolute static locations, the presence of a preposition necessarily triggers the Ground, as is illustrated in example (1) below.

(1)   Malu bianshang ting zhe   ji   liang che
        Road on the side stop zhe-DUR[5]   several -CL   vehicle
        'Several vehicles are stopping on the roadside.'

It should be noticed that a small number of locational events in the poster description fall into another category of 'general location', that is, the 'relatively static location'. In normal narrative, the Ground is also frequently omitted under this circumstance, because it resembles the events of 'change of location' in that both usually contain a verb complement which has encoded the Path and thus do not necessarily trigger the Ground, as can be seen in example (2) below. Since the verb complement *lai* 'coming' here has already encoded the Path of displacement within the boundary of a general location (e.g., the road), the Ground is implied, rather than specified explicitly.

(2)   You   yi   liang che zhengzai chilai
        there is one -CL   car -DUR   driving-coming
        'There is a car driving-coming.'

Contrary to this general trend in normal narrative, we find in the poster description a number of utterances where the Ground in relatively static events is unusually made explicit via locative phrases. Example (3) below illustrates a case in point.

(3)   Yi   liang dianche zhengzai xiang   tuhua   de   zhongjian shilai
        One -CL   tramcar -DUR   towards poster -ASSOC middle   driving-coming
        'A tramcar is driving-coming towards the middle of the poster.'

Given the nature of this poster description task, we suggest that locative phrases are employed here as 'spatial devices' to identify a particular entity, or to distinguish some entity from all others co-present in one space. Viewed in this light, in the above examples, the addition of spatial information 'towards the middle of the poster' successfully distinguishes the car in question from another one going in the opposite direction on the adjoining road. Note that this finding also corresponds to those presented in the study by Hendriks and Watorek, where it is reported that the supply of locative phrases in such situations 'has an explicitly **informing** function, telling the listener about the location of the entity and its actions, in principle making this description sufficiently extensive to not only discriminate this entity from all other entities on the square but also locate it properly' (2005: 8; emphasis mine). Therefore, the particularly low proportion of omission of the Ground in Chinese poster description (2%), as compared to that in normal narrative (70%), can be taken not only as a function automatically requires the Ground; but also as a function of the distinctive use of locative phrases in relatively static locational events as an effective means to distinguish among various entities in the poster. That is, the low percentage of omission of the Ground is in principle task-specific.

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[5] Abbreviations used are: DUR = durative aspect; CL = classifier; ASSOC = associative

2.2 Place of the location with respect to the rest of information in the utterance

Previous studies on linearization at the utterance level reveal that various factors such as the relative newness of spatial information in an utterance and the languages concerned might all interact with each other and thus exert an influence on linearization at the utterance level (Hendriks and Watorek: 2005, Ehrich and Koster: 1983, amongst others). One important feature of the poster description task in the present study is that once an entity is mentioned in setting the spatial framework it very often functions as the Ground in reference maintenance and is used in locating another new entity (i.e., the Figure). In English, two syntactic constructions are available to introduce the New in relation to the Given: the V-NP-PP construction using existential verb 'there is'; and the PP-V-NP structure using the locative 'be'. In a similar way, there exist in Chinese two constructions which can be roughly regarded as the functional equivalents to the above English structures. One involves the Chinese existential verb *you* 'there is', and the other identifying verb *shi* 'to be'. See examples in (4a) and (4b).

(4)   (a) You   yi zuo diaoxiang zai   guangchang zhongjian
            there is one -CL statue   be/at square   middle
            'There is a statue in the middle of the square.'
        (b) Zai guangchang zhongjian shi   yi zuo diaoxiang
            be/at square   middle   to be one -CL statue
            'In the middle of the square is a statue.'

The question under discussion is whether this similarity in syntactic structures will lead to a balanced distribution of the location between the preverbal position and the postverbal position in both languages. Our data shows that English subjects produce utterances with spatial information in the preverbal position in 33% of the cases, and postverbal position in 44% of the cases respectively, which can be considered as a relatively even distribution of the location on the utterance level. In contrast, Chinese subjects prefer to place the location in the initial position of an utterance (76%); and in only 15% of the cases do Chinese speakers put the spatial location in postverbal position, though the latter is equally allowed as the former in terms of syntactic structure.

Previous studies on the placing of the locative phrase in Chinese reveal that PP-V-NP construction comprises the majority of utterances (58%), while V-NP-PP structure occupies 42% in normal narratives (Cui 2002: 4). As can be seen from the above, this tendency becomes more pronounced in our data due to the task-specific requirement. Given this result, functional linguists who are concerned with the topic-focus information structure may argue that since the poster description task *per se* involves elaborate specification of locations among various entities, the prepositional phrase (PP) encoding the Ground (which is apparently the topic of the utterance, and which usually has been mentioned in setting the spatial framework) will naturally appear in the initial position of an utterance as the Given information. The noun phrase (NP), which denotes the Figure to be located with respect to the Ground, on the other hand, will then occur in the 'end focus' position as the New information. It should be noted here that this Given–New information distribution theory alone can not provide an adequate explanation for the phenomenon observed (i.e., the predominating PP-V-NP information with respect to the verb (postverbal position in favour), rather than to what is Given. As can be seen from the examples (4a) and (4b), both syntactic constructions available in Chinese are unmarked and guarantee the location of the New information postverbally.

A further analysis of Chinese data shows that most discourses employing a large number of V-NP-PP constructions tend to be less coherent and cohesive than those in which PP-V-NP structures are frequently used. This is because the sequential use of V-NP-PP construction results in a constant shift of topics which suggests the occurrence of a topic

rupture. In stark contrast, the consistent adoption of PP-V-NP structure brings out topic connectivity, that is, the segment of discourse is organized centring around a conspicuous entity. One striking example is given below in (5).

(5) … you   yi   ge laoren. Laoren   de   zuoyou liangbian   you
         there is one -CL old man. Old man -ASSOC left-right both sides there are
         liang ke shu. Laoren de   mianqian you   ji   zhi gezi.
         two -CL tree. Old man -ASSOC front   there are several -CL pigeon.
         Laoren   de   youce   yi ge ren na   zhe baozhi.   Ranhou
         Old man -ASSOC right side one -CL man hold -DUR newspaper. Then
         laoren   de   qianfang kao shu de   defang you   yi   ge
         old man -ASSOC front side near tree –ASSOC place   there is one -CL
         zixingche
         bicycle
         'There is an old man. On both the left and the right sides of the old man are two trees. In front-area of the old man are also several pigeons. To the right hand side of the old man is a person reading the newspaper. Then to the front of the old man, that is, near the tree, is a bicycle.'

As is well known, Chinese is in principle a discourse-oriented language, where maintaining topic connectivity is an inherent requirement, as can be demonstrated by the observation that topic NP drops in Chinese are typically recoverable from the preceding utterance, or from the context involved (see also Huang 1987). In our poster description where topic NPs are usually present due to the task-specific requirement, maintaining their connectivity (i.e., avoiding constant shift to a new topic) on the discourse level becomes particularly important as it is responsible for constructing a coherent and cohesive discourse. Therefore, we argue that it is the language-specific discourse principle of topic connectivity in Chinese that plays a greater role in place of the location with respect to other information in the utterance. Note, furthermore, that this topic connectivity also corresponds to the spatial cohesion in the discourse. As demonstrated in (5) above, centring around the place where the old man stands, the surrounding space in all directions is talked about, and it is within this that more new entities are being accurately located. This suggests the formation of a sub-space with 'the old man' as its central entity. Note that this discourse principle of topic connectivity, functioning in conjunction with a distinctive space-indicating bound morpheme in Chinese locative phrase (i.e., *mian/bian* 'side/area'), leads finally to the adoption of overall 'grouping' linearization strategy by Chinese subjects on the discourse level, even in the presence of a dysfunctional space.

2.3 Types of spatial relations expressed

Spatial relations fall into two categories: the projective and the topological relations, respectively. The former involves using the coordinate system of three axes, namely, with respect to the Ground; whilst the latter are based on the conceptualisation of space as defined by geometric shapes such as points, lines, planes and volumes, that is, irrespective of dimensions or axes. Previous studies have shown that language influences the choice of spatial relations expressed (see, Hendriks & Watorek 2005, amongst others).

    Out data shows that in both languages, the proportion of use of topological relations is around 50%. A finer analysis demonstrates that among the topological relations expressed, the types of 'in the region of' and 'near' spatial relations consist of the majority (65% in English; 61% in Chinese). This can actually be ascribed to the task-specific requirement. In the poster description, it is basically impossible to accurately locate the relative positions of all entities in one general space, that is, space delimiting is needed in various degrees. Insofar as the

projective relations are concerned, Chinese subjects use less projective relations in the spatial description (37%), as compared to the figure in English data (54%). On some occasions where the same scene is described, English speakers tend to use sagittal and vertical relations, whereas Chinese subjects show a preference for the topological way of expression. We would like to argue that this is largely due to pragmatic factors (e.g., state of motion, direction, shape of the referent, etc.) which have been demonstrated to put more constraints on the use of projective relations in spatial description in Chinese (Li 1986). In short, our data support the view that both language factors (pragmatic principles) and the communicative demand of the task have a resultant impact on the spatial relations expressed.

3 DISCUSSION

Results of the present study show that Chinese resembles English with respect to frequency of the expression of explicit spatial relations and that this is largely task-specific. The two differs in aspects such as the place of the location with respect to the rest of the information in the utterance, and types of concrete spatial relations expressed in the poster description; and this is mainly of a language-specific nature. It is worth mentioning that conclusions drawn in this study are in essence tentative, and subject to verification from larger samples. Note that our analysis also indicates that Chinese seems to show some resemblance to German in that both are space-sensitive. Corresponding to the distinctive space-indicating morpheme in Chinese, the anaphoric '-da' (i.e., 'there') always forms a part of the locative phrase in German, thus entities are typically maintained on the basis of the regions of space that they share (e.g., upper section-*there*-at or *there*-under; see Carroll *et al.* 2000: 455-456 for details). Therefore, one dimension for further research would be to compare Chinese and German to see if this shared tendency of space-sensitivity would lead to more similarities between two languages with respect to the frequency and the position, as well as the type of spatial relations expressed in an utterance. On the other hand, our poster description involves mainly events of 'general locations' rather than 'change of locations', in which omission of the Ground can be predicted to be generally low. Thus another orientation for further research might be to change the data elicitation material into the one involving more events of 'change of locations' (i.e., more dynamic events), and then compare English and Chinese again to see whether change of the data elicitation material will have an impact on the two languages with respect to the three dimensions discussed above.

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The Speaking Subject in Communication: 'Subjectivity' and the (Gendered) Self[*]

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The present research is theoretically oriented aiming at revealing the relationship between two notions closely associated with the speaking subject, i.e. 'subjectivity' and (emotional) 'involvement'. Tracing back to the major approaches of the two notions I try to detect the reasons for their being disconnected. At the same time, I propose a revised conception of 'subjectivity' which encompasses 'involvement' in its content and covers every aspect of self. Moreover, I argue that the dimensions of 'subjectivity' (the cognitive and the affective) are almost indistinguishable in language use, where linguistic signs are multifunctional and cognition blends with emotion. The above hypothesis is checked and confirmed in informal conversations, where the use of personal pronouns is examined. Finally, some preliminary and tentative remarks about the interplay of gender and personal pronouns are attempted.

1 INTRODUCTION

Grasping the concept of 'subjectivity' entails a linguistic view which 'understands language as something living and behind the words feels the speaker or writer, whose intention prompted these words' (Mathesious 1971 cited in Daneš 1994: 252). In the beginning of the 20th century such a view was rather on the margins of linguistic interest which focused on propositional thought. The most extreme version of mainstream linguistics until the early 70s viewed language as a formal abstract system analyzed separately from its speaking subject and his/her interactant in discourse. No attention was paid to the speaker himself/herself and to his/her communicative needs during the interaction.

Without ignoring the referential function of language –i.e. the exchange of information– we cannot overlook the fact that through the manner of presenting a proposition we reveal ourselves, leaving our personal imprint in discourse. The speaking subject is not an external observer of the facts that he/she describes, but a person who thinks, speaks, interacts, and feels. In other words, language is a tool we also use for presenting ourselves and, as such, it is imbued with 'subjectivity'.

My aim in the present paper is to examine the relationship between two notions closely associated with the speaking subject, i.e. 'subjectivity' and (emotional) 'involvement', in an attempt to critically assess the content ascribed to them. In my view, the two notions cover a range of phenomena and are intimately related to each other.

2 THE CONCEPT OF SUBJECTIVITY

Broadly speaking, 'subjectivity' in language concerns the expression of self and the representation of a speaker's (or more generally a locutionary agent's) perspective or point of view in discourse –what has been called a speaker's imprint (Finegan 1995: 1). The first who introduced the term was E. Benveniste (1958) in his article 'Subjectivity in language'.[1] Benveniste defines 'subjectivity' as the capacity of the speaker to posit himself/herself as a

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[1] The article was later (1966) reprinted in his book "Problèmes de linguistique générale".

subject. As he writes, 'it is in and through language that man constitutes himself as a subject because language alone establishes the concept of "ego" in reality, in its reality which is that of the being'. It is he who combines 'subjectivity' with language usage, claiming that 'ego' is the one who says 'ego'. Language for Benveniste is possible only because each speaker sets himself/herself up as a subject by referring to himself/herself as 'I' in his/her discourse (Benveniste 1971: 224). Benveniste does not confine himself to arguing how deeply marked language is by the expression of 'subjectivity'. He also seeks the expressions that reveal it. Beginning from the personal pronouns he remarks that they are never missing among the signs of language, no matter what its type, epoch or region may be (1971: 225). Language is, accordingly, the possibility of 'subjectivity', because it always contains the linguistic forms appropriate to its expression, and discourse provokes the emergence of 'subjectivity' because it consists of discrete instances (1971: 227).

Based on Benveniste's position, Lyons' 'subjectivity' refers 'to the way in which natural languages, in their structure and their normal manner of operation, provide for the locutionary agent's expression of himself and of his own attitudes and beliefs' (Lyons 1982: 102). More specifically, Lyons proposes the notion of 'locutionary subjectivism' which presupposes the following:

i)   that the term 'self-expression' is to be taken literally and cannot be reduced to the assertion of a set of propositions, and

ii)   that there is a distinction to be drawn, in the structure and use of language, between the subjective component in which the speaker expresses himself/herself and an objective component comprising a set of communicable propositions

As far as i) is concerned, Lyons emphasizes two points: first, that the self is not to be understood as being logically and psychologically distinguishable from the beliefs, attitudes and emotions of which it is the seat or location, and second, that the self which the locutionary agent expresses is the product of the social and interpersonal roles that he has played in the past and it manifests itself in a socially identifiable way in the role that he is playing in the context of utterance (Lyons 1981: 240). With regard to ii) Lyons argues first, that the distinction between the subjective and the objective is gradual, rather than absolute, and second, that what is here described as objective is in origin intersubjective, so that language is even more deeply imbued with 'subjectivity' than he is supposing (1982: 105).

These two broad but also encompassing delineations of 'subjectivity' will be my starting point for the examination of the concept. I will only mention that 'subjectivity' has also met with a growing interest as a phenomenon in the procedure of grammaticalization and as a basic conception in the framework of cognitive grammar (cf. Traugott 1995; Langacker 1990). Although both approaches shed light to interesting facets of the notion, I will not draw upon their definitions because they are very technical and concern mainly the cognitive construction of the subject, leaving aside the human factors involved.

Finally, an overlooked and often not acknowledged aspect of 'subjectivity' is the one related with the affective dimension of the speaker. Maynard's work belongs in this framework based mainly on the Japanese tradition which has always recognized the non-referential nature of language. According to Maynard, 'subjectivity' is one of the modal characteristics of language 'as reflected in the expression of his or her personal attitude and feelings' (Maynard 1993: 12). The expression and displaying of 'affect' in language is also an important topic in E. Ochs and B. Schieffelin's work, who prefer 'affect' as a broader term than 'emotion' which includes feelings, moods, dispositions, and attitudes (1989: 7). However, the two researchers do not raise the issue of the relationship between 'affect' and 'subjectivity'.

I will not further amplify on approaches of 'subjectivity' but I will attempt to account for their differences. First of all, each approach illuminates a different aspect of the speaking subject and, consequently, of 'subjectivity'. In some definitions 'subjectivity' is identified with the cognitive dimension of the speaker (manifested through deixis, epistemic modality,

etc.), while in others the emotional nature of the speaker is projected (manifested through emotive, evaluative components, etc). However, studies dealing with the emotional aspect of the speaking subject are not directly related to the concept of subjectivity, despite the fact that emotion, and more broadly 'affect', is one of the most typical ways of self-expression. Moreover, a general observation that applies is that the notion of subjectivity has experienced a gradual limitation and has been almost identified with 'logical involvement' (that is, the extent to which the speaker is part of the meaning of the linguistic expression). However, such a restricted interest in 'subjectivity' cannot offer any insight into the full concept and, of course, cannot account for the multiple dimensions of the speaking subject.

Therefore, I shall adopt a view of 'subjectivity' that can be summarized as follows: 'subjectivity', as the expression of self in discourse, concerns every manifestation of the speaker's presence in language and covers the logical as well as the emotional dimension of the subject. In other words, I argue that a comprehensive delineation of 'subjectivity' should not only consider the traditionally acknowledged facets of 'subjectivity' ('modality', 'perspective') but also incorporate the emotionality of the speaking subject which equally contributes in its constitution. Thus, following Finegan's categorization (1995: 4), we have to examine three different areas in order to capture the content of 'subjectivity': i) 'perspective' shaping linguistic expression, ii) 'modality' or 'epistemic status' of the proposition contained in utterances and iii) 'affect' towards the propositions contained in utterances.

3 THE CONCEPT OF INVOLVEMENT

The systematic study of 'involvement' began with the work of the sociologist Erving Goffman. Goffman argues that 'when an individual becomes engaged in an activity, whether shared or not, it is possible for him to become caught by it, carried away by it, engrossed in it – to be, as we say, spontaneously involved in it'(Goffman 1961: 35). As we can infer, Goffman ascribes both a cognitive and an affective aspect to the notion of involvement, although, in the years that followed, the cognitive dimension was lost and 'involvement' has been described as belonging to emotive communication and used as a more specific term of 'affect'.

After Goffman's introduction, 'involvement' was invoked systematically as an analytic category in two research areas, sociolinguistics and discourse analysis. In the framework of interactional sociolinguistics, Gumperz refers to 'conversational involvement' as the presupposition of understanding rendered possible by virtue of the shared linguistic and sociocultural knowledge. In other words, 'involvement' is the result of conversational inference (Gumperz 1982: 1-4). The second area of research, discourse analysis, examines 'involvement' mainly on the basis of structural and stylistic differences between written and spoken language. In this domain, Chafe has conducted extensive research, concluding that the prototypical spoken genre is characterized by 'fragmentation' and 'involvement', whereas the prototypical written genre by 'integration' and 'detachment' (Chafe 1985: 116).

Drawing both upon Gumperz and Chafe, Tannen defines 'involvement' as an internal, even emotional, connection individuals feel which binds them to other people as well as to places, things, activities, ideas, memories, and words (Tannen 1989: 12). Tannen is among the few researchers who explicitly discuss the relationship between 'linguistic form' and 'involvement'. In fact, she highlights three spontaneous and pervasive linguistic strategies in conversation, which create involvement in discourse: 'repetition' (of phonemes, words, and phrases), 'constructed dialogue' and 'imagery' (1989: 17-29). Similar to Tannen's definition is also that of Lakoff's, who furthermore foregrounds another issue, that of power relations, and points out how 'involvement' interweaves with power (Lakoff 1990: 49-50).

Another attempt towards the clarification of the notion of involvement is made by Katriel and Dascal, who seek to theoretically distinguish 'involvement' from the concept of

'commitment' (Katriel & Dascal 1989). According to these writers, 'involvement' and 'commitment' belong to two quite different kinds of concepts – 'degree' and 'absolute' concepts respectively – and stand in complementary relation to each other.

Despite the theoretical clarifications, 'involvement' still remained a problematic notion. The conceptual problems and the vagueness of the definitions as well as the variety of the related terms used (cf. 'affect', 'engagement', 'emotion', etc.) have been pinned down by Besnier. As he remarks, the problems associated with the notion result from the fact that its current definitions are rooted in a Western ethnopsychological understanding of social interaction (1994: 279-281). His proposal aims at a refinement of the concept, in which the relationship between emotionality and linguistic practices is grounded in the critical examination of the cultural and social dynamics of human interaction. Finally, the lack of a unified conceptual framework has also been noted by Caffi and Janney, who work towards a pragmatics of emotive communication. As far as 'involvement' is concerned, Caffi and Janney observe that the notion is used in widely different ways, revealing great heterogeneity. Generally, in the definitions of the notion, a movement is noticed from an individual 'psychological' orientation to an interpersonal 'social' orientation via a 'rhetorical-stylistic' orientation (1994: 345).

The described heterogeneity had another unremarked consequence as well: it further obscured the relationship between 'involvement' and 'subjectivity', making any correlation between them impossible. In my view, if we follow the majority of the literature and ascribe only affective content to 'involvement', then we have to subsume it under the 'umbrella' of 'subjectivity'. In other words, 'subjectivity' (or self-expression) cannot be limited to our rational thinking but should also accommodate our emotional nature. Otherwise, if we adopt Goffman's view of 'involvement', the differences between the two notions are almost erased.

However, the distinction between the logical and emotional facets of 'subjectivity' proves more difficult than it seems at first sight, because there is no clear cut dividing line between thoughts and feelings; what actually occurs is a blending of cognition and emotion. As has been argued, a high degree of logical involvement entails emotional involvement as well, and the reverse. Therefore, it is rather preferable to treat them as complementary than conflicting aspects of 'subjectivity'.

In the next section, I will attempt to explore this interweaving by examining the prototypical markers of 'subjectivity' and 'involvement'. If indeed the speaking subject is both cognitively and emotionally involved most of the time, then the markers of the two notions should be multifunctional.

4 THE EXAMINATION OF THE DATA

My data consist of five mixed casual conversations among friends and relatives. Informal interaction was actually preferred to formal talk on the assumption that this context of situation favours the expression of emotion, which is generally considered scarce in more formal contexts. More specifically, among a great variety of linguistic features, I chose to examine first person personal pronouns in subject position. The reason for this choice is that personal pronouns are described as the prototypical marker of 'subjectivity' in language (in its traditional conception). At the same time, personal pronouns appear in almost all approaches of 'involvement' as indexing the emotional engagement of the speaker.

There is one more reason which justifies the examination of personal pronouns: for the language under consideration, namely Greek, personal pronouns do not seem to add any referential information to what is already known from the verb ending. The referent of the pronoun is identified through morphology making the personal pronoun redundant. This explains the fact that personal pronouns are usually omitted since person and number features

are already given.[2] In Greek, three persons and two numbers are morphologically distinguished in all tenses of the indicative mood through verb inflection. Therefore, in cases where the personal pronoun is simultaneously used with the verb ending, it cannot simply clarify who is talking but it must have a special meaning.

The quantitative analysis of my data has shown that in 82.2% of the cases, the verb (in singular and plural as well) is used alone without the personal pronoun. However, in 17.8% of the cases, the personal pronoun also appears. But for what reason and under what conditions? If we look more closely at how personal pronouns are used in discourse, we may find an answer.

The most common function of the personal pronoun accompanying the verb is 'emphasis' which usually coexists with that of 'contrast'. When the personal pronoun is used, the speaker is not simply denoted but emphatically projected or contrasted to someone else. A characteristic example is the following where Π, following Λ's refusal to smoke, declares that he himself will smoke. He uses the personal pronoun to emphatically project his identity and to differentiate it from that of his conversationalist.

(1)
P   Καπνίζω πού   και πού   [εδώ.]
         (I) smoke from time to time [here.]
           "I smoke here from time to time"
Π   [Κάνε] δοκιμα[στικά ένα τσιγάρο.]=
                               [Have]   for a [test   a cigarette]=
                                 "Have a cigarette for a test"
P   [Σ' αυτό   το γραφείο.]
                                               [In this-NEUT the office.]
                                                 "In this office"
Λ   =[Μετά μετά.]
         =[Later later]
           "Later, later (I 'll smoke)"
Π →   [°Κάνα πούρο;] >Θα καπνίσω εγώ.<=
          [° A cigar?]   > Will smoke *I*.<=
         "(Would you like) a cigar? I will smoke"

Personal pronouns are also used when the speaker claims the right to speak or cedes the floor to someone else (in this case the 2nd person is used). This function has been called 'metalinguistic' (Davidson 1996) and described as ensuring smooth interaction. It is often combined with the function of 'reinforcing' an argument, because the presence of the personal pronoun strengthens speaker's argumentation adding 'weight' to his/her point. In this usage, personal pronouns usually appear with epistemic verbs ('I think', 'I believe', etc.). In the example that follows the speaker, by using the personal pronoun, claims the right to speak – although someone else already holds the floor – and strengthens the argumentative force of his position, and at the same time differentiates his view from that expressed previously.

(2)
M   Αλλά ούτως   ή άλλως και να μην (.) ισχύει αυτό,   αν ισχύει γι' αυτές,
     But someway   or other and to not (.) holds this-NEUT, if holds for them-FEM
                                                                                   PLUR

     αυτό   είναι που [(μας ενδιαφέρει.)]
     this-NEUT   is   that [(us interests.)]

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[2] However, in the third person the pronoun provides information about the sex of the speaker, which is not indexed by the verb ending.

"But, either way, even if this doesn't hold, if it holds for them, this is what interests us".

Γ   →   [*Εγώ ήθελα να το*]   πω
                      [*I*   wanted to   it-NEUT]   say
λί[γο διαφορετικά αλλά τώρα τώρα η   αλήθεια είναι ότι]
lit[tle   differently   but   now   now   the-FEM-SING truth   is   that]
"I would say that a little bit differently but now the truth is that"

Finally, personal pronouns can be used in the framework of politeness theory covering face needs. In this case, the use of personal pronouns can be ambiguous regarding politeness: it can claim the authority of the speaker, helping him/her to construct his/her identity (protect his/her negative face) or it can hedge his/her argument, softening his/her position (protecting, thus, the positive face of the hearer). The ambiguity is normally resolved with the contribution of context. In the following example, the personal pronoun hedges the claim of the speaker, a fact that is confirmed by the simultaneous presence of the adverb 'τουλάχιστον' ('for my part').

(3)

Α   πήγαμε   να φά:με, ε   πηγαίναμε   για πρώτη φορά ουσιαστικά
    (we) went   to ea:t,   e-ADVERS INTERJ (we) were going   for   first   time   actually
→   στον   όρμο   Παναγιάς, *εγώ* τουλάχιστον είχα πάει πριν από πολλά χρό//[νια και
    to the-MASC   bay   Panagias   *I*   for my part   had been before   many   yea[//rs and
    ξαναπήγα   τώρα.]
    (I) went again now.]
    "We went to eat, actually we were going for the first time to Panagias bay, I, for my part, had been there many years ago and I went again now."

Summing up, the qualitative analysis has indicated that first person subject pronouns, in a pro-drop language like Greek, undertake many pragmatic/discourse functions (emphasis/contrast, metalinguistic function, reinforcement of an argument, face needs/politeness), besides their referential use. Moreover, all these functions are associated with the interpersonal dynamics of interaction and, indirectly, with the emotive nature of the speaking subject. In other words, we could argue that personal pronouns convey 'social meaning' (cf. Duranti 1984). Finally, the described functions can and actually do coexist, thus proving that personal pronouns are multifunctional, or in Davidson's (1996) words, give 'pragmatic weight' to the utterance; and this 'weight' stems from the fact that utterances with personal pronouns are more personal and invested with emotion.

Of course, the functions personal pronouns can have are not restricted to those appearing in my sample. However, even in these five conversations it is shown that personal pronouns do not simply 'point' to the speaker but also contribute to the manifestation of his/her emotional state. In support of this assumption is also the observation that the context in which they appear usually contains many markers of 'affect' ranging from intonation to overlaps and back-channels. Finally, the multifunctionality of personal pronouns proves that the cognitive and the affective facets of 'subjectivity' are so closely related to each other that it is almost impossible to distinguish them.

5 PERSONAL PRONOUNS AND GENDER

At this point, I will attempt some tentative and preliminary remarks on the interplay of gender and personal pronouns. Based on quantitative results, I have found that women seem to prefer explicit reference to self – that is, the use of personal pronoun simultaneously with the verb ending – a little bit more than men (in 19.1% of the cases vs. 16.7% of the cases). I will just

remind the reader that the conversations I examined were all mixed with equal distribution of men and women (2 vs. 2). How can we interpret this slight difference?

I will not argue that we can regard this small difference as evidence of the different way women and men constitute themselves as subjects. In order to support such an argument, we have firstly to quantitatively extend the research. More quantitative results from similar and different settings are a necessary prerequisite to the formulation of our first interpretation. The findings, for example, from different settings could shed light to the role context plays in our presentations, on the assumption that the formality or informality of an encounter affects the way both women and men tend to construct their subjectivities.

Moreover, qualitative analysis is undoubtedly crucial to the interpretation of any quantitative result. In this case, there is an additional reason: in order to escape from reproducing gender stereotypes we have to examine the emergent dynamics of interaction. Echoing M. Goodwin (1998: 44), 'to avoid dichotomies that essentialize gender differences we need to look ethnographically at the diverse ways that language is used in a range of natural settings'. Ethnographic research will reveal how men and women present themselves in actual conversations conforming to or diverging from gender stereotypes.

6 CONCLUSIONS

In this paper, I have tried to critically assess the content that was ascribed to two notions closely associated with the speaking subject. Noting problems invoked by the inadequate ways in which 'subjectivity' and 'involvement' were defined, I proposed a revised conception of the two notions, which are linked to each other in a hyponymic relationship. That is, if we conceive of 'subjectivity' as the expression of the thinking/perceiving, feeling and interactional self, then one of its aspects should be 'involvement' which refers to the emotional nature of the speaker. Thus, 'subjectivity' has as many facets as the speaking subject.

Furthermore, I have argued that the cognitive and the affective dimension of 'subjectivity' are actually interwoven in language use, where the same linguistic features undertake many different functions and where cognition and emotion can hardly be separated.

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Politeness, Gender and the Face of the Speaker [*]

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The present paper deals with the well-known phenomenon of politeness, but from a different perspective, that of the speaker's face. The major aim of the paper is to reveal that dominant theories of politeness are other-oriented (to the hearer) and underestimate the needs of the speaker in communication. In order to explore the overlooked position of the speaker's face in interaction, I examine compliment responses arguing that the motivation for the acceptance of the compliment (self-praise) or the rejection of it (face-threatening for the hearer's face) seems to be the speaker's needs and not the protection of the hearer. On a second level, I explore how gender is (or is not) involved in the protection of the speaker's face by taking into account the fact that gender is a dynamic category which is constructed and reconstructed through language.

1 INTRODUCTION

Research on politeness matters, in an attempt to reveal the systematization of interaction through the formulation of rules, has focused on the exploration of 'politeness' with regard to others. Although this other-oriented approach, which depends almost exclusively on the hearer, gives us stable models of politeness, it underestimates to a high degree the facture of politeness in correlation with the speaking subject. What is in fact underestimated is the potentiality of the speaker to operate in a non-conciliative way within interaction, guided mainly by his own plans which are a result of his own personal needs.

The purpose of the present study is to investigate the phenomenon of politeness from the angle of the speaking subject, by emphasizing to the overlooked aspect of the protection of his own face. Assuming that, in order to achieve smooth communication, interactants have to avoid conflicts between them, we claim that a way of doing so is to ensure the balance between the goals and the expectations both of the speaker and the addressee.

2 STUDIES ON POLITENESS

Ruling from the above assumption of the balanced goals and expectations of interactants, I will explore this lack of interest towards the speaker's needs in some major approaches to politeness.

Beginning from the definition of 'politeness' by Lakoff, who is considered 'the mother of modern politeness theory' (Eelen 2001:2), we observe that she defines politeness as 'a system of interpersonal relations designed to facilitate interaction by minimizing the potential for conflict and confrontation inherent in all human interchange' (Lakoff 1990:34). Considering the minimum conflict and confrontation for all participants in interaction, we would expect that hereafter theories of politeness would focus both on the hearer and the speaker. Surprisingly, even in Lakoff's consideration of 'politeness', we find greater treatment of the hearer's part. Once she states her proposal about the Rules of Pragmatic Competence she puts together the claim that these rules have been highly affected by three areas of pragmatic behaviour which are 'the speaker's assumptions about his relations with his addressee, his real-world situation as he speaks and the extent to which he wishes to change either or both or to reinforce them.' (1973:296). It seems, then, that the whole

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'industry' of politeness manners is substantiated by the concerns and needs of the addressee which are always taken into consideration by the speaker!

Moving to Brown & Levinson's (B&L hereafter) theory of 'politeness', the whole scene has not changed dramatically. With a focus on 'reconstructing speaker's communicative intentions' (B&L 1987:8), they have tried to account for 'the nature of communication as a special kind of intention designed to be recognized by the recipient' (1987:7). In that way, they have adopted the perspective of the other as crucial for their analysis. Even though, from the beginning of their analysis, they draw their attention to the 'face' of the interactants and its mutual vulnerability in the context of Face Threatening Acts (FTAs hereafter), they maintain that 'any rational agent will seek to avoid these face threatening acts, or will employ certain strategies to minimize the threat. In other words, he will take into consideration the relative weightings of at least three 'wants':

    a) The want to communicate the content of the FTA x

    b) The want to be efficient or urgent

    c) The want to maintain **H's face to any degree**.

Unless (b) is greater than (c), S will want to minimize the threat of his FTA (1987:68, my emphasis).

Judging from the above, we have no further reservation to assume that their focus is on the hearer, that is, on his needs as the prevalent constraint of the interaction. Yet, they include a brief outline of those FTAs that are directed and threaten not only the hearer's face but also that of the speaker's, without describing or providing further strategies in order to minimize the threat towards the speaker. Consequently, what we figure out is that the hearer has needs regarding the protection of his negative/positive face while the speaker is introduced with the intension of fulfilling 'H's face wants to some degree, as a rational means to secure H's cooperation, either in respect of face maintenance or some joint activity or both […] so we have then a derivative want of S's to minimize the FTA' (1987: 90).

Following the trend of 'intentionality' in interaction we come to Geoffrey Leech and his belief that 'politeness does not serve here as a premise in making inferences about S's communicative intention'. Thus, the Politeness Principle (PP) does not seem to help in understanding S's intention although, obviously, it plays a role in S's choosing the appropriate expression of his communicative intention […]. Thus, the PP may help to understand reasons S had for choosing the particular content and form of what he said, but usually does not help to infer S's intentions' (Leech 1983:38-39). Leech is interested in the distinction between illocutionary goals and social goals (1983:17) and on that basis he formulates his theory based on an analysis that includes Maxims and Scales with one major concern: to define politeness as different types of behaviour which aim at realising the maximum benefit for the speaker/hearer and at the same time reserving the minimum cost for both of them (Leech 1983:104). Despite his insightful and promising intention, he is a researcher who also decided to '[…] concentrate more on the heuristic strategies of interpretation, looking at politeness from the addressee's rather than from the speaker's end' (Leech 1983:104).

My review of the notion of 'politeness' will incorporate two more researchers, Eelen and Watts. Eelen argues for an alternative conceptualization of 'politeness' with the characteristics of variability, evaluativity, argumentativity and discursiveness. This view of politeness 'takes full account of the hearer's position and the evaluative moment; is able to capture both politeness and impoliteness; provides a more dynamic, bi-directional view of the social individual relationship; and thus acknowledges the individual (in terms of both variability and creativity) as well as evolution and change as intrinsic to the nature of politeness' (Eelen 2001:240, 247). His long-term goal is to reveal the nature of politeness out of the stereotypical binary categories of speaker-hearer; however he still makes a critical comment on the absence of the appropriate acknowledgement of the hearer. He assumes that, even though the hearer is treated as an outstanding member of the interaction in the literature,

s/he is also a participant who is static and predictable in reaction in the interaction. Thus, not only does Eelen point out the obvious fact that previous theories focus on the hearer, but he also stresses that the notion of the 'hearer' needs different treatment. However there is still no reference to the concern of the speaker's needs.

Last but not least, Watts identifies politeness as linguistic behavior which is perceived to be beyond what is expectable (Watts 1989:19). Politeness is viewed as 'explicitly marked, conventionally interpretable subset of 'politic behavior' responsible for the smooth functioning of socio-communicative interaction and the consequent production of well-formed discourse within open social groups characterized by elaborated speech codes' (1989:136). Watts, like Eelen, tries to offer 'ways of recognizing when a linguistic utterance might be open to interpretation by interlocutors as "(im)polite"'(Watts 2003:143). As we can see, this is another case of the other-oriented approaches in the literature. Watts himself confirms the above observation when he distinguishes two forms of marked behaviour 'one leading to communicative breakdowns and the other to an enhancement of ego's standing with **respect to alter,** […]. The first type of behavior is "non-politic", the second, I contend, "polite"' (Watts 1992:51, my emphasis).

3 STUDIES ON SELF-POLITENESS

Walking away from the literature that, as we have already seen, is to a high degree other-oriented, we move on to theories of politeness that concern the speaker's point of view. The speaker's face is recognised by two researchers, who propose an explicit consideration and a different treatment of it. Both researchers acknowledge this deficiency in literature and propose a broader model, either extending B&L's theory or using Relevance theory.

Rong Chen (2001) proposes a model of self-politeness within the framework of B&L's theory. He believes that speakers of a language have face needs. However, they also need to perform various speech acts in social life, some of which, if done without redress, will threaten their own face, called S(elf)-F(ace) T(hreatening) A(ct)'s. As a result, speakers adopt various strategies to mitigate the force of threat of these SFTA's (Chen 2001:95). For this purpose, his model includes a set of superstrategies (four for the record)[1] based on the categorization of B&L. All the strategies are directed both to the negative and positive face of the speaker. Apart from these strategies, he proposes two factors that influence strategy selection:
1. The degree to which self-face is threatened by other, which depends on
  A: The confrontationality of the communicative event
  B: The gravity of threat of the FTA by other, which is the sum of
    a: The severity of the FTA
    b: The directness of the FTA;
 2. The degree to which self-face is threatened by the SFFA, which depends on
  A: The severity of the SFTA
  B: The consequence of the SFTA
(Chen 2001:98)

The purpose of Chen's study is to bridge the gap of B&L's theory of politeness so as to be considered more completed. This binary categorization proposed (politeness to others and politeness to self) is intended to be more of an instrument of analysis than a dogmatic image of reality. It is important to note, though, that even as an extension of B&L's theory, a very effective step has been made for the outline of a theory of 'politeness' due to emphasis on the face of the speaker. On the other hand, there is always skepticism concerning the

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[1] 1. Baldly/ 2. With redress/ 3. Off record/ 4. Withhold the SFTA

bottom theory; namely that, even if the theory is extended with the perspective of the speaker, it is still characterized by a static view based on linguistic structures which have their own sources in social norms and social rules. The only flexible and dynamic part is that of the choice of the strategy and of the evaluation of the participants. However there is a very restricted and fixed set of strategies and evaluations.

Sukriye Ruhi also pays attention to the face of the speaker. She works within the framework of the Rapport Management model introduced by Spencer-Oatey (2000) and she conceives of 'self-politeness' as 'the speaker's concerns over his/her face values and social rights'. Ruhi maintains that 'self-presentation is an important dimension of self-politeness in that it gives substance both to the notion of how face is managed in communication and to the eventual face value of the speaker through attributions or interpretations that addressees assign to the self-presentation and communicative intentions' (Ruhi 2004:7). Within this framework of Rapport Management and the analysis of Goffman's notion of demeanour, she claims that since the speaker may not only attend to the protection of face needs and sociality rights of others, maintenance of alter's face and/or harmonious relations with alter may not be in the interest of the speaker. To this effect, she proposes 'three super-strategies to supplement concern for other's face and sociality rights: "display confidence," "display individuality," and "display (im)politeness"' (2004:8). By doing that, according to her view, we can find a way to balance both the maxim and the face-management approaches. In order to explore this approach to self politeness, she examines compliment responses[2] because they are considered an act that displays genuine or routine concern of others.

4 SPEAKER'S FACE IN COMPLIMENTS AND COMPLIMENT RESPONSES

On the basis of the above observations, I have chosen to examine compliments and more specifically compliment responses (CR hereafter). According to B&L, compliments have an ambiguous interpretation: they are considered a positive politeness strategy (1987:103) and at the same time a face threatening act against the hearer's face (1987:66). Consequently, in B&L's framework, a speech act (compliments) is used as a way to be polite (politeness strategy) and at the same time as an act which can reverse their hearer-based framework.

I will draw upon Sifianou's (2001:410-412) categorization of routine and non-routine compliments based on the criteria of syntax and semantics in order to locate the adjacency pair of compliment and compliment response. On the one hand, we have routine compliments which follow the usual topics of compliments (appearance, ability, e.t.c.) and semantic and syntactic structure (adjectives, verbs with positive semantic value), while the non-routine compliments are more creative exchanges and perhaps covert expressions of admiration. Drawing on the above categorization, I focus on compliment responses but for different reasons than those of Ruhi & Chen. Firstly, CR exhibit variability as regards the speech act selected, therefore a response may be a positive or a negative politeness strategy depending on the speech act selected. Secondly, despite their variability they share a common feature: the need to balance two different and non-mutually satisfied constraints (Pomerantz 1978:8-12): 1. the agreement with the complimenter and 2. the avoidance of self-praise.

My hypothesis is that, despite the fact that both constraints are thought to protect the complimenter's (hearer's hereafter) face (Pomerantz 1978), they can threaten his/her face, and eventually enhance the complimentee's face (speaker's hereafter). This can be more easily understood if we look at the constraints more carefully. The agreement with the complimenter

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[2] Ruhi (2006:74), in reverse with Chen's previous study (1993) about compliment responses, believes that Leech's model '[…] is deficient in describing self-presentational concerns and that the face construct needs to be incorporated into the model'.

entails self-praise, since if you do not avoid self-praise you engage in an act of self-praise; moreover, when the speaker accepts the praise of himself s/he makes the P, R, D values explicit by displaying his/her higher position. Thus, s/he threatens the hearer's face. The avoidance of self-praise, that is the 2nd constraint, results in compliment rejection, threatening the hearer's face again. For the above reasons, CR seem to enhance the complimentee's face as long as in the case of 'self-praise' (which is the consequence of the 1st constraint) the complimentee enhances his/her negative face by posing himself/herself in a higher position than the complimenter, while in the case of the rejection of a compliment (which is the consequence of the 2nd constraint) the complimentee acts freely (freedom of imposition).

5 DATA PROCESSING

My data consist of twenty-six natural informal conversations among friends and relatives. I have chosen natural occurring interaction in agreement with Golato (2002), who maintains that only the study of that kind of data actually reveals what is happening in interaction. In fact, the context of friendly conversations has been selected for three main reasons: a) it is an interaction in a non-institutional context, b) there are no hierarchical relationships between the participants and c) there is symmetry in roles and age among interactants.

I have isolated thirty cases of CR, twenty-seven of which involve agreement/acceptance with the compliment. Cases of this kind are exemplified below.

(1)
   →O: =Και πολλή καλή ιδέα, (.) τη   βρίσκω.
        =And very   good idea, (.) the-FEM-ACCUS found
        'And I find it a very good idea.'
  →T: Καλο[τάτη.] Πήγαμε στην Τομπουρλίκα λοιπόν, ήταν πολύ νωρίς
       Very [best.] (We)went to   Tompourlika   so   was very early
       'The best. So we went to Tompourlika, it was very early.'
    O: [Ναι.]
          [Yes.]
          'Yes'
    T: ήταν εννιά η   ώρα ακόμα/ ήταν εννιάμιση;
      Was nine the-FEM hour   yet/ was nine thirty?
      'It was nine o'clock yet/ was it nine thirty?
    A: °Ναι.
      °Yes.
      'Yes.'

In general, the cases of agreement/acceptance follow the common types that have been described in the literature on compliment responses[3]. What we can observe is that the dominant tendency in the particular Greek sample is to agree with the complimenter. However, the speaker makes no effort to avoid self-praise; on the contrary, there have been cases where the speaker not only accepts the compliment but also upgrades its positive semantic value (see example 1).

As far as the remaining 3 cases are concerned, they involve rejection/disagreement. An example of this kind is the following:

(2)
   → N: =Γιατί   μου   φαίνονται πο↑<u>λύ</u>:: γερά τα   μαλλιά σου

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[3] Herbert (1989), Holmes (1986), Chen (1993), Ye (1995)

=because me-GEN seem   ve↑ry:: strong the–PLUR-NEUT hair   yours
γι' αυτό   σε   ρωτάω.=
for this-SING-NEUT   you-ACCUS ask.=
'Because it seems to me that your hair is very strong, that's why I'm asking you'
→E:=↑Δεν είναι   καθό:λου.=
=↑Not (they) are not at a::ll.=
'They are not at all'

The second constraint (avoidance of self-praise → rejection of the compliment) seems to be the dispreferred choice for the specific data.

Bearing in mind that in B&L's theory, the acceptance of a compliment should be accompanied with downgrading in order to protect the hearer's face (which at the same time damages the speaker's face) we would expect compliment responses to follow the above limitation. However, we find the acceptance of a compliment without downgrading or even worse, with upgrading, a case that explicitly enhances the speaker's face and threatens the hearer's. In other words, in my data the speaker seems to prefer to protect his/her face than that of the hearer's (damaging at the same time the face of the hearer).

6 PRELIMINARY REMARKS ON GENDER

In the thirty cases of compliments and their responses, nineteen cases (66.6%) are addressed to and responded to by women and the remaining eleven cases (33.3%) by men. Sixteen out of the nineteen cases which involve women are cases of acceptance/agreement and the remaining three are cases of rejection (actually, these are the only cases of rejection in my data).

In general, female compliment responses follow the common types of responses in the case of acceptance: laughter, agreement markers, accept with downgrading, back channel response. A great number of cases consist of compliments that are addressed to men, even though my data do not include only non-mixed conversations. In fact, in their vast majority they are conversations exclusively among women.

The eleven cases which involve male responses are cases of acceptance. However, there is no effort to downgrade the praise. Besides the common types of acceptance/agreement, there is a tendency to further upgrade the self-praise. This can happen in two ways: i. either the male–complimentee elaborates on the praised feature or ii. he enhances the positive semantic value of the adjective by a. the use of the respective superlative b. the replacement of it with another adjective of equal or greater value.

Lack of homogeneity in my data does not allow further comparison between female and male responses. Therefore, we cannot make more general remarks. Qualitative analysis is needed in order to figure out how men and women actually behave in interaction, in what way they protect their face in different communicative situations and how they construct and co-construct their gendered selves.

7 CONCLUSIONS

The preference of acceptance/agreement with the compliment that has been noted in the case of my Greek data is certainly related to cultural differentiation. The notion of the agreement/ acceptance or that of the rejection/disagreement, even if we accept that they have their cultural counterparts, still reveal, as we have already seen, the commitment of the speaker to an act of self-praise. Taking into consideration this tension in the speaker's preferences, we

cannot overlook the speaker's face and underestimate his/her needs in a theory of 'politeness', since s/he is one of the main protagonists in interaction. Perhaps we should reconsider the notion of FTAs, as threatening acts primarily against the speaker's face and secondarily the hearer's. In other words, the threat is directed firstly to the face of the speaker and damages his/her image, if s/he does not employ the appropriate strategy in order to protect others and ensure smooth interaction.

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On an Isomorphism of Finite
Binary Rooted Trees with Setgraphs[*]

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ὕμνων πτυχὴ θεία τύχη

1. Introduction

Rather than say several complicated things vaguely, I have opted to say one simple thing precisely. The thesis of this essay is that finite binary rooted trees are equivalent to graphs satisfying $V \cap E \neq \emptyset$. The conception of a tree can be construed slighty differently from various perspectives; here I am concerned with graph-theoretic trees. Also, infinite trees are set aside for the moment.

2. Definition of rooted tree

A *graph*, written $G(V, E)$, is a set V of vertices along with a set E of edges. Edges are combinations of vertices. Conditions on the formation of E result in types of graphs (multigraphs, hypergraphs, and so forth); here only pairwise combinations are considered, though the result generalizes.

A graph is *connected* when there is a path from any vertex to any other vertex, and *acyclic* when there is no path from some vertex back to itself. A *tree* is a connected acyclic graph. A *rooted tree* T is a partially ordered set $(G, \leq)$ which has a vertex called the *root*. Our trees have only one root, though the result generalizes to multiple roots. A vertex b is a *daughter* of another vertex a (called the *mother*) when $b < a$ and there is no c such that $b < c < a$. A rooted tree is *binary* when each vertex has at most two daughters.

It is standard to define the *height* of a vertex a as the order type of $\{b \in T : b < a\}$; thus the root has height 0 and grounds the order. We will here consider a different order: privileging the leaves rather than the root, define the *depth* of any vertex a, written $\mathrm{dp}(a)$, to be the order type of $\{b \in T : a < b\}$, or equivalently: $\max(\mathrm{dp}(b_i)) + 1$, where b_i ranges over daughters of a. Thus leaves have depth 0. The height of T itself is the least ordinal greater than the height of each element of T, and the depth of T itself is defined similarly. The height and depth of T itself are always equal. For each ordinal α, the α-th *depth level*, written T_α, is is the set of elements of depth α.

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3. Definition of setgraph

A *setgraph* is a graph $G(V, E, \bowtie)$, where $\bowtie$ denotes the condition $V \cap E \neq \emptyset$. Because the usual strict division between vertices and edges is not maintained in setgraphs, we talk only of elements x of a setgraph X, which can also be written $(G, \bowtie)$. As above, we consider only binary setgraphs.

Define the *depth* of an element $x = (yz)$ as before: $\mathrm{dp}(x) = \max(\mathrm{dp}(y), \mathrm{dp}(z)) + 1$, and write an element x of depth α as x_α. Where $x \in V$, $\mathrm{dp}(x) = 0$. If r (for root) is the deepest element of X, then the depth of X itself is the least ordinal greater than $\rho = \mathrm{dp}(r)$. The set of all elements of depth α is called the α-th *depth level* of the setgraph, written X_α.

A setgraph is built iteratively from the *foundation set* $X_0 = V(G, \bowtie)$. Then $X_1 = E \subseteq V^{(2)}$. Elements $x_1 \in X_1$ are pairwise combinations and can expressed parenthetically: $x_1 = (y_0 z_0)$, or equivalently: $(y_0 z_0)_{x_1}$. Then $X_2 \subseteq X_1 \times X_0 \cup X_1 \times X_1$, with two possibilities for elements x_2, either $(y_1 z_0) = ((p_0 q_0) z_0)$ or $(y_1 z_1) = ((p_0 q_0)(m_0 n_0))$. The process is iterative, and creates a partial ordering reminiscent of the natural order (by inclusion) on the set-theoretical universe. In general:

$$X_{\alpha+1} \subseteq \bigcup_{i=0}^{\alpha} X_\alpha \times X_i$$

and

$$X = \bigcup_{\alpha=0}^{\rho} X_\alpha$$

4. Demonstration of thesis

To convey the flavour, briefly suspend binarity. Consider n daughters of the same vertex a, such that $ab, ac, ..., an \in E(T)$. A hypergraph of n vertices collected into an edge a is usually drawn as n points enclosed by a circle, but this can also be drawn as n points each incident with a line projecting upwards to a single point a. In either case this hyperedge may be written $(bc...n)_a$. Now, recall binarity: when $n = 2$, write $(bc)_a$. Note the resemblance with the notation for setgraph elements above, and the implication that the mother of two daughters in a rooted tree can be interpreted as the edge connecting two vertices with the daughters' names. We can imagine *plying* the edge upwards to look like the mother of the vertices it connects. If that 'mother' vertex is itself a 'daughter', then edges themselves are elements of combination, and $V \cap E \neq \emptyset$.

It should be clear from the above informal consideration that there is a structure-preserving bijection between $(G, \leq)$ and $(G, \bowtie)$. To show this, define $a = b + c$ iff when, given a rooted tree with ab, $ac \in E(T)$, b and c are the daughters of a. In X, define $x = y +' z$ iff $x = (yz)$. Otherwise $+$ and $+'$ are undefined. Now we have two binary algebraic structures. Define the function

$f : T \to X$ as follows: for all $a \in V(T)$ such that $\mathrm{dp}(a) = 0$, $f(a) = a \in X_0$. Thus $\bigcup a = X_0 = T_0 \subseteq V(T)$. If $a = b+c$, and $\mathrm{dp}(a) = 1$, then $f(a) = bc$. When $\mathrm{dp}(a) = \alpha + 1$, we have $f(a) = x_{\alpha+1} = (y_\alpha z_i) = (f(b)f(c))$, with $0 \le i \le \alpha$, and $x_{\alpha+1}, y_\alpha, z_i \in X$. We now show that f is a structure-preserving isomorphism.

1. *f is an injection.* Suppose that $a = b+c$ and $f(b) = f(c)$. By the definition of f, $\mathrm{dp}(b) = \mathrm{dp}(c)$. Proceed by induction on depth level. When $\mathrm{dp}(b) = \mathrm{dp}(c) = 0$, $b = f(b) = f(c) = c$. Assume that $f(b) = f(c)$ implies that $b = c$, for $\mathrm{dp}(b) = \mathrm{dp}(c) = \alpha$. Consider $a, d \in T_{\alpha+1}$ such that $f(a) = f(d)$. It follows that $a = b + c$ and $d = e + g$ for some $b, e \in T_\alpha$ and $c \in T_i$, $g \in T_j$ with $0 \le i, j \le \alpha$. Thus $f(a) = (f(b)f(c)) = (f(e)f(g)) = f(d)$, i.e. $f(b) = f(e)$ and $f(c) = f(g)$. It follows that $b = e$ and $c = g$, so $a = d$.

2. *f is a surjection.* Consider any $x \in X$. There are two alternatives, either $x \in X_0$, or not. Say x in X_0; then $f(x) = x$ so there clearly exists an $a \in V(T)$ such that $f(a) = x_0$ (i.e. $a = x$). If $x_{n+1} = (yz)$, break x down into two cases: y_n and z_i. If $\mathrm{dp}(z_i) = 0$, break down y_{n-1} into its two cases. If $\mathrm{dp}(z_i) \ne 0$, break down both y and z, and continue in this fashion until all terms have depth 0. This process creates a tree with root a, so in either case there is an $a \in T_\alpha$ such that $f(a) = x_\alpha \in X_\alpha$.

That $f(b + c) = f(b) +' f(c)$ follows now by definition. Thus f is an isomorphism preserving depth structure. So $\mathrm{dp}(a) = \mathrm{dp}(x)$ for all $a \in T$ and $x \in X$ such that $f(a) = x$. Thus, from the point of view of depth structure, $T = X$. $\square$

5. Discussion

This essay has shown that finite binary rooted trees are equivalent to graphs which satisfy $V \cap E \ne \emptyset$. The main idea is to find the condition in which giving an edge the name of a vertex lends insight. Issues regarding loops, multiple edges, hyperedges etc. are readily resolvable. When $T_0 = X_0 = \emptyset$, then $f(T)$ gives pure parenthesis structure — thus the name setgraph.

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The perspective of external remerge on Right Node Raising[*]

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Right Node Raising constructions display a couple of properties that are difficult to derive in a purely syntactic account. In this paper I will put Right Node Raising in the perspective of both LF and PF conditions and propose a syntactic account that is constrained by these interfaces. For this purpose, I will explore the possibilities of external remerge in the domain of coordination.

1 INTRODUCTION

Right Node Raising (henceforth RNR) is a form of conjunction reduction that applies in a backward manner. The most important properties of RNR are illustrated in (1) below, where I indicate the right nodes (RN) with italics:

(1) (a) [Pete sells$_F$_] and [Mary buys$_F$_] *old books on the market today*
(b) [*Pete sells_ today$_F$] and [Bill bought_ yesterday$_F$] *old books*
(c) [Pete sells today$_F$_] and [Bill bought yesterday$_F$_] *old books about fairytales*
(d) [*?Pete won't sell$_F$_] but [Mary will buy$_F$_] *some books today*
(e) [*Pete sells today$_F$_] and [Bill put outside$_F$_] *old books about fairytales*

The examples (1a-e) show that RNR can apply to non-constituents (1a), and that it is sensitive to some condition on the right periphery of the respective conjuncts (1b-c). Furthermore, there seems to be a requirement on *matching* between what is left out in the first and spelled out in the second conjunct (1d). Here, negation licenses a NPI (*any*) in the first conjunct, but not in the second. Finally, the conjuncts need to express contrastive focus in order for RNR to be licensed (1e). An important property that holds for RNR in general, is the prosodic structure. In order for RNR to be acceptable, the contrasted elements in the respective conjuncts must be stressed (marked with '$_F$'). The latter is only felicitous if the stressed elements can be contrasted.

In this paper I will discuss RNR with a special focus on the derivation of the periphery condition, matching requirements and linearization. The aim is to see which aspects of RNR belong to the domain of syntax, and which aspects belong to other parts of grammar. It will be argued that any theory for RNR has to take into account syntactic, semantic and prosodic constraints. I will present an analysis in which RNR, at the level of syntax, involves external remerge of internal elements. The grammaticality of RNR constructions that are derived by applying external remerge then depends largely on the constraints at the semantic and phonological interfaces.

2 THEORETICAL BACKGROUND

The syntactic accounts of RNR can be roughly divided into the ones that assume rightward movement of the RN out of the conjunction (*ex-situ*), and those assuming the RN to be *in-situ*. Approaches of the former kind can be found in Ross (1967) and Sabbagh (to appear). In this analysis, RNR is derived similarly to leftward ATB-movement. To account for the Periphery Condition, Sabbagh formulates a constraint prohibiting rightward movement to cross any overt material that is contained in the same cyclic node. It is questionable whether syntax can actually differentiate between overt and covert material in the derivation – one would probably have to assume some PF filter for this. My main argument against a movement analysis of RNR is that *leftward* ATB does not apply to non-constituents, while RNR can apply to non-constituents (1a). Furthermore, violations of islands result in ungrammaticality for ATB, which is not the case in examples of RNR.[1] This means that movement to the right is subject to very different constraints and restrictions than movement to the left.

The arguments against a movement analysis for RNR led to proposals involving multiple dominance of the RN (cf. McCawley 1987, Van Riemsdijk 1998, Wilder 1999, De Vries 2005b, Bachrach & Katzir 2006). Multiple Dominance (MD) of a given α means that α can be shared between two strings. Under this assumption we are forced to discard the single motherhood condition. For reasons of space, I will only briefly address the approach of Wilder here. I refer the reader to the references for other MD approaches for RNR. Wilder (1999) adopts the LCA (Kayne 1994) and proposes a notion of full dominance. Supposing A and B both dominate α, the images of A and B do not contain α; under Wilder's definition of full dominance α is not fully dominated if shared. The periphery condition is said to follow from the symmetry violation that arises whenever there is an x such that x < α and α < x. However, since precedence relations in the LCA are defined in terms of c-command, it is thinkable that there are cases in which α is deeply embedded in the conjuncts and followed by material that it does not c-command. These cases would violate the periphery condition but their ungrammaticality does not follow from Wilder (1999).[2]

Hartmann (2000) considers RNR to be deletion at PF. This means that for syntax, there are two occurrences of α. The first α is deleted when the whole structure is spelled out. This type of deletion is licensed by the prosodic structure of the conjuncts, which is parallel and contains focus that needs to be aligned to the edge of the prosodic constituent (right or left depending on the language). In order for deletion at PF, α needs to be redundant (i.e. duplicate). This implies the same matching requirement found in MD accounts, which will be revisited in section 3.2.

In sum, it seems that the current *in-situ* accounts focus either on syntax and leave prosodic and semantic constraints out, or on PF without enabling syntax to provide clues for the correct Spellout of RNR. Before I propose an approach that combines the different levels, I will explore three issues of RNR in some more detail in section 3.

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[1] For ATB versus RNR with respect to islands, consider (i) and (ii):
(i)   (a) Who$_i$ does Mary like e$_i$ and Jane adore e$_i$?
         (b) *What$_i$ does Jane ask who hates e$_i$ and Mary ask who loves e$_i$?
(ii)   (a) Mary likes and Jane adores Bill
         (b) Jane asks who hates and Mary asks who loves *cats*
Leftward ATB of *what* in (ib) violates a *wh*-island, while the supposed rightward movement of *cats* in (iib) is grammatical.
[2] This point was actually made by Sabbagh (to appear), who states that Wilder (1999) does not predict ungrammaticality for (iii):
(iii)   *[Joss edited [one review_] for Blackwell], and [Maria edited [two reviews *of my new book*] for Oxford]

3 PERIPHERY, MATCHING AND LINEARIZATION

3.1. Periphery condition: prosodic and contrastive focus

As pointed out in the previous section, the periphery condition is hard to derive as a syntactic condition. This is mainly due to the fact that this seems to be a unique characteristic of RNR. Let me first cite a theory-neutral description of the periphery condition of Sabbagh (to appear):

(2)   *Right Edge Restriction/Periphery Condition*
       In the configuration $[[_A…X…] \& [_B… X…]]$,
       X must be rightmost within A and B before either (i) X can be deleted from A; (ii) X can be rightward ATB-moved; or (iii) X can be multiply dominated by A and B.

Basically, we could formulate a syntactic constraint that captures this, but not without stipulation. That is, this condition seems unique for RNR, it does not occur in forward conjunction reduction (gapping, VP ellipsis), nor in ATB movements, as pointed out in section 2. This suggests that the Periphery Condition is not part of the syntactic component. Turning back to Hartmann (2000), it is a phonological observation that focus aligns to the *edge* of the prosodic constituent (this need not be a syntactic constituent or phrase). It follows naturally that when deletion at PF occurs post-focally, the RN is always associated with the edgemost position.[3] The examples in (3) show how this condition works:

(3)   (a) *[Mary lost_ yesterday$_F$] and [Jane found_ today$_F$] *a ring*
       (b) [Mary lost yesterday$_F$_] and [Jane found today$_F$_] *a very expensive necklace*
       (c) *?[Mary lost today$_{?F}$_] and [Jane took upstairs$_{?F}$_] *a very expensive necklace*

Note that (3b) may appear like a grammatical violation of the periphery condition. The RN in this case, is a *heavy* NP that can shift to the end of the clause it is contained in (HNPS is constrained by the Right Roof Constraint, see Ross 1967). Seeing that HNPS depends on the *prosodic* weight of the NP, we can assume that this is a condition at PF, not in syntax.

Based on the arguments in the above, ungrammaticality of (3c) is, however, *not* predicted. HNPS allows the RN to shift past the adjuncts *today* and *upstairs* in the respective conjuncts, and the conjuncts are organized in a parallel fashion. However, the stressed elements in the conjuncts of (3c) cannot express contrastive focus. Rooth (1992) proposes an account for focus within his framework of alternative semantics. Focus on an element X creates a set of alternatives for X.[4] The basic idea (adopted also in Hartmann 2000) is then that for contrastive focus in RNR, the set of alternatives for the focused elements must be identical. There is no possible world in which *today* and *upstairs* create the same set of alternatives, which is why (3c) crashes. The prosodic constraints on RNR make the elements in contrastive relation prominent in the pronunciation, which leads to deletion in the first conjunct and a 'flat' intonation of the RN in the second conjunct (cf. Hartmann 2000). I conclude from the contrast between (3b) and (3c) that focus in RNR constructions explains

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[3] In this paper I only address English and Dutch examples of RNR, Hartmann (2000) concerns mainly German data. These (Germanic) languages all align focus to the right edge of the prosodic constituent. Although outside the scope of the present paper, it will be interesting to see if RNR exists in languages that align focus to the left edge.

[4] For example, consider (iv):
(iv)   (a) Jane$_F$ went home after the session on Minimalism
        (b) Jane went home$_F$ after the session on Minimalism
The interpretation that is associated with (iva) is that Jane was the one that went home after the session on Minimalism and not someone else. In (ivb) however, where *home* is focused, Jane is going home and nowhere else. The focused element is then the interpreted member of a set of alternatives (Rooth 1992).

the periphery but is constrained itself by semantics: prosodically stressed elements that cannot express contrast in RNR are ungrammatical.

3.2. The matching requirement

The MD and the PF-deletion accounts of RNR both require strict morphophonological matching of the RN. This has been argued against in the work of Ha (2006a) who claims RNR to be ellipsis. Examples are for instance *some/any*-alternation that would indicate an elliptical nature of RNR:

(4)   (a) Steve has seen$_{<some>}$ but he has not bought any of the latest Harry Potter
          books.
       (b) Steve has not bought$_{<any>}$ but he has seen some of the latest Harry Potter
          books.

Interestingly, (4) was rejected by British speakers. The reported reason for this is that when pronouncing (4), in the second conjunct, speakers need to assign stress to both *bought* and the NPI *any*. This causes the example to be rejected, and strengthens the idea that RNR cannot exist without the typical prosodic structure that is associated with it.

Another type of example would be to test different inflections on the verb in RNR constructions. For this purpose, consider the following Dutch examples:

(5)   (a) Peter zei dat Marie naar huis$_{F\_}$ en   jij   naar school$_{F\_}$ *gaat*
Peter said that Mary to   house and you-2-SG to   school go-2/3-SG
          '*Peter said that Mary is going home and that you are going to school*'

       (b) *Peter zei   dat jij een boek$_{F\_}$ en   Marie een CD$_{F\_}$ gekocht hebt
          Peter said that you a   book   and Marie a   CD   bought has-2-SG

       (c) ?Peter zei dat jij een boek$_{F\_}$ en Marie een CD $_{F\_}$ gekocht heeft
          Peter said that you a book   and Marie a   CD   bought has-3-sg
          '*Peter said that you bought a book and Mary a CD*'

In (5a) the inflection of *gaan* ('to go') is identical for both second and third person singular. This is not the case of inflections of the verb *hebben* ('to have') in (5b-c). In (5b), the realized RN matches the inflection requirements for second person singular, in (5c) for third person singular. However, (5c) is much better than (5b). This leads me to the assumption that as far as matching is concerned, RNR is acceptable as long as the RN matches the requirements of the conjunct it is realized in (the second conjunct). A solution for this is to assume Distributive Morphology (Halle & Marantz 1993). In this view, syntax concerns only the features of the lexical items which they represent in the structure. The phonological features are inserted only after the syntactic derivation is done. I will return to the advantages of this in 4.2.

3.3. Linearizing RNR constructions

What remains to be answered now is the role of *syntax* in RNR constructions. If the periphery can be explained from prosodic constraints, why not assume along with Hartmann (2000) that RNR is deletion at PF? The problem is that as long as RNR has no special syntax (i.e. just a coordination where a RN α is present in both conjuncts), there is no independent reason to not spell out the first instance of α. In other words, we need a clue for the backwards directionality of the reduction in RNR for Spellout.

Another reason is that the prosodic rules for focus alignment as proposed in Hartmann (2000) work for the simple cases of RNR, but not for those cases of RNR that are embedded, like in (6):

(6)   The fact that John hates$_{F\_}$ and Mary likes $_{F\_}$ *to eat raw vegetables* makes them incompatible.

Here, RNR is part of a complex subject of *make*. It is unclear from the prosodic rules in Hartmann (2000) whether the Spellout mechanism is able to continue the normal intonation pattern of the sentence without assigning the predicate *makes them incompatible* the same flat intonation that is part of the post-focal RN to *eat raw vegetables*. My idea is that what is needed for linearization of RNR is provided by the syntactic derivation which involves external remerge of the RN.

4 RIGHT NODE RAISING AS EXTERNAL REMERGE OF THE RN

4.1. External remerge as operation between derivations

Within the Minimalist approach to syntax, elements in a syntactic derivation are combined by the operation Merge. Merge applies to two syntactic objects {A,B} and puts them together. Suppose C is the result of the merger of A and B. C can then be merged with D into E, and so forth. A and B can be simplex, but as pointed out in Van Riemsdijk (2004, 2006), nothing in the theory forbids Merge to apply to objects that have been merged earlier in the derivation. For instance, recent proposals suggest that what has been called Move, is in fact the remerge of an internal element in the same derivation, such as *wh*-displacement (cf. Zhang 2004, De Vries 2005c). External remerge is then the merger of an internal object with an object in another derivation. The line of reasoning of Van Riemsdijk (2004, 2006) is that if we want to consider Move as internal remerge, excluding *external* remerge would be a stipulation. Basically, all we need to do is to show that natural language involves the kind of displacement that is predicted by external remerge.[5] According to Van Riemsdijk, this would be the kind of displacement we see for instance in RNR.
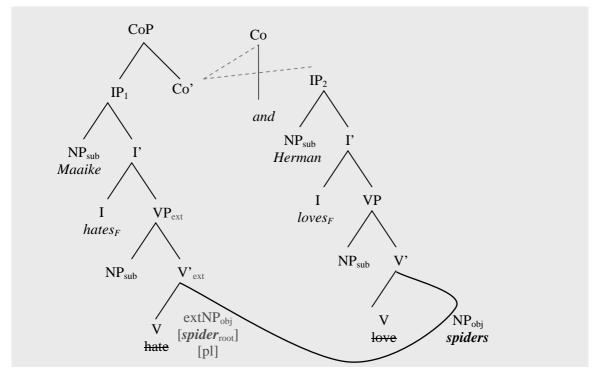
So, what would we predict for RNR if we assume the RN is externally remerged? For starters, a proposal like this will necessarily involve multiple dominance and shared elements (see section 2). This raises the question of which of the two conjuncts the RN is initially merged in, and in addition, how the structure as a whole is linearized. The account of Van Riemsdijk (2004, 2006) furthermore suggests strict (morphophonological) matching of reduced and spelled out RN. For instance, if the RN were assigned overt case in the first conjunct that is different from the case marking that is realized in the second, the structure is out. The following sections focus on the possibilities of 'softening' this condition based on the difference in acceptability between (5b) and (5c), the syntactic derivation of RNR and the constraints at the interfaces.

4.2. RNR as external remerge between coordinated strings

If the RN is externally remerged in the syntactic derivation of RNR, this simply means that the derivation of the one conjunct uses material that is already part of the other. The question is then, which is the initial merger of the RN. I assume here that syntactic structures are derived in a bottom-up fashion, and that Spellout applies top-down from left to right. Consider the simple example of RNR in (7), with the representation below:

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[5] Van Riemsdijk (2004, 2006) calls this type of Merge 'grafting', I will use the less metaphorical 'external remerge'.

(7)   Maaike hates$_F$_ and Herman loves$_F$_ *spiders*

We start out by deriving the first conjunct: *Maaike hates spiders*. First, Merge applies to *hate* and *spiders* (V and complement), the result of merge is V'. V' is merged with the external argument *Maaike*, the result is VP. When this derivation reaches VP (or vP, I use VP for brevity's sake here), we start deriving the second conjunct *Herman loves spiders*. *Spiders* has already been merged as part of an existing derivation, namely what we have built up for the first conjunct. Since it is also the complement of V in the second, we can assume that it can be remerged as long as the first has not reached Spellout. *Hate* and *love* are internally remerged (or moved) into I-position, where syntax also marks focus (alternatively, this happens in a separate functional projection of FocP). When both conjuncts are projected into IP, Merge applies to Co (*and* in (7)), resulting in Co'. The latter finally merges with IP1 resulting in CoP.[6]

When the derived CoP reaches Spellout, PF spells out the first conjunct until VP. I assume that whenever an element is remerged into a different position, this is made visible in the syntax. This can be a marking of some sort that indicates that what was initially merged in the first conjunct, has been merged elsewhere again. I have marked this provisionally with 'ext' in the representation. When an element is internally remerged (consider for instance *wh*-displacement), Spellout applies to the highest merge of that element. But when we allow elements to be remerged in other derivations, this will not apply; we are not remerging them into a higher position. Instead, we can assume that for external remerge, Spellout applies to the *final* merger of a given α (which in case of internal remerge would be the highest position in which α has been merged). Obviously, we will need more examples of external remerge to create a better foundation for this hypothesis. For now, let me state that external remerge is an available option in the syntactic derivation of coordinated structures:

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[6] I assume coordinators are heads that project into CoP, following De Vries (2005a) and the works cited herein. Note in addition that the merger of IP$_2$ and Co is represented with a dotted line. This is to indicate a 'behindance' relation (b-Merge) instead of a dominance relation that is implied in 'normal' Merge. Although not relevant to the present proposal, b-Merge here prevents c-command between conjuncts (see De Vries 2005a,b,c for the notion b-Merge, and Progovac 1998 for the possible lack of c-command between conjuncts).

(8)   *External remerge in coordination*
       In a structure $[_{CoP} [_{XP1} … \alpha …] \& [_{XP2} …]]$, α can be remerged in the derivation of XP_2.

Finally, if Merge applies to only the *roots* of α, it is possible that the α at the location of its first merger would have different phonological properties than at the location of the final merger. Combining external remerge with Distributed Morphology then accounts for the difference in acceptability between (5b) and (5c).

4.3. Interface constraints on RNR

So far, I have proposed a syntactic theory of RNR in terms of external remerge. It is clear that in this proposal, the syntactic component of grammar would overgenerate RNR constructions. After all, the periphery condition that rules out examples like (1b) is no part of syntax in the current proposal but will be filtered out at PF. Let me briefly suggest two interface conditions on RNR here. For the periphery condition, I propose (9), as extension of the constraint in Hartmann (2000):

(9)   *Periphery Condition*
       - In a structure $[…X_F…]_\phi$ where ϕ is the prosodic constituent, align X_F to the right/left edge of ϕ
       - In a structure $[_{CoP} [_{XP1} … X_{F1}…] \& [_{XP2} … X_{F2}…]]$,

$$\alpha$$

       where α is remerged in XP_2, α must immediately follow X_F.

As argued in section 3.1, prosodic focus is constrained by a condition on the semantics of the focused elements. The condition on contrastive focus based on Rooth (1992a,b) and Hartmann (2000) looks as follows:

(10)   *Contrast Condition*
       In a structure $[_{CoP} [_{XP1} … X_{F1}…] \& [_{XP2} … X_{F2}…]]$,

$$\alpha$$

       X_{F1} and X_{F2} must have identical sets of alternatives.

5 CONCLUSION

RNR is a construction constrained by different interfaces of grammar. The periphery condition is not part of syntax, but follows from a constraint on edge alignment of focus. This is in turn constrained by a condition on contrastive focus, which is a semantic condition on RNR. The syntax of RNR provides clues for the directionality of the conjunction reduction, i.e. the correct linearization. For this purpose, I have proposed external remerge between conjuncts, following the work of Van Riemsdijk (2004, 2006). It is clear that more work needs to be done on the notion of external remerge. First of all, more types of constructions need to be investigated. This is necessary to see whether external remerge is, for instance, dependent on coordination as in RNR, or can also take place between strings that are otherwise related. In addition, we need more judgments on *non*-matching RNR in, for instance, languages with overt case. This is needed to sustain the hypothesis that RNR is acceptable as long as the RN is grammatical in the conjunct in which it is remerged.

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English Meets German: On the creative exploitation of Anglicisms and code-mixing in press language in the context of the Fifa World Cup 2006[*]

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Traditional models focussing on (German-English) language contact assume that this process primarily leads to the importation of loanwords. Due to the role that is taken by present English in its use as the global lingua franca, the panoply of linguistic contact phenomena, however, may also include further-reaching traces of 'Englishisation'. Built on a critical evaluation of anglicism research in Germany and applying Muysken's (2000) taxonomy of code-mixing, this paper will shed light on the creative usage of anglicisms and of other forms of language mixture between German and English. Examples of the various forms of interlingual interaction are drawn from German press language in the context of the Fifa World Cup 2006.

1   INTRODUCTION

Despite the fact that current linguistic debates often touch on the question of how the forces of globalisation might shape the linguistic landscapes of the future, and although internationalisation as such is mostly associated with the enormous spread and diversification of English, traditional studies on inner-European language contact with this language, over the years, have shown a relatively stable theoretical outreach so as if the quality of interlingual interaction with English had not changed at all (Onysko 2007:5). This state of contact-linguistic research concerning the impact of English on, say, French and Italian may be explained by the long-standing tradition of language purism in these countries. There is, however, no real equivalent in terms of direct linguistic interventions on part of the German state, where issues like 'language maintenance' are preferably dealt with in NGOs like the *Verein Deutsche Sprache* (Plümer 2000:71-80). Indeed, if one takes into account the specific historical situation in Germany after 1945, the idea that German is the European language most open to linguistic influence from English (Androutsopoulos 2003:83) seems feasible. The expectation that German research on English as a contact language has described the whole radius of possible ways of interaction with English is a fallacy nonetheless: Up to now, the main focus of German research on contact with English has rested nearly exclusively on anglicisms, too.

In general, the lexicon is the linguistic module most susceptible to borrowing (Winford 2003:29-31). Yet, there may be much more to explore than anglicisms (Onysko 2007:5). Above all, scholars focussing on code-switching in non-European contexts (Myers-Scotton 1993; Romaine 1995) along with World Englishes researchers (Kachru 1986; Görlach 1998) have pointed out repeatedly that English, serving as the present European and global lingua franca, may also manifest itself in forms of interlingual contact other than lexicalised anglicisms. In fact, it could be maintained (Androutsopoulos 2003) that English in Germany these days is learnt as a second or third rather than a mere foreign language, as Kachru's (1986) World Englishes model had claimed.

Against the background of this gradual 'bilingualisation', I shall show that a broader

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framework of analysis is needed so as to include the diverse effects of what Kachru (1994) calls **'Englishisation'** – a process that is counterbalanced by simultaneous **nativisation (= integration) processes.**

    Within the scope of a case study on language use in German press language, I shall challenge the applicability of a specific code-mixing model as proposed by Pieter Muysken (2000). My argument is based on two hypotheses:

(1) I assume that there are different qualities of linguistic contact with English through which diverse discursive effects may be accomplished. Especially occurrences other than lexicalised anglicisms could allow for more creative usage by providing language users with more expressive options (Androutsopoulos 2003; Onysko 2006).

(2) I believe that the trend towards a greater linguistic entrenchment of English is especially promoted by the growing number of gradually bilingual speakers (Hamers/ Blanc 1983) and that it also reflects itself in the diction of written press language.[1]

2 PRESS LANGUAGE AS A TESTGROUND FOR MUYSKEN'S TAXONOMY OF CODE-MIXING: A CASE STUDY BASED ON JOURNALIST TEXTS IN THE CONTEXT OF THE FIFA WORLD CUP 2006

Sticking to Muysken's (2000) model, we can distinguish three types of interlingual inter-action: insertions, code alternations and congruent lexicalisations. Each of these processes will be discussed and illustrated in the following sections.

2.1 Insertions

2.1.1 Forms of insertions

2.1.1.1 Anglicisms proper

To begin with, let us address the category of **insertions.** According to Muysken (2000:3, 60-69), they usually occur as single or two-word switches. As lexical absorptions they have first of all the status of ad hoc-like lexical embeddings, but by and by they get structurally nested in and integrated into the recipient language (here: German). Due to the prestige of present English and the effect of globalisation, this integration often comes about more quickly now than some decades ago. Accordingly, repeated or habitualised insertion processes lead to linguistic appropriation, i.e. to the lexicalisation in the L1. Concordant with the growing lexical diffusion, the initial impression that a moderate form of interlinguistic mixing takes place whenever an English word is activated gets lost in the memory of many speakers. Talking of English-German contact, it can thus be stated that insertion processes may, sooner or later, lead to the implementation of borrowings in the lexicon (Muysken 2000:33), here in the sense of **anglicisms proper** (Görlach 1994). By 'anglicisms proper' I understand common material loanwords with a visible Englishness like, in the context of the football world championships 2006, the old, established loanword *Fußball* 'football', but also simple or compound lexical adoptions such as *Fan, Trainer, Teammanager, Coach, Keeper, Ticket, Dribbling* or *Fitness.*

    Each of these anglicisms has been orthographically adapted by the use of a capital letter (Plümer 2000:214). Such integration, along with phonetic and morphological adap-tations, helps to reduce the degree of linguistic foreignness, although this tendency may also be broken through owing to the high communicative values attributed to present English. However, in the case of verbs, the typical German ending <-en> may be added, as it is visible

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[1] The material for this case study has been drawn from the German news magazine *Der Spiegel,* but also from the *Financial Times Deutschland (FTD,* online edition only) as well as the *Tageszeitung* (TAZ) and the *Tagesspiegel* (online edition). The period of analysis covers the time around the world football championships 2006. This time span seems appropriate since the high media attention during the Fifa World Cup may also have resulted in the incorporation of fresh English language material.

in *fighten* 'to fight'. While the adaptation of the infinitive is a widely shared habit, the past participle of verbs imported from English may oscillate between different forms: e.g. *gefighted* vs. *gefightet* 'fought' (*Spiegel*, 03.07.2006, p. 146).

Be that as it may, these types of integration are often accompanied by **semantic shifts** in the recipient language (Plümer 2000:230-257, Yang 1990). An interesting example of such a semantic integration is the specialisation of the meaning which effected the word *Public Viewing* (e.g. *Spiegel*, 26.06.2006, p. 146). It was massively used in the context of the Fifa World Cup and is by now almost lexicalised. While the English signification, applying the definition of *Longman's Dictionary of Contemporary English*, refers to an occasion for a special look at an exhibition etc. open to the general public, the noun, in German use, designates the 'public watching of large-screen TV broadcasts, e.g. on marketplaces', here again during the Fifa World Cup 2006.

2.1.1.2 Pseudo-anglicisms – indicators of the nativisation of English?

Probably much more than anglicisms proper, it is the so-called **pseudo-anglicisms** (Yang 1990:12-14, Onysko 2007:52-55) which prove to us that the L1 users of German are by no means obliged to stick to the practiced usage in the donor language English, but that they may 'digest' linguistic material transferred from English into German freely and creatively. Although they are not mentioned by Muysken (2000), I suggest grouping pseudo-anglicisms as phenomena akin to insertions. Yet, they mainly occur as conceptual insertions, i.e. they differ from the structural patterns of lexicalised English words (Onysko 2007:52-55). Classifying them as insertions is cogent at least in cases where the pseudo-loans show high degrees of semantic integration and where they are rather concise. This usually holds true as pseudo-anglicisms may come about when parts of a lexicalised English word are clipped off.

On the whole, pseudo-anglicisms can be legitimately seen as one of the most prominent indicators of Englishisation, bearing in mind that, as Kachru (1986) explains, Englishisation itself is often ensued and counterbalanced by L1-internal **nativisation** processes. In fact, frequent words like *handy,* appearing in an article expressing its amazement in view of the relaxed and peaceful atmosphere in the German football stadiums, which was also underlined by the free exchange of mobile numbers (*Spiegel*, 19.06.2006, p. 84), are based on English material. Still, they are not lexicalised in standard English, the L1 equivalent being *mobile phone/cell phone.* Similarly, the compound noun *Profikicker (TAZ,* 20.03.2006, p. 13) consists of two German pseudo-anglicisms, which, in isolation or in other lexical combinations, were particularly frequent in the context of the football world cup 2006 as well. More specifically, the word is a compound based on the clipped form of the English noun *professional player,* i.e. *Profi,* and the pseudo-loan *Kicker* 'football player', which derives from the English verb *to kick.*[2]

2.1.1.3 German surrogates: loan translations, loan renditions and loan creations

Talking of processes of integration, one should, however, not leave out of sight either that vital recipient languages like German are also capable of finding a **native quasi-equivalents**

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[2] Indeed, pseudo-anglicisms can be regarded as creative formations of Germans. Unless we trace them back to imperfect learning, we may regard them as signs for the ability and readiness of German speakers to adapt imported linguistic material to their specific linguistic needs and habits irrespective of the usage in standard English. Note that on an international level, pseudo-loans do not necessarily hamper communication with native speakers, since possible difficulties in understanding each other may be overcome by discursive on-line solutions. The prescriptive stance according to which the transfer of English elements into German should either entirely respect the rules of the English language (however they can be fixed in view of the pluricentric standards proposed by the World Englishes model) or ought not take place at all, is thus out of place. Indeed, the English language even shows stunning variation between its British and American varieties as groups of the inner circle of the World Englishes model (Kachru 1986). To that end, rhetorically denying a language from Kachru's (1986) extended circle the right to go ways of its own as to the manner it appropriates English, comes close to the use of double standards.

for imported anglicisms proper and may use them either competitively or alternatingly with a repeatedly inserted English 'original' (Plümer 2000:266). In contrast to Muysken (2000:273-274), who only mentions literal word-by-word translations, I propose classifying similar forms of nativised equivalents of anglicisms proper as conceptual (and simultaneously structural) insertions, too.

Nativised equivalents of anglicisms may show different gradations of linguistic 'imitation' (Yang 1990:, Plümer 2000:47-89): First, borrowings may be replaced by **loan translations**, where a literal translation is realised, like in the case of substituting an (infrequently encountered) anglicism such as *penalty kick* by the German word *Strafstoß* (*TAZ*, 11.07.2006, p. 1). Secondly, we may find freer **loan renditions**. In the context of sports terminology, *Elfmeterpunkt* (*TAZ*, 26.06.2006, p. 16) can work as an example. Here the literal translation of *penalty spot* – in German *Strafpunkt* – is avoided by specifying the distance to the goal (11 m) from which the ball must be kicked off.[3] The third type of German quasi-equivalents of anglicisms is formed by **loan creations.** They represent substitutes for English words which do not show any lexemic similarity and thus usually only a vague structural (maybe a morphological) congruency with the English original so that they are merely semantically based on the actual model word. For instance, *Zeitlupe* (*TAZ,* 11.07.2006, p. III), in literal back-translation 'time lense', serves as a surrogate for *slow motion,* here referring to a TV broadcasting of a football match.

2.1.1.4 Nonce loans

Of course, not all anglicisms can get listed in the German lexicon after they have been inserted into or activated in a specific discursive context. Quite on the contrary, journalist texts, especially articles in the German news magazine *Der Spiegel*, may be flavoured with diverse **nonce loans**, too (cf. also Onysko 2007:37), which can, but need not establish themselves as listed anglicisms later on.

The highly mediatised time around the Fifa World Cup 2006 was also fruitful as to such spontaneous insertions. Indeed, it produced some ad hoc formations open to lexicalisation in standard German such as *Fan-Corner* (*Tagesspiegel,* 22.06.2006, FIFA World Cup supplement])*,* designating special areas for fans where to chill, but also a wording like *City-Dressing (FTD*, 17.05.2006, http://www.financial-times.de/sport/_74402.html*)*. Again, German realises a shift in meaning here, as in *City-Dressing* there is no general reference to the act of embellishing a city as in English use, but rather to the German practice during the Fifa World Cup 2006 to put the German flag on their cars, their house fronts, in the streets etc.

2.1.2 Discursive functions of insertions

At any rate, these three subcategories of insertions, in my (slightly adapted) interpretation of this concept, share at least one point: They result from a (seemingly unidirectional) process of absorption of a lexical element (Muysken 2000:60-95) into the L1, be it in a form oriented at the English original, in a form suggesting Englishness only (pseudo-loans) or in shape of a free German substitute (loan creations).

As such, the term *insertion* implies that ad hoc loans, established anglicisms or their replica words may fill **lexical gaps** in the recipient code (Weinreich 1953:58). Thus, insertions often serve **referential functions**: They often give names to objects that have been imported with their respective designations from Anglo-American culture, like almost the whole football terminology and many words relating to the realms of the media, music and commerce.

On the other hand, insertions, i.e. nonce loans, anglicisms or their German substitutes may also fulfil specific **socio-semantic functions**. Above all, it is widely known that angli-

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[3] Rendering *penalty spot* into *Strafpunkt* would have been ambiguous because *Punkt* in German, depending on the context, either corresponds to the English noun *spot,* designating the geometrical item meant here, or to the English word *point,* i.e. a mark or unit for counting (suggesting a 'penalty point').

cisms may be used as **quasi-synonyms** (Plümer 2000:266-269). For instance, *Job,* having expanded its semantic range in German in recent years, may serve as a short, hackneyed term for all kinds of work, not only for low-paid employments any longer. Therefore, it usually has got a **different connotation** than the German quasi-equivalents *Arbeit* or *Anstellung* (Yang 1990:126-133): Attesting that a football player did a good job *('einen guten Job')* is thus an idea that cannot be expressed by simply replacing *Job* by *Arbeit,* as this would not convey the notion of passion or personal involvement, but rather that of mere professionalism or routine.

Also, anglicims proper provide languages like German with **euphemisms** (Weinreich 1953:58). For example, *gehandicapt* 'handicapped'*,* referring to a sportsman, appears to be less discriminating and thus politically more correct than talking of a *Behinderung* 'disability' *(TAZ,* 03.04.2006, p. 18)*.*[4]

Additionally, anglicisms (proper) frequently **create further nuances in meaning**, as has been explained above by the example centred around the gradual meaning extension of the anglicism *Job* (Weinreich 1953:59; Yang 1990:126-130).

Another factor which seems to make German speakers favour anglicisms is that they are often **short**, i.e. sometimes only mono- or bisyllabic, whereas German is known for its long compounds (Yang 1990:123-126). This, however, does not mean that German, in principle, is entirely unable to devise shorter equivalents of anglicisms proper.

Moreover, Anglicisms may provide a text with a specific **local colour** (Plümer 2000:59), e.g. when a German journalist adorns a text with elements from American English in a report about the harsh American training methods introduced in the German national football team in 2005/06 (*Spiegel*, 29.05.2006, p. 64-67). This way a specific **sociolinguistic colour** (Plümer 2000:59) becomes evident as well, for the named article about the Americanisation of German football by Klinsmann evokes an almost military-like atmosphere. Alternatively, a sequence of lexicalised single-word switches may give an **expert sound** to a text (Plümer 2000:59, Yang 1990)**,** for instance in an article about football containing many technical or strategic 'insider' expressions such as the English-based loan translations *Elfmeterschießen* 'penalty shootout', *gelbe/rote Karte* 'yellow/red card', *Platzverweis* 'sending-off'*,* etc (*Spiegel Special 2/2006,* p. 138-142).

Given this, Winford (2003: 59) thinks that 'lexical borrowing [and processes of nativisation related to it – SK] must be seen as […] one aspect of a creative process of lexical change [and enrichment, SK] under contact".

2.2 Code alternations

2.2.1 Forms of code alternation

2.2.1.1 Word-internal code-switching

While inserted ad hoc loans consist of English material only, the interpolation of which, due to their non-lexicalisation, still evokes some foreignness or exotism in a text otherwise more or less dominated by German, the press data also revealed cases in which speakers realised non-lexicalised **word-internal switches**. They make part of Muysken's (2000: 96-121) second category, the **code alternations**. Among other things, one may encounter hybrid compounds which are spontaneously formed on the basis of a German lexical morpheme and an English one, in whatever sequence. Yet, the ad hoc character of a hybrid switch does not rule out the possibility that it may enter the German lexicon later on, which is also facilitated by the similar word-building procedures in English and German. A candidate for lexicalisation could be *Fanmeile* (e.g. *Spiegel,* 19.06.2006, p. 69). This wording was coined during the Fifa World Cup 2006 to denote the fan zones which often extended over vast areas in greater German cities.

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[4] Contrariwise, in English, *handicapped* is usually replaced by the word *disabled* now.

2.2.1.2 Classical code-switches

The majority of code alternations are, however, syntactically more extended intra- or inter-sentential **code-switches**. To underline the duality of languages, Muysken (2000: 97) speaks of an ABA structure. Here, A stands for German which forms the morphosyntactically dominant matrix code (Myers-Scotton 1993). B stands for English in its use as the embedded language, while there are no structural relations between A and B. Owing to the inner stability of recipient languages like German, which seek to maintain their grammatical frames, it is evident that code alternations appear less frequently than insertions. Yet, for pragmatic reasons and in view of the fact that many German speakers with a command of English may be said to have a gradually bilingual competence, this blocking of longer English stretches within a German text can be broken through.

Remarkable examples with a thematic connection to the Fifa World Cup 2006 are slogans like *A Time To Make Friends* (*Spiegel Special 2/2006*). Even more worth looking at is, however, the 2006 advertising motto of Coca Cola, running *It's your heimspiel (Spiegel,* 26.06.2006, p. 84). It is interesting because its overall structure is English while the text also contains a German ad hoc loan: *Heimspiel* 'home match'. The example illustrates the bidirectionality of code-switching. Additionally, it underlines that a German word embedded into a sequence of English terms (where English forms the morphosyntactic frame) may work as a **shibboleth** and give readers a sense of home.

2.2.2 Discursive functions of code alternations

Unlike insertions, code alternations are not structurally nested in the matrix language (Muysken 2000: 97). Also, there is a much higher degree according to which, in this case, the English language is psycholinguistically activated (Muysken 2000: 8). Code alternations therefore have got the potential to provide a discourse with a greater amount of Englishness, and they permit a greater variety of potentially creative forms of use.

For instance, they may create the impression of internationality or **increase the authenticity** of a text, e.g. when anglophone football players are quoted or English invectives and dummy words like *actually* and *you know* (*Spiegel*, 03.07.2006, p.137; Muysken 2000:31) are used to give readers an idea of the real scenery (Onysko 2006).

Another motivation for the use of code-switches may reside in the journalist's wish **to highlight an idea** which had already been expressed at greater length in the preceding text. In the case of such a **meta-comment** (Onysko 2006), English proverbs or sayings may occur. For instance, I spotted the exclamation *shake it, baby, shake it* in a letter to the editor. It was sent by a reader who identifies himself as a Latino who has lived in Germany since his childhood. He wants to encourage the Germans to keep their patriotism awakened during the Fifa World Cup (*Spiegel,* 26.06.2006, p. 10).

Additionally, **irony** may be engendered by the use of code-switching (Onysko 2006). I found a press text where the French pronunciation of English words as uttered by a footballer's wife was imitated: 'You lookä beautiful' (*Spiegel,* 12.06.2006, p. 63).[5]

2.3 Congruent lexicalisations

2.3.1 Characteristics of congruent lexicalisations

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[5] Taken altogether, one could get the impression that code alternations are less frequent than insertions exactly because longer switches put a high mental load on the producer and the (anticipated) hearer or reader. However, the sites at which classical code switches occurred in the press material under examination here gave no evidence of this; rather, switching often comes about in a smooth fashion (Myers-Scotton 1993), especially in the German news magazine *Der Spiegel,* the original role model of which was the *Time Magazine.* Code-switches can also be habitualised (Winford 2003). When this happens, even more anglicisms may occur. Reversely, a sequence of anglicisms may also have kind of a signal value, which helps to trigger longer code-switches.

The third interaction type in Muysken's model is formed by so-called **congruent lexicalisations** (Muysken 2000:122-153)**.** They represent the most 'intimate' and, apart from some insertions, also the, linguistically speaking, most economic and, at the same time, the most creative category of interlingual contact.

In fact, a congruent lexicalisation exploits structural equivalences between the contact languages, here between English and German, and fills the structural gaps with material from either language. Omitting instances where an abstract grammatical structure (e.g. similar agent structures of a verb or word-building patterns in the L1 and the L2, Muysken 2000: 146) is shared, congruent lexicalisations, as a rule, can be made out in cases where at least a partial **interlingual homonymy** (usually a homophony) occurs.

2.3.2 Examples and discursive functions of congruent lexicalisations

For instance, in the context of the Fifa World Cup 2006 there was constant talk about the *Klinsmänner* (*Spiegel*, 03.07.2006, p. 145), referring to the German football team led by Jürgen Klinsmann. Here the formative *–mann* from the proper name *Klinsmann* gets morphologically productive. Literally, it hints to the players' belonging to the German team, yet it also emphasises 'clean' play, viz. the absence of violence and drug abuse.

This ambiguity, again, opens a window to supplementary meanings and to a creative, non-linear play with words across language boundaries. In the case of the *Klinsmänner*, this double entendre is, self-evidently, facilitated by the homophony of <Klin-> with the English adjective *clean.* Therefore, a German waste company in Dortmund transformed this wording by putting in *clean*, notably in English writing, in the first part of the word, making it adjectival. Talking of *Cleansmänner* this way (*TAZ,* 10.07.2006, p. 17) declared cleanness to be a German mission for the football championship and beyond and made the company's employees appear as team players, too.

Similarly, the German press celebrated the form of a German player named Philipp Lahm during the Fifa World Cup 2006. Reporting on the *Wireless Lahm* phenomenon (*Tagesspiegel,* 24.06.2006, http://archiv.tagesspiegel.de/archiv/24.06.2006/ 2618037.asp)*,* journalists attributed Lahm a sheer endless power, so as if he did not need any break for recharching or recovery – a capacity somewhat comparable to what an inexhaustible *Wireless LAN* connection to the web is able to do. Again, this additional meaning only comes into being because the acronym LAN, which is rendered as /lan/ in German, is phonetically quasi-congruent with the proper name *Lahm.* Given that the proper name, as such, in translation means 'lame', the word play initiated here in view of the success of Lahm & Co. can be said to invalidate the *nomen est omen* thinking.

Admittedly, the use of congruent lexicalisations, which can be regarded as highly condensed word plays, presupposes a high metalinguistic awareness on the part of the producer and on that of the reader or listener. Accordingly, they represent rather a rare phenomenon in press texts and may be favoured by journalese texts centred on (international) events which attract the particular attention of the media – just as the Fifa World Cup 2006. At any rate, they amount to very interesting examples of language mixture.

3 CONCLUSIONS

To conclude, the following statements can be made:
(1) Contact linguistics focussing on the impact of English as a donor language should corroborate its models by including phenomena other than lexicalised anglicisms to account for the growing intensity of Englishisation that even shows up in strong European languages like German, especially in the context of a popular media culture (Androutsopoulos 2003). This shift of attention to more inclusive approaches should come about in the awareness that certain phenomena may be rarer than others.
(2) Muyken's (2000) proposal can be rendered fruitful in search of more inclusive contact

models. The model helps us to describe creative instances of gradual bilingual use like some types of code alternation and nonce loans plus congruent lexicalisations, which are based on close interlingual interactions.

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The Syntax-Semantics Interface in TL-LFG [*]

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TL-LFG takes the view that little more than a semantic ontology for the contribution(s) each element of a sentence makes to the meaning of the whole is needed as syntactic guidance: word spans and LFG functional structure. Functional syntactic structures are both built throughout the process of semantic composition and help guide it at the same time. Constituent syntactic structure does not appear anywhere as such. Word order considerations are expressed directly, rather than in terms of somewhat arbitrary hierarchical phrase structure trees. Semantics is built compositionally from the semantic atoms with no intermediate constituent structure intervening.

1 INTRODUCTION

Lexical Functional Grammar (LFG) (Kaplan and Bresnan 1982) emerged as an alternative to the transformational formal syntax tradition. The prime motivation for a theory such as LFG is evidence that functional structure is a far better candidate for expressing crosslinguistic syntactic generalisations. The starting point for LFG syntactic research is that syntactic functions such as subject and object not only make sense in the description of each language under investigation, but, furthermore, can serve as the key concepts around which a crosslinguistically valid explanation for syntactic phenomena can be developed.

Glue Semantics (Dalrymple, Lamping, and Saraswat 1994; Dalrymple 1999, 2001) emerged as an attempt to provide an alternative to phrase-structure-driven semantic composition. For this, the commutative (order-insensitive) and resource-sensitive nature of Linear Logic (Girard 1987) was ideal. Glue operates as the syntax-semantics interface. It largely owes its power and simplicity to its very clear role: Glue is there to allow all possible combinations of atomic meanings based on their composition types. Composition types are semantic types specialised with information pertaining to the particular instance of a semantic contribution as found within its linguistic context; that, of course, includes syntactic information. In fact, for most Glue research this additional per-instance information *is* syntactic, and, in the case of LFG research, almost exclusively functional. Whatever the nature of per-instance information, it is quite possible to abstract away from it: for Glue it suffices to have different labels (names) for the different structures that are important for constraining the possibilities for type-driven meaning composition. This has been instrumental in enabling Glue to effortlessly integrate with a number of syntactic frameworks other than LFG for which it was originally designed.

The role of Type-Logical Lexical Functional Grammar (TL-LFG) is the same as that of Glue: to allow all possible combinations of atomic meanings based on their composition types. The formal framework of TL-LFG is the same as that of Glue (Kokkonidis 2007, 2006). What differs is that syntactic (and other per-instance) information is abstracted away by means of a label (or the kind of semantic projections used extensively in Glue literature that were meant to have a similar role to labels mentioned here); it is built-up as part of the semantic composition process instead.

This paper shows how syntactic analysis and semantic composition is performed within the formal system of TL-LFG, contrasting it with the situation in LFG.

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2 INCREMENTAL GRAMMAR DEVELOPMENT

Given the current state of the art, it is fair to say that not a single formal grammar for a natural language is a perfect description of that language, if there could ever be such a thing by any definition; rather it is a specification of an artificial language imperfectly approximating the natural language in question. Further attempts to bridge the gap between the language specified and the language to be described lead to a different grammar. It is important for both pedagogical and grammar engineering reasons to have a theory whereby the treatment of an additional phenomenon or special case does not necessitate dramatic changes in the existing grammar. The examples to be considered will point to the conclusion that this is the case with TL-LFG even more so than with LFG.

(1) Trecho.
    run-1PERS-SING-PRES-DECL-ACT
    'I am running.'

As TL-LFG has no phrase structure rules or syntactic categories, the grammar writer is never concerned with a never ending stream of theory-internal concepts. For a simple sentence such as (1) what has to be said is what the orthography of the verb in its given person-number is and what the meaning of it occurring on its own is. Anything beyond that is part of a theory of language that needs to be justified.[1]

(2) Lexicon entry for 'trecho' (with no overt subject):

$$[run_{PRES}(indexicalI)] : t \begin{bmatrix} \nabla ... \nabla +1 \\ \text{ORTH} & \text{'trecho'} \\ \text{ASPECT} & \cdots \\ \text{TENSE} & \cdots \\ \text{VOICE} & \cdots \\ \text{MOOD} & \cdots \\ \text{SUBJ} & \begin{bmatrix} \text{ORTH} & '' \\ \text{PERS} & \cdots \\ \text{NUM} & \cdots \\ \text{GEND} & \cdots \\ \text{CASE} & \cdots \end{bmatrix} \end{bmatrix}$$

In the TL-LFG lexicon entry for 'trecho' one finds its semantics on the left of the colon. The type of the semantic expression is t, i.e. it is a complete truth statement. On the right, one finds its compositional type which is essentially its truth type parameterised with syntactic information. This syntactic information includes the orthography and the span, neither of which need be justified. However, the latter needs to be explained. If before each word we write the number of words before it, then each word will be in between two consecutive numbers. If the number before it is ∇, then the number after it is $\nabla +1$ and its span is $\nabla \cdots \nabla +1$. While special notation is used for aesthetic reasons, the value of a span is simply a feature SPAN whose value is a pair of features, START and END, so that could have also been written as [SPAN [START ∇; END $\nabla +1$]]. The usefulness of spans will be made clear later on. For an example of a sentence with numbered positions, see (10).

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[1] Actually, any underlying theory of semantics needs to be justified too, but here the emphasis will be primarily on syntactic concepts and the syntax-semantics interface they help define.

The remaining attributes do need to be justified. Concepts such as SUBJect and OBJect have been extensively argued for in the LFG literature (see for instance Dalymple 2001). This argumentation is taken to be convincing enough and f-structure is at the very core of TL-LFG; the same is not true for constituent structure. Also, what goes into f-structure will be scrutinised to ensure that it serves a theoretical purpose rather than being an inherited relic of LFG history. This means, for example, that the PRED attribute will not be used here. On the other hand, PERSon, NUMber, GENDer, CASE, VOICE, MOOD, and other such attributes that encode observations relating to morphology (with links to semantics) and correspond to well-established concepts are used but the details of their values are outside the scope of this paper.

Given the overarching requirement that what one sees is what one gets, the fact that a sentence without an overt subject will be described by an f-structure where the attribute SUBJ has a value containing various bits of information needs to be justified. If every verb without an overt subject was to come with a null SUBJ, there would be no distinction (verb orthography aside) between a sentence meaning 'I am running' and another meaning 'they are running'. Verb morphology in Greek encodes various bits of information. Some of this information concerns the subject. While the information about the subject that comes from the verb and the information about the subject that actually comes from the words that have this function could be stored separately, this is not how things are done; both verb and actual subject having to contribute to a common attribute's value structure is a simple way of guaranteeing automatic agreement checking. So, the details of the SUBJ attribute of a clause are, as a rule, contributed to by both the verb and its subject. It just happens that in the case of a lexical entry for a verb that does not have an overt object, it is the sole supplier of the SUBJ attribute information.

(3) Ego trecho. (1 of 2 possible orderings)
    I   run-1PERS-SING-PRES-DECL-ACT
    'I am running.'

(4)   Lexicon entry for 'trecho' (with an overt subject):

$$\left[\lambda\text{x}.run\ (\chi)\right]: e\ \begin{bmatrix} \alpha\cdots\beta \\ \text{ORTH} & orth \\ \text{PERS} & \cdots \\ \text{NUM} & \cdots \\ \text{GEND} & \cdots \\ \text{CASE} & \cdots \end{bmatrix}[1] \multimap_\circ t \begin{bmatrix} \gamma\ldots\delta \\ \text{ORTH} & \text{'trecho'} \\ \text{ASPECT} & \cdots \\ \text{TENSE} & \cdots \\ \text{VOICE} & \cdots \\ \text{MOOD} & \cdots \\ \text{SUBJ} & [1] \end{bmatrix}$$

where $\alpha...\beta$ and $\nabla ... \nabla + 1$ are adjacent (or equivalently: either $\beta = \nabla$ or $\alpha = \nabla + 1$) and γ=min($\{\alpha, \nabla \}$) and δ=max($\{\beta, \nabla +1\}$).

In (4) one sees a first example of both a complex type, re-entrancy, and the use of spans to specify word order restrictions. Starting with spans, the requirement that $\alpha...\beta$ and $\nabla ... \nabla + 1$ be adjacent is simply a requirement that the verb and its subject are adjacent, which in turn means that the subject [1] can either precede ($\beta = \nabla$ i.e. the subject span stops where the verb span begins) or follow the intransitive verb ($\alpha = \nabla + 1$ i.e. the subject span starts where the verb span ends). What is not allowed by this lexical entry is the intrusion of arbitrary lexical material between the two. So relative order is free, but adjacency is obligatory. This may seem like too strict a rule, but modifiers have a simple way of going around it (Kokkonidis 2007c). The result of combining the verb with its subject entity will be a clause that will have

been contributed by the words in the span $\gamma...\delta$. That span starts at γ, the point where the clause starts, i.e. the point either the subject or the verb span starts, whichever comes first ($\gamma=\min(\{\alpha, \nabla\})$). It ends where the clause ends, i.e. where the verb or the subject span ends, whichever comes second ($\delta=\max(\{\beta, \nabla+1\})$).

(5) Ego ksero   ekini. (1 of 6 possible orderings)
    I   know-1PERS-SING-PRES-DECL-ACT her-deictic-far-3PERS- SING-FEM
    'I know her.'

(6)   Lexicon entry for 'ksero' (with an overt subject and an overt object):

$$\left[\lambda x.\lambda y\, know\,(x)\right]: e \quad \begin{bmatrix} \alpha\cdots\beta \\ \text{ORTH} \quad o1 \\ \text{PERS} \quad \cdots \\ \text{NUM} \quad \cdots \\ \text{GEND} \quad \cdots \\ \text{CASE} \quad \cdots \end{bmatrix}[1] \multimap_\circ e \quad \begin{bmatrix} \gamma\cdots\delta \\ \text{ORTH} \quad o2 \\ \text{PERS} \quad \cdots \\ \text{NUM} \quad \cdots \\ \text{GEND} \quad \cdots \\ \text{CASE} \quad \cdots \end{bmatrix}[2] \multimap_\circ t \quad \begin{bmatrix} \varepsilon\cdots\zeta \\ \text{ORTH} \quad \text{'ksero'} \\ \text{ASPECT} \quad \cdots \\ \text{TENSE} \quad \cdots \\ \text{VOICE} \quad \cdots \\ \text{MOOD} \quad \cdots \\ \text{SUBJ} \quad [1] \\ \text{OBJ} \quad [2] \end{bmatrix}$$

where either $\alpha...\beta$, $\gamma...\delta$, $\nabla...\nabla+1$ are each adjacent to at least one other span in the list and $\varepsilon=\min(\{\alpha, \gamma, \nabla\})$ and $\delta=\max(\{\beta, \delta, \nabla+1\})$.

The entry for 'ego' makes a nominative 1st person singular e(ntity) type contribution. Personal pronouns are the simplest ways of contributing an entity overtly.

(7) Lexicon entry for 'ego'.

$$\left[indexicalI\right]: e \quad \begin{bmatrix} \nabla...\nabla+1 \\ \text{ORTH} \quad \textit{'ego'} \\ \text{PERS} \quad \cdots \\ \text{NUM} \quad \cdots \\ \text{GEND} \quad \cdots \\ \text{CASE} \quad \cdots \end{bmatrix}$$

The entries for 'kathe' (every) and 'mathitis' (student) complete our examples from the tiny fragment of Greek to be considered here. While order is quite free for the verb and its arguments, a determiner and its argument noun have to appear in a particular order. That difference can easily be seen in the lexicon. Greek rather than English was chosen for the examples because nearly-free word order is more challenging than both free and strict word order. That the latter is quite trivial can be seen in (9).

(8) Lexicon entry for 'mathitis' (student):

$$\left[\lambda x.student(x)\right] : e \begin{bmatrix} \nabla...\nabla+1 \\ ORTH & \mathit{'mathitis'} \\ PERS & \cdots \\ NUM & \cdots \\ GEND & \cdots \\ CASE & \cdots \end{bmatrix} [1] \multimap t\ [1]$$

(9) Lexicon entry for 'kathe' (every):

$$\left[\lambda R.\lambda P.\forall x.R(x) \to P(x)\right] : (e \begin{bmatrix} \nabla+1...\alpha \\ ORTH & o \\ PERS & p \\ NUM & n \\ GEND & g \\ CASE & c \end{bmatrix} [1] \multimap t\ \ [1]) \multimap$$

$$(e \begin{bmatrix} \nabla...\alpha \\ ORTH & o \\ PERS & p \\ NUM & n \\ GEND & g \\ CASE & c \end{bmatrix} [2] \multimap t\ \ \delta\ ) \multimap t\ \delta$$

where *n* must be singular.

The examples considered, limited as they are, show that in TL-LFG new word types can be readily introduced without concerns on how they fit in the categorical ontology that comes with c-structure. Having abolished c-structure and phrase-structure rules, TL-LFG makes introducing a new word simpler as it only involves an addition to the lexicon where its syntactic behaviour both in terms of f-structure, semantic composition, and linear order is described in a very direct manner. This is an advantage when dealing with more exotic word types than nouns, verbs, determiners, etc. Generalisations in the lexicon can be expressed by templates and other mechanisms not considered here.

Overall, TL-LFG grammar development involves simple intuitions. One hurdle that needs to be addressed is the specification of span constraints, which is currently done in a quite user-unfriendly manner. This is not a problem of the theory but of expressing it. I have to admit that using the tools that worked well for English, was not as intuitive as I had wanted for Greek.

3 THE SYNTACTIC ANALYSIS – SEMANTIC COMPOSITION SETUP

According to the Principle of Compositionality the meaning of the whole should be a function of the meaning of the parts. Glue semantics (Dalrymple 1999, Kokkonidis 2007b) provided a way of discovering this function originally for the LFG framework, but then also for other syntax frameworks. TL-LFG shares very much with Glue, but it is also a semantics

framework itself. Whereas Glue works with abstract labels sufficient for making the distinctions between different parts of the syntactic structure (Kokkonidis 2005), TL-LFG builds up a functional syntactic structure while performing syntactic analysis.

The equivalent of LFG trying to parse a sequence of words as a sentence (S), obtaining a c-structure for it, finding the minimal f-structure that satisfies the system of constraints relating the existing c-structure with an f-structure, and then trying to find a function from the various atomic meanings to the meaning of the whole using Glue, is to have TL-LFG do the latter and have f-structure information be built up at the same time as the meaning. The process starts with a specification of the target type and the typing context built up by looking up the words of the given string in the lexicon and adding their semantic atoms to the typing context. An example follows.

(10) $_0$ Kathe $_1$ mathitis $_2$ agapa $_3$ ena $_4$ vivlio $_5$
       every   student   loves   some book
       'Every   student   loves   some book.'

The TL-LFG typing context for (10), let us call it Γ, made up of the seven semantic atoms, is:

> every : $(e_{s'} \multimap t_{\underline{s'}}) \multimap (e_s \multimap t_\alpha) \multimap t_\alpha$,
> student : $e_{\underline{s'}} \multimap t_{s'}$,
> loves : $e_{\underline{s}} \multimap e_{\underline{o}} \multimap t_f$,
> some : $(e_{o'} \multimap t_{\underline{o'}}) \multimap (e_o \multimap t_\beta) \multimap t_\beta$,
> book : $e_{\underline{o'}} \multimap t_{o'}$.

Here we use semantic placeholders instead of the atomic meanings themselves as found in the lexicon. This will make it easy to see how TL-LFG builds up the function from the atomic meanings to the meaning of the entire sentence. The Greek letters are variables that can be instantiated to f-structures and s, o, s', o', $\underline{s}$, $\underline{o}$, $\underline{s'}$, $\underline{o'}$, and f simply stand for f-structures. For now we will concentrate on the semantic composition part, assuming that all these structures are different except that, as far as the derivation is concerned, we will assume all of s, o, s', o', and f can be unified with their underlined counterpart.

This given, we can simply ignore for the moment (for reasons of presentation) their exact structure. In a sense we will pretend we are doing Glue semantics in TL-LFG, but as the outcome we will get complete f-structures.

The target type is $t_{\underline{f}}$. The typing system of Figure 1 is charged with the task of finding terms M such that $\Gamma \vdash M{:}t_f$. It discovers that the two ways meaning atoms can be combined into a meaning M for the entire sentence are:

<div align="center">Reading 1</div>

every
    (λ x. book x)
    (λ x. an
         (λ y. view y)
         (λ y. loves x y))

<div align="center">Reading 2</div>

an
  (λ y. book y)
  (λ y. every
         (λ x. student x)
         (λ x. loves x y))

Replacing the meaning placeholders 'every', 'student', etc. with their intended meanings gives a potential meaning for the sentence. Each of the two expressions M represents the body of a function from the meanings of the semantic atoms to the meaning of the whole. This takes care of the semantics side.

However, the focus of this paper is also about syntax and its interface to semantics. The type system of Figure 1 plays a double role. On one hand it builds up meanings and on the other it builds up f-structures. There is an encoding of f-structures into expressions for first-order logic individuals (Kokkonidis 2007a) that enables this to happen. For the purposes of this paper it suffices to state that this encoding supports unification between f-structures.

$$\frac{\Gamma, X : T \vdash_i E : T'}{\Gamma \vdash_i \lambda X.E : (T \multimap T')} \quad (\multimap Intro.)$$

$$\frac{\Gamma_1 \vdash_i A_1 : T'_1 \quad \ldots \quad \Gamma_N \vdash_i A_N : T'_N}{F : (T_1 \multimap \ldots \multimap T_{N+1}), \Gamma_1, \ldots, \Gamma_N \vdash_i F \; A_1 \; \ldots \; A_N : T_{N+1[\sigma]}} \quad (\multimap Elim.)$$
$$[T_{1[\sigma]} = T'_{1[\sigma]}, \ldots, T_{N[\sigma]} = T'_{N[\sigma]}, \text{ and } T_{N+1} \text{ is a base type.}]$$

Figure 1

The TL-LFG Type System

We had a number of pairs of underlined and non-underlined f-structures. The underlining was just a notational convention. What it was meant to indicate was whether the f-structure was to be thought of as a requirement (underlined) or as a result (not underlined). For example, what we start with in the target type, f̱, does not contain much information, but f contains the complete f-structure representation of the sentence. Actually, f̱$_\sigma$ = f$_\sigma$, or in other words f and f̱ unify. The same is true for all the remaining pairs of underlined and non-underlined f-structures.

This means that all agreement requirements are met.

$$\underline{f} = \begin{bmatrix} 0...N \\ \vdots \end{bmatrix}$$ where N is the number of words in the input word sequence i.e. 5.

$$f = \begin{bmatrix} 0...5 \\ \text{ORTH} \quad \text{'trecho'} \\ \text{ASPECT} \quad \cdots \\ \text{TENSE} \quad \cdots \\ \text{VOICE} \quad \cdots \\ \text{MOOD} \quad \cdots \\ \text{SUBJ} \quad s \\ \text{OBJ} \quad o \end{bmatrix}$$

4 CONCLUSIONS

TL-LFG is the realization of the idea to use First-Order Glue as the basis of a grammar formalism combining the best of LFG and TLCG. It replaces phrase structure rules by an ability to express linear precedence within the lexicon in a way reminiscent of, but different to that of Categorial Grammar. Without phrase structure rules, it could be seen as even more 'lexical' than the original LFG. Retaining f-structures but disposing of c-structure as such, it could be seen as even more 'functional' too. Its whole setup, including having semantic types parameterized by f-structures rather than syntactic categories as its base compositional types, brings TL-LFG even closer to semantics than TLCG variants. In short, TL-LFGLL occupies a very interesting position between existing grammatical frameworks and combines some of the best aspects of its immediate neighbours, TLCG and LFG. It allows grammar development to follow intuitions both from semantics, morphology, and word-order properties in a fairly simple and direct manner and provides a very simple and elegant syntax-semantics interface.

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Place of Articulation and Consonantal Strength

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Besides *manner of articulation* and *glottal activity*, which have been more studied, *place of articulation* also plays an important role in determining the relative strength of a consonant. This is so because the joint contribution of magnitude and duration of articulatory gestures (glottal, velo-pharyngeal, and oral) defines a global level of intraoral pressure that can be related to strength (Malécot, 1970).

This aerodynamic criterion has been used to explain the role that a back place of articulation can have in reducing oral volume and thus increasing intraoral pressure, namely strength. This can interfere with glottal activity (e.g. in passive devoicing).

I will provide examples of diachronic change in several languages which show a tight relationship between back places and strength. These examples are mainly from Semitic languages, such as Arabic, but also from some others, such as Samoan (Austronesian) and Vlach Romani (Indo-European).

A relation has been proposed between order of diffusion of linguistic change and place of articulation. However, there is controversy about the relative order between labials and coronals. I will examine different proposals and I will present articulatory, aerodynamic and perceptual data to support the idea that coronal consonants are weaker than labial consonants. The lesser the mass of the articulatory organ, the faster the movements and the shorter the duration of the gesture, which leads to weakness. In addition, certain kinds of coronals might be associated with a relatively descended position of the jaw, which can cause an increase of the oral volume and, consequently, a decrease of the intraoral pressure. Nevertheless, further study is needed on the link between jaw gestures and different types of labials and coronals. To finish, there are some optimal durations for the correct perception of each manner, which vary depending on the place of articulation, and these thresholds seem to favour the weakening of coronals much more than that of labials or dorsals (García Santos, 2002).

1 INTRODUCTION

Traditional research on lenition and fortition has usually dealt with the relationship between these phenomena, on the one hand, and *manner of articulation* and *glottal activity*, on the other, not focusing on *place of articulation*. This paper is an attempt to link this *place of articulation* to the other two factors and show the contribution of *place* to determining the relative strength of a consonant.

Articulatory Phonology (Browman and Goldstein, 1986, 1992) suggests that consonantal strength increases as magnitude and duration of articulatory gestures do so, these gestures being: glottal, velo-pharyngeal, and oral (in turn, oral gestures can be broken down into different gestures, corresponding to tongue body, tongue tip, lips and jaw). Though these gestures are quite independent of each other in some senses, the three help to define a global level of intraoral pressure that can be related to strength (Malécot, 1970).

A back place of articulation (as an aspect of oral gesture) leaves a short distance between the vocal folds and itself. The reduced oral volume causes an increase in intraoral pressure, and this explains the relative strength of dorsal consonants, for example. On the

other hand, front places of articulation have been pointed out as a factor of relative consonantal weakness (Blevins, 2004; Laver, 1994; Locke, 1983).

In the following sections, I will analyse the repercussions of back and front places of articulation on the strength level of consonants, their interactions with manner and glottal activity, and the implications for linguistic change.

2 BACK PLACES OF ARTICULATION

As has been said, back places of articulation imply a small volume of the resonance cavity in the mouth and, consequently, a tendency towards the rapid build-up of intraoral pressure.

This aspect of the oral gesture, by itself, entails a relative strength for the consonant. Moreover, it may interfere with the aerodynamics of the phonation processes and thus with glottal gesture. A great pressure may contribute to a passive devoicing, and the longer the duration of the (back, obstruent) oral gesture, the greater the possibility of devoicing. This occurs when supraglottal pressure equals or surpasses subglottal pressure, which prevents the vibration of vocal folds.

> Vibration will [...] fail to occur if subglottal pressure is too low (e.g. the speaker is out of breath) or *supraglottal pressure is too high* (e.g. because air is impounded in the oral cavity by an articulatory closure), even if the vocal folds are in a position that would induce vibration under other conditions (Ladefoged and Maddieson, 1996: 49, my italics).

Typologically, /k/ is more frequent than its voiced cognate /g/. If a language has a defective phonological system with regard to plosives, it is most likely that it lacks /g/ (or /p/) (Locke, 1983: 146). According to Maddieson (2006), in the UPSID 451-language database there are 40 inventories with no /g/, which were expected to have it, as they have other velars and other voiced plosives; and 38 don't have /p/.

In order to compensate for the trend towards passive devoicing, speakers may turn to several strategies, such as lowering their larynx, relaxing their mouth muscles to let them expand the oral cavity if necessary, or descending the lower jaw. All these strategies reduce the supraglottal pressure by increasing the resonance cavity volume.

As we can see, then, back places of articulation are attributed a great consonantal strength, owing to an aerodynamic criterion of intraoral pressure. The relationship between changes towards back articulations and strength is observable in diachronic evolutions of quite a lot of languages. Here are some examples.

We will first comment on Pre-Samoan (t > k). At a first stage, there were only two stop consonants, /p/ and /t/. Probably, place of articulation would be distinguished by means of VOT (lower for the labial), rather than by transitions. Provided that transition clues had no relevance, [t] and [k] would start to freely alternate, and [k] was a better option, as it showed a more different VOT from /p/. That's how /k/ became phonological (Blevins, 2004: 124). According to this explanation, we can see that the backward shift in place of articulation is truly linked to a strengthening process, because it has to do with an increase in VOT (which implies a longer duration of glottal aperture gesture, a gesture related to strength, cf. Lahoz, 2006).

In Vlach Romani, dental stops became velar stops, at the end of a complex evolutionary process which turned the former into affricates and later deaffricated them. The strength of the affricate was substituted for the strength associated with the backward shift in place. The following examples are from Hancock (1991: 104):

(1)   buti > butji > butʃi > bukji > buki   'work'
(2)   stadi > stadji > stadʒi > staagji > stagi   'hat'

Pharyngalisation is a common process in Semitic languages, e.g. in Aramaic, Hebrew, Phoenician, Old Akkadian, Soqotri, Tigrinya, Harari, and, of course, Arabic. Some authors, as Goman (1979: 28) or Laver (1994: 327 ff.), link this Semitic pharyngalisation to consonantal emphasis. In Arabic, indeed, there is a trend to associate the most backward places of articulation with the strengthening of consonants (Isabel Abad, personal communication). Emphatic consonants are characterised by a greater magnitude in oral gesture, and by a greater accumulation of intraoral pressure. Cantineau (1960) deals with this kind of strengthening, which he calls

> *vélarisation emphatique* dont l'arabe et le berbère fournissent de bons examples: à des consonnes normales s'opposent des consonnes présentant, outre leur point d'articulation principal, un rapprochement entre la racine de la langue et le voile du palais qui donne à la consonne un timbre particulier (*op. cit.*: 163, original italics).[1]

This correlation has affected the consonant inventory in different synchronic slices through the history of Arabic. However, some alternations are consolidated and can be regarded as diachronic changes. For example, in Semitic there was an alveolar trill, which is still in Old Arabic. Nevertheless, in Old Arabic a new, emphatic *r* appeared, as an allophonic variant in the context of /ɑ, u/ (i.e. back vowels) or some other emphatic consonant. Nowadays, in Maghreb Arabic, it has become phonological, due to some analogical changes that have introduced certain level of opacity in the alternation. Thus we have some contrasts such as the following (after Cantineau, 1960: 50):

(3)   /dɑːr/ 'he has done'

(4)   /dɑːrˤ/ 'he has come back'

All these examples show the validity of the relationship posited to exist between back places of articulation and consonantal strength.

3 FRONT PLACES OF ARTICULATION

Labial and coronal consonants are articulated in a front place within the mouth, thus leaving quite a large resonance cavity between the vocal folds and the narrowing point. Such a big volume is a factor of relative weakness, because it contributes to a lower level of intraoral pressure.

Following this reasoning, labials should then be the weakest among consonants, provided that their place of articulation is the furthest possible from the vocal folds. Nevertheless, there are data that may suggest that coronals are weaker than labials. In this section, I will explore the possible reasons for this.

A relation has been proposed between order of diffusion of linguistic change and place of articulation. Some authors (e.g. Laver, 1994; Locke, 1983) support an order *dorsal-coronal-labial*,[2] and others (e.g. Banczerowski, 1978; Zubritskaya, 1997) support *dorsal-labial-coronal*. As can be deduced from the preceding section, it seems uncontroversial that dorsals go first; however, these proposals differ in the relative order between *labial* and *coronal*. Supporters of the order *dorsal-coronal-labial* mainly adduce instances of voicing

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[1] [emphatic velarisation, of which Arabic and Berber give good examples: in contrast to normal consonants, there are some consonants which show, besides their main place of articulation, a rapprochement between the tongue root and the soft palate, which provides the consonant with a particular timbre].

[2] Or just the opposite, depending on whether the change is triggered by a strengthening or a weakening process.

processes as an argument in favour of their theory. On the other hand, those who back an order *dorsal-labial-coronal* base this proposal on a wider range of processes, including degemination, approximantisation, and debuccalisation, as well as voicing. The reason why labials may favour voicing is clear: it is due to the long distance from the place of articulation to the vocal folds. However, the existence of data that may bear out the relative weakness of coronals (as compared to labials) needs further explanation, since logic points to the contrary.

In what follows, I will present articulatory, aerodynamic and perceptual arguments with which I will try to justify why coronals can be weaker than labials.

3.1 Articulatory arguments

Banczerowski (1978: 68-69) suggests that place of articulation is a relevant parameter in determining the strength of a given segment, due to the mass of the corresponding articulatory organ. The lesser the mass, the faster the movements and the shorter the duration of the gesture, which leads to weakness. On the contrary, an organ with a greater mass will move more slowly, the gesture will last longer, and this is likely to contribute to a greater accumulation of intraoral pressure. According to Banczerowski, labials are stronger than apicals, owing to the fact that the mass of the lips exceeds that of the tongue tip.

The same opinion is found in Kaplan (1960: 361), who posits the following order for the articulatory organs, from the fastest to the slowest: tongue tip, jaw, tongue body, and finally, sharing position, the lips and the velum.

When Blevins (2004: 121) comments on the order of diffusion of debuccalisation (and glottalisation) of [p, t, k], she says the following:

> The fact that closure durations may differ for stops at different points of articulation means that debuccalisation itself may occur first with the stops of shortest duration, and only later with those whose closure durations are longer. Coronal closure durations can be shorter than those for labial and velar stops, and tongue-tip movements show higher velocities than tongue-dorsum or lip movements.

This means that the weakest sounds with regard to the duration of oral gesture are precisely the likeliest to undergo debuccalisation. The Articulatory Phonology framework predicts that these sounds are the coronals, due to the high velocity of the tongue-tip movement, versus that of other articulatory organs. On the one hand, this prediction suits English data, as glottalisation of [t] has spread in many dialects, whereas for the other places of articulation 'variation is still found between final [p'/ ʔ] and [k'/ ʔ]' (*ibid.*). Moreover, this statement on place of articulation is specially interesting for us, since it adds arguments in favour of the relative weakness of coronals versus labials.

3.2 Aerodynamic arguments (or the role of the jaw)

Throughout this paper we have been using an aerodynamic criterion to define the strength, namely the level of intraoral pressure, and we have made it depend on the volume of the resonance cavity. However, we have paid attention to only one dimension in determining this volume, that is the horizontal axis from the rear to the front of the mouth. The vertical axis (top to bottom) should also be taken into account, and not only with respect to tongue movements, but also to jaw movements, which are very important, but have been little studied, at least in comparison with other aspects.

If we could prove that coronals are pronounced with the jaw in a relatively descended position, that would be an extra argument to back their weakness. However, there are several studies that point at the contrary (though some clarifications will be made below).

Tuller *et al.* (1981) ran some EMG experiments with four speakers of American English and checked that 'during the onset of consonant constriction the mandible was highest for /t/ and /f/,[3] slightly lower for /p/ and lowest for /k/' (*op. cit.*: 180). Of course, the range of consonants analysed is too small, but these results are to be borne in mind, because they suggest a larger volume of the resonance cavity for labials (rather than coronals, setting apart the odd case of /f/ – see footnote 3). This larger volume is not only due to the horizontal axis, but also to the vertical one (more precisely because of the jaw movement). As for /k/, even though the jaw is placed in a low position[4], the volume of the resonance cavity is quite small, this time owing solely to the horizontal axis.

These results agree with those obtained by other authors, such as Browman (1994), who posits an order $s > t > p > k$ (from highest to lowest position of the mandible).

Keating, Lindblom *et al.* (1994) ran another experiment with speakers of English and Swedish, and tested a wider range of consonants: /f, b, t, d, s, n, l, r, k, h/ for both languages (though they recognise that there are quite a lot of differences between the two languages from the phonetic and phonotactic points of view). As a result, they found that 'in both languages the alveolar obstruents and /f/ are in the higher half of the consonants while /b/, /l/, /k/ and /h/ are in the lower half, but details of the rankings differ'. These rankings are as following:

(5)   English: $s > t > d > r > f > l^5 > n > b > k > h$

(6)   Swedish: $s > t > d > f > n > r > b > k > l > h$

Lee (1995) provides data on three languages different from the previous ones: Arabic, French, and Korean. Again, coronal consonants are characterised by a higher jaw position than labial consonants, for all three languages. This is true for fricatives and affricates, above all. Labiodental /f/, when tested (only in French), patterns with coronals in jaw height.

On the other hand, several of these authors (e.g. Keating, Lindblom *et al.* 1994) state that the higher the mandible, the lesser the influence of vocalic context on the jaw height of the consonant. That is, as a norm, consonants display higher positions than vowels but the exact position may vary whether the contiguous vowel is, for example, /a/ or /i/; however, coronals are the least prone to this variation.

Surprisingly, sometimes an alveolar consonant can even reach its highest jaw position when the context is the vowel /a/. Following Imagawa *et al.* (1985; *apud* Keating, Lindblom *et al.* 1994), this is so because the jaw movement reaches such a high velocity to pass from one extreme to the other that the intended target is overshot, and the jaw reaches a higher position than usual.

Such velocity, however, is not exclusive of alveolars. Löfqvist and Gracco (1997) have documented it for labials too.

> The lips were moving at high velocities at the instant of oral closure. As a consequence, the lower lip was continuing its upward movement after the closure had occurred. During this time, the upper lip often showed an upward movement that appeared to result from a mechanical interaction between the two lips. [... This] suggests that the virtual target for the lips in making the stop is a region of negative lip

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[3] We will point out certain particularities of /f/ later.

[4] This is an articulatory characteristic typical of guttural sounds as a class, although jaw height is always phonologically undefined for gutturals (Goldstein 1994; Nolan 1995).

[5] English /l/ is pronounced in quite a backward position in the mouth (it's a dark /l/), whereas Swedish /l/ is a light one. This explains the different order in the hierarchy between both languages. The most common jaw height, however, must be that of Swedish, according to Stone and Vatikiotis-Bateson's (1995) explanation that a low position of the mandible is needed to guarantee that the air tube be open in the laterals of the mouth.

aperture – that is, to reach the virtual target the lips would move beyond each other (*op. cit.*: 891).

In fact, it appears to be the case that a high velocity that guarantees the formation of a complete closure (and thus the build-up of air pressure) is a requisite for all stop consonants, regardless of their place of articulation (*ibid.*). On the other hand, according to Löfqvist and Gracco (1997), labiodental fricative /f/ is also characterised by a high velocity of the upward jaw movement, which suits the previous data about the jaw height of /f/ patterning with that of coronals. Probably, this is so because of the great compressibility of the tissue of the lower lip. Moreover, labiodental articulation implies a retraction of the lower jaw in order to place the lower lip under the upper teeth. According to Vatikiotis-Bateson and Ostry (1995), there is a correlation between jaw retraction and upward movement (as well as between jaw protrusion and downward movement). I suggest that this correlation may contribute to the relatively high jaw position of /f/.

In general, fricatives show quite a high velocity, though not so high as stops, 'even when the displacement is of equal magnitude' (Löfqvist and Gracco, 1997: 891). Continuing this series, we may hypothesize that the mandible movement must be yet slower for approximants. Moreover, we may suppose that the intention is – contrary to stops – to keep the mandible at a relatively low position in order to reduce the contact between the active and the passive articulators. Nevertheless, further research is necessary to verify this hypothesis and to measure the exact positions for each place of articulation (as far as I know, no experiments have been done for approximants).

I would like to suggest an interaction between place and manner of articulation. Coronals show a higher position of the mandible than labials when they are stop consonants, but it may be the reverse when they are approximants. For example, if we think of Spanish stop [d], whose place of articulation is dental, versus approximant [ð̞], whose place of articulation is interdental, it may be logical to suppose that for the latter the jaw will protrude slightly with respect to the former, in order to favour interdental position of the tongue. Following the same reasoning as for /f/ above (but just the opposite in this case), because jaw protrusion correlates with lowering, the final position of the jaw may be lower for coronal [ð̞] than for labial approximant [β̞], for which there is no need of protrusion (nor retraction) to align the upper and the lower lip. However, as said above, all these proposals require further experimentation.

To sum up, the role of the jaw is important in that it helps to define the volume of the resonance cavity (by lengthening or shortening the vertical axis), and thus the level of intraoral pressure. Several authors point out the higher position of the jaw in coronal stops, affricates, and fricatives, with respect to labial cognates. However, we have suggested that this may be the reverse for approximants. Further measurements are needed, but if we could confirm this hypothesis, that would provide an argument for the relative weakness of coronal approximants.

3.3 Perceptual arguments

For Articulatory Phonology, lenition processes that affect manner of articulation (such as degemination, fricativisation, approximantisation, etc.) are explained together with voicing processes as a reduction in the duration of articulatory gestures. Laboratory Phonology has provided the opportunity to empirically check that, by reducing little by little the duration of a sound, the result is successively perceived as a (voiceless) geminate, a (simple) voiceless stop, a voiced stop, and finally a (voiced) approximant.

García Santos (2002) explored the mechanism of these processes in the history of Spanish and tested the relationship between duration and what was perceived. Velars and

bilabials patterned together, whereas the dental series differed considerably from the other two. In the following chart, we provide the optimal durations (in milliseconds) for the perception of geminates, simple voiceless stops, and voiced approximants at all three analysed places of articulation. Between each category, the perceptual threshold is inserted.

	Geminates (optimal)	Threshold	Voiceless (optimal)	Threshold	Voiced (optimal)
VELARS	210	150	95	70	30
BILABIALS	210	150	95	70	30
DENTALS	* no info *	210	150	95	70

Table 1

Perceptual effects of duration for velars, bilabials, and dentals in Spanish

As can be seen, these thresholds clearly favour the weakening of dentals much more than that of bilabials or velars, and they do so for a wide range of processes, including degemination and approximantisation, as well as voicing.

4 CONCLUSIONS

In this paper we have illustrated that consonantal strength is influenced not only by manner of articulation and glottal activity (as has been well studied), but also by place of articulation, though this interacts with the former two in processes such as, for example, debuccalisation or passive devoicing, respectively.

Back places of articulation are characterised by a relatively small volume of the resonance cavity, which helps to build up air pressure more quickly, so these consonants are stronger. We have seen some typological consequences of this, such as the trend of consonantal inventories to lack /g/ (or /p/) if some plosive is to be missing. And we have provided examples of linguistic change from several languages in which backward shifts in place of articulation are associated with an increase of strength.

As for front places, we have examined the controversy about the relative order of labials and coronals, and we have offered articulatory, aerodynamic, and perceptual arguments to justify why coronals can be weaker than labials, despite the relatively backward place of articulation with respect to these. The lesser mass of the tongue tip (in comparison with that of the lips) allows faster movements of the articulator, a factor of weakness. Moreover, we have pointed out the need for more studies to take into account the contribution of jaw movements, since the global volume of the resonance cavity is not only defined by the horizontal axis, but also by the vertical one. Several authors support the idea that coronals are pronounced with the jaw in a higher position than labials, at least when the consonant is a stop, an affricate or a fricative. We have suggested that the reverse may be possible for approximants, due to several arguments about jaw velocity and jaw protrusion. However, further measurements are needed. As for the perceptual data, the durational thresholds clearly favour the weakening of coronals versus labials or dorsals.

All these considerations yield the following order of diffusion of linguistic change: *dorsal-labial-coronal* when the change is triggered by an increase of strength, or just the opposite when it is caused by weakness.

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Variation in Singapore English as reflected in aspectual constructions[*]

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This paper reports ongoing research into Singapore English, an outer-circle English (Kachru 1985) with endogenous contact ecology (Bao 2005). The variety has been analysed as a continuum (Platt 1975; Ho & Platt 1993), reminiscent of post-creole ones (DeCamp 1971); more recently, the idea of a diglossic speech community (Gupta 1994; 1998; 2001) was put forward. In this latter analysis, Standard Singapore English is H(igh), and Colloquial Singapore English, often called 'Singlish', is L(ow).

The current study involves a sample of 36 students from three different socioeconomic backgrounds. Interviews in four distinct situational settings are used to select one of the two competing models. Variables include aspect markers (Bao 1995; 2005), existential *got*, and discourse particles (Gupta 1992; 1994).

1 INTRODUCTION

Research into Singapore English is ample, and has focused on various aspects of the variety. One recurrent issue is that of the sociolinguistic typological models proposed to explain the variation inherent in Singapore English (henceforth SgE): early on, Platt (1975) applied DeCamp's (1971) post-creole continuum to Singapore, arguing for a continuum of indiscrete sociolects. Gupta (1994; 1998; 2001), however, used the concept of diglossia (Ferguson 1959), positing the existence of two sub-varieties, Standard Singapore English (SSE) and Colloquial Singapore English (CSE), distributed functionally. Other models proposed since then (Pakir 1991; Poedjosoedarmo 1995) have tended to favour the first of these two approaches. This paper tries to clarify the issue, taking into consideration recent findings from fieldwork carried out in the city-state.

2 RESEARCH QUESTION

From what precedes, the research question tackled in this paper can be phrased in the following way: is the variation inherent in SgE one that reflects a continuum of sub-varieties, or one typical of a diglossic speech community? The data collected from fieldwork are expected to shed some light on this issue.

3 METHODOLOGY & VARIABLES

3.1 Methodology

A total of 36 informants are being interviewed for the purposes of the present study. They are drawn in equal numbers from three post-secondary institutions, which vary in terms of entry

requirements, and represent the post-secondary options chosen by the majority of the population (83.8%, Ministry of Education 2006). In each institution, four students were selected from each of the three majority ethnic groups – Chinese, Malay, and Indian – thereby ensuring equal representation of ethnicity (12 students from each race) and educational background (12 students from each school type). Table 1 below represents this graphically.

	Chinese	Malay	Indian
Junior College	4	4	4
Polytechnic	4	4	4
Vocational training	4	4	4

Table 1

Distribution of informants by ethnicity and school type

Students from the first two schools (a polytechnic and a vocational training college) were interviewed in October-November 2006, while the last one (a Junior College) will be done in early August 2007. The three school types are taken to represent three socio-economic classes: as yet unpublished research by the National Institute of Education (p.c. Bockhorst-Heng) has found a close correlation between primary school pupils' socio-economic background and their achievements in school. While it is problematic to extend this to the post-secondary level, the relatively wide range of available options would reflect, if not academic achievement (through entrance requirements), then at least ambition, i.e. an act of identity[1].

The informants were interviewed in ethnically homogeneous groups of four, resulting in nine groups (the nine cells in Table 1). A series of four recordings was then carried out: firstly, an individual interview with each of the informants, secondly, a dialogue interview, thirdly, a task-based group recording without the researcher, and lastly, a radio-microphone recording of casual conversation in a recreational area, typically the school canteen. This is illustrated in Table 2:

Type	Number per group	Approx. duration per recording
Individual interview	4	15 min
Dialogue interview	2	15 min
Group recording	1	15 min
Radio-microphone recording	1	15 min

Table 2

Structure of the recordings

In the course of the two hours that were spent with each group, formality was expected to decrease significantly: the settings were designed to enable a smooth transition from interviewer-led interaction, via structured conversations, to more relaxed types of speech.

The interviews were recorded on mini-disc and transcribed in .txt files, which were then analysed with WordSmith Tools. At the time of writing, this amounts to 12 hours of recording time and a corpus of 74,000 words, and is expected to grow to about 18 hours (110,000 words) once the last third is completed.

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[1] For example, a student in Junior College will be aiming higher than one in vocational training. With this choice comes a need to identify as part of the Junior College community: one way of doing this involves language.

3.2 Variables

3.2.1 Aspect markers

The title of this paper introduces the main variable of this study, aspect markers. In SgE, the aspect system can be analysed (Bao 2005) as having been transferred from the major substrate language, Chinese, into the emerging variety, where it was relexified by the superstrate English. Typically, they take the form of English adverbs, and mark a Chinese-type aspect. Table 3 below is from Bao (2005).

		Chinese	SgE	English
(a)	Perfective			
	(i) Completive	V *le*	S *already*	V-*ed*, V-*en*
			*V already	
	(ii) Experiential	V *guo*	*ever* V	≈ *ever* V-*en*
	(iii) Emphatic	*yǒu* V	*got* V	-
		V- *wán*	V *finish*	-
(b)	Inchoative	S *le*	S *already*	-
(c)	Inceptive	S *le*	S *already*	-
(d)	Imperfective			
	(i) Dynamic	*zài* V	V-*ing*	V-*ing*
	(ii) Stative	V *zhe…* (*ne*)	≈ V-*ing*	≈ V-*ing*
	(iii) Stative	V-*zhe* V	-	-
(e)	Tentative	V-V	-	-

Table 3

Aspect system in Chinese, SgE and English

While the analysis in Table 3 omits complex Chinese aspectual categories (as described in Xiao and McEnery 2004), it provides a helpful working tool with which to start. For the current study, the following were retained: completive, experiential, delimitative ('tentative' in Table 3), and inchoative (Bao 2005), as well as progressive and habitual (Alsagoff and Ho 1998). These variables have a number of possible variants, each of which can be classified as being either acrolectal/SSE or basilectal/CSE, as illustrated in Table 4.

The interview was designed so as to elicit as many tokens of these variables as possible. For instance, participants were asked to describe a typical day, in the hope that habitual constructions would be used. Similarly, discussions about holiday destinations were conducted with the experiential aspect in mind.

Variable	CSE variants	SSE variants
1) Completive	*already* *finish/got*	perfect
2) Experiential	*ever*	before, periphrastic
3) Delimitative	V-reduplication	Ø or periphrastic
4) Inchoative	*already*	Ø or periphrastic
5) Progressive	(BE) *still* V-*ing* Ø V-*ing*	BE V-*ing* BE *still* V-*ing*
6) Habitual	*always*	*used to* V/*would* V Simple present/periphrastic

Table 4

Aspectual variables under investigation

3.2.2 Discourse particles

The second set of variables that this study focuses on is discourse particles. They refer to a number of clause-final particles, described in detail by Gupta (1992) and Wee (2004), among others. They fulfil a variety of different pragmatic roles, but can be treated as a single variable for purposes of diglossic identification. The particles under investigation include, in ascending order of assertiveness (Gupta 1992), *ah/hah* (tentative), *hor* (request for support), *lor* (indicating obviousness), *lah* (assertive), *leh* (tentative suggestion), *meh* (marks scepticism), *what* (contradictory), *mah* (indicates an obvious contradiction). (1) below exemplifies the use of two of these.

(1)   Because she wants to sing mah. So she want to use, she want to join to sing, so we just groom her lor.
        (ii.C.4.m)[2]

3.2.3 Existential constructions

By existential constructions I mean sentences of the type exemplified in (2a), which can be rendered, in CSE, by deleting the expletive subject and using *got*, as in (2b). Also included in this category are locative utterances (see (3)), which use the same *got*.

(2)   (a)   There is a problem with this device.
        (b)   Got problem with this device.

(3)   I think got waterfall what. You will get to watch waterfall if you go hiking.
        'I thought there was a waterfall there. You can see it if you go hiking.'
        (iii.C.gr)

Therefore, the variants used are threefold: firstly, the SSE constructions of the type in (2a), consisting of *there* + BE, can be of an existential or a locative nature. The second category encompasses CSE constructions (both existential and locative) with *got*, where both the expletive and the copula are missing. A third, 'mixed' category can also occur, with *there* + *got*, as in (4) below, where 2's turn is a confirmation of 3's. This happens only in locative constructions (with *there* performing deixis and substitutable, if appropriate, with *here*). Rather than outright copula-deletion, as it often occurs in SgE (Ho & Platt 1993: 30-69), the copula here is replaced with *got* – in fact, a sentence like (5a) would be ungrammatical. On the other hand, (5b) would be acceptable, but it would become existential, rather than locative.

(4)   3: I think is better if you go East Coast, I don't want Changi.
        2: There got ghost ah.
        (iii.I.gr)

(5)   (a) *There is got ghost ah.
        (b) Got ghost ah.

Table 5 below gives a summary of these variants, with an indication of how their occurrence will be interpreted in the diglossic framework. Of the five variants, two are indicative of SSE, and three mark the CSE sub-variety.

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[2] Informant identification. ii = school type, C = ethnicity, 4 = number within group, m = sex. In other examples, gr = group recording, rm = radio-microphone recording.

Construction	SSE	CSE
a) Existential		
i. *there* + BE	×	
ii. *got*		×
b) Locative		
i. *there* + BE	×	
ii. *got*		×
iii. *there* + *got*		×

Table 5

Classification of the (got) variable's variants

4 RESULTS

Preliminary results from the available two thirds of the sample show the following trends: aspect markers have yielded too few tokens to be statistically significant, discourse particles seem to suggest the existence of two sub-varieties, and the (got) variable supports the diglossia hypothesis even more strongly.

4.1 Aspect markers

For the completive, *already* occurred 22 times, *finish* only once, and *got* never. Experiential *ever* was observed twice, as well as 32 instances of inchoative *already*. Verbal reduplication occurred in 13 cases, few of which could be given a tentative reading, and the habitual *always* construction occurred three times.

In a corpus of 73,820 words, these figures cannot be taken to represent much. Except perhaps for *already*, which had a rate of occurrence of 0.73‰, all variables were used disappointingly sparingly. Although the common trend is for L variants to peak, in all cases, in the group setting, numbers are too low to be significant in any sense.

4.2 Discourse particles

As far as discourse particles are concerned, many more tokens were observed. In total, 983 discourse particles were used, *ah* (621) and *lah* (270) accounting for over 90%. This equals to 13.32‰ of the total corpus. The distribution across situational settings shows a sharp divide between settings in which the interviewer is present (individual and dialogue interviews) and those in which he is not (group and radio-microphone recordings): the two 'formal' settings scored 9.26‰ and 9.25‰ respectively, and the two 'informal' ones 21.95‰ and 23.98‰, as illustrated in Figure 1.
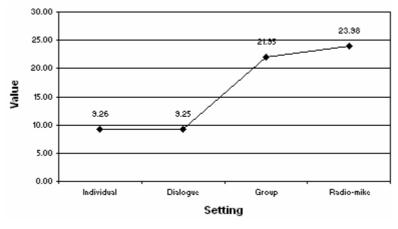
Figure 1

Discourse particles per 1,000 words, distributed across interview settings

4.3 Existential constructions

212 constructions were observed in the available data, and 55 of these used the CSE variant. In terms of distribution (see Figure 2), there was a slight increase from the first to the second setting (+1.01 percentage points), a large gap between the second and the third (+40.81), and a decrease between the third and the last (−11.74).

The gap between the settings Dialogue and Group reflect that observed with the discourse particles. The decrease within the two informal settings, however, will need further investigation.
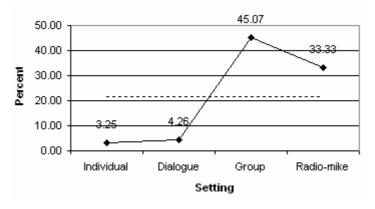
Figure 2

CSE variants of the (got) variable

5 CONCLUSIONS

Results available to date seem to point, overall, towards the diglossia hypothesis. While aspectual variables are inconclusive for lack of data, both discourse particles and existential constructions show a clear break in occurrence rates between two sets of situational settings: in the individual interviews as well as the dialogue ones, usage of basilectal/L variants were encouragingly homogeneous and relatively low, while in the group and radio-microphone recordings, the same variants were, although more heterogeneously so, used at a much higher rate.

This tells us that we are here in presence of two codes, which are chosen on grounds of the situational setting's formality. Diglossia or not, there seems to be functional distribution

of the two sub-varieties. Future work will have to answer the question of whether this switch is observable by other variables as well, and whether additional data support these findings.

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A Study of Self- and Peer-Assessment of Learners' Oral Proficiency[*]

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To provide learners with SA/PA instruments through a learner training which would enable them to apply them in a context where a teacher-evaluator is not present and where they would need to learn another language (L3) through the medium of L2 (i.e. English) was the ultimate aim of the study. This paper reports on a study of upper-intermediate learners in English which focussed on the following two questions: (1) To what extent can learners accurately assess their own and peers' performances of tasks in the target language? (2) How does learner training in self- and peer-assessment improve learners' ability in appraising their own and their peers' language ability? A fortnight's task-based learner training programme was also conducted to develop the learners' abilities in metalinguistic strategies, to enable them to understand and interpret their peers' feedback by using two oral performance tasks. In order to determine how useful learner training is for both learners and tutors, the programme was evaluated as an ongoing process by means of a multi-method approach, using data from learners' overall evaluation questionnaires, pre- and post-interviews with learners, interviews with tutors, learners' self- and peer-assessment results and tutors' rating scores. The results show that learners were able to assess their performances more accurately with repeated practice.

1 INTRODUCTION

In a self-teaching or self-directed learning situation where a teacher-evaluator is not present, learners nevertheless want to have an idea of their progress and have some means of assessing their language ability or proficiency (e.g. peer judgment, use of rating scales when available, trials in real-life situations, etc). In this respect, both self-assessment (SA) and peer-assessment (PA), which can be understood as measurements carried out *by learners themselves* or *by their peers,* can play a significant role in helping the learners to monitor their learning progress and/or to judge their language proficiency/ability. The reason is that such assessment can provide them with 'personalized feedback' as part of their reflection about learning (Nunan 1988). Furthermore, through SA and/or PA the learners become aware of specific areas in which they need to improve or get more support from language teachers/tutors. Indeed, the notion of SA/PA is no longer a new concept in language ability assessment (Brindley 1989); nevertheless, how the learners can be involved in oral proficiency assessment (not only SA but also PA) still needs further investigation because only a few studies have attempted to explore this area at the time of writing (Cheng and Warren 2005). This paper discusses some critical issues of learners' involvement in assessment and suggests relevant instruments for learners' oral proficiency assessment in the self-teaching or self-directed language learning context.

1.1 Involving Learners in Assessment

The greater emphasis on encouraging learners to judge their own or peers' language ability critically has led to an increased interest in the use of the SA/PA techniques in the ESL (English as a second language) classroom since the late 1970s (Oskarsson 1978; von Elek 1985; Dickinson 1987; Brindley 1987). The main reason for this emphasis is that it is claimed SA and PA can help learners get to know 'how to learn' (Nunan 1988). As von Elek (1985) and Benson (2001) argue, learners become aware of their ability while assessing their language proficiency and their progress. By recognizing their weaknesses, they will then be able to seek help with these areas in which they need to improve. Finally, they will see how close or how distant their actual language proficiency is from the level they wish to achieve.

There is some evidence that SA and PA can be effective. For instance, research[1] originally done by Low (1982) and his colleague (reported in Lewkowicz and Moon (1985: 64) provided evidence that learners' evaluative abilities could be enhanced. The researchers trained all learners in PA by getting them to watch videotaped interviews between some of the learners and an oral examiner. The students were shown how to assess their colleagues' video performances by using an 8-band scale. After training, learners assessed their peers' oral performance with the same rating scale, and then their ratings were compared with the examiner's marking and the teacher's marking. When the learners discussed their ratings, they were able to see why their ratings differed from those of the examiner and the teacher. They also became more aware of 'what aspects of performance the examiner was looking for' when they had to 'take a similar test at the end of the course' (Lewkowicz and Moon 1985: 64). In the following section, we will look at instruments/techniques of SA/PA used in assessment studies.

1.1.1 Techniques to Involve Learners in Assessment

In the literature, most of the studies have generally used learners' SA to inform *a general needs analysis, a tool for placement and/or diagnosis,* etc. (e.g. Munby 1978; LeBlanc and Painchaud 1985; von Elek 1985). According to Blanche's (1988) investigation into how SA is used, SA techniques vary widely, including such things as checklists (e.g. questionnaires/'can-do' statements), learners' reports on their real-life interactions, learners' diaries, retrospective SA, where learners report on their success (or lack of success) when interacting with native speakers outsides the classroom, self-ratings for specific instructional objectives, etc. However, *rating scales* with holistic descriptors are the most commonly used SA technique (Brindley 1990; North 2000). As far as PA techniques are concerned, peer review (feedback) on their writing performances, and peer evaluation sheets on their oral ones, have largely been used (Lynch 1988; Miller and Ng 1996; Ferris 2003).

1.1.2 Problems Related to Learners' Involvement in Assessment

Researchers have identified three important problems related to the implementation of SA/PA instruments in language education, concerning: (i) objectivity of evaluation, (ii) validity of SA/PA, and (iii) learner training.

Most critics of SA/PA are largely concerned about *its lack of objectivity*. It is largely believed that personal feelings are very much involved in learners' assessments (Dickinson 1987), and learners may not have the linguistic competence to assess their peers (Miller and Ng 1996). As Patri (2002: 110) claims, 'Marking is a subjective activity', and it is common to find in the literature claims of assessors over-estimating low achievers' performances (Patri 2002), and that speaking (as opposed to written) assessment is particularly subjective (Ross, 1988). Nevertheless, there are several ways to increase objectivity in assessment. For instance,

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[1] The research was conducted with a group of adults who were preparing for overseas study at the Univeristy of Hong Kong Language Centre. For further details, see Lewkowicz and Moon (1985).

some activities such as a group construction of marking criteria and group discussions among learners prior to assessing their peers' oral presentations can increase objectivity; and training and guidance in marking criteria can also be provided to learners (Freeman 1995; Orsmond 2004; Patri 2002). Bachman and Palmer (1989) argue that SA can be a valid and reliable instrument for communicative language ability, although learners who are at a lower level than their more proficient colleagues may find assessment difficult. Hence, even if these problems can be overcome, it is clear that the *manner* in which SA and PA are implemented is of vital importance.

Indeed, a number of researchers indicate that learners should be trained and have experiences to perform SA/PA procedures *accurately*. In particular, LeBlanc and Painchaud (1985) and Pierce, et al. (1993) say that SA can be a valuable and reliable indicator of language proficiency; some argue that SA cannot be reliable whereas PA can be reliable (Rolfe 1990; Miller and Ng 1996). Peer-feedback on PA may enable learners to assess their peers' performances effectively if assessment criteria are firmly set after training (Patri 2002). On this point, Brindley and Scoffield (1998) strongly suggest that SA should come first prior to PA because in that way learners can more accurately assess their peers' performances after SA experiences with a clear understanding of criteria. Some studies (e.g. Blue 1988) show SA/PA techniques are difficult for some learners to cope with; therefore, learner training should be provided for learners for the effective use of instruments (Lynch 1988; Rolfe 1990; Miller and Ng 1996; Patri 2001; Cheng and Warren 2005). Considering all the above, several concerns related to SA/PA are pointed out in the following section.

1.1.3 Issues Related to Learners' Involvement in Assessment

From the review of various SA/PA methods and related issues above, there are several points which need to be considered when conducting research on this topic. Specifically, *when* should SA/PA be carried out (at the beginning, during, or at the end of the course)? It is vital to choose the appropriate *type* of SA/PA. For instance, if rating scales are to be used, then *how should they be constructed*? And if *learner training* is an essential element in equipping learners to do SA/PA, assuming it is task-based as Wenden (1995) suggests, then *what kinds of tasks* should be included in the training? *What amount of time* (at minimum) is required for the learner training?, etc.

2 THE STUDY

Two research questions related to SA/PA were addressed: (1) To what extent can learners accurately assess their own and peers' performances of tasks in the target language? (2) How does SA/PA training improve learners' ability in appraising their own and peers' language ability?

2.1 Method

2.1.2 The Informants

8 Brazilians (3 males and 5 females) and 4 Koreans (3 males and 1 female) aged 23 to 50, who were learning English in Llanelli in Wales and who were then planning to go on to learn other languages (e.g. Arabic, Hindi, and Khmer), participated in the experiment.[2] They were all of upper-intermediate proficiency. The programme was of six months' duration (May-October 2006), and the SA/PA study was carried out from mid-September onwards for two weeks. Learners were taught by two tutors with a Teaching English as a Foreign Language

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[2] The language course mainly aimed to get the learners to the highest point of oral communication possible in the time they have, which is their priority for working in English in multinational teams and also for learning other languages in the various developing countries to which they are going.

(TEFL) qualification and six volunteer tutors (English native speakers with no qualification) whose teaching experience ranged from a few months to 25 years. However, only the two tutors with TEFL qualifications participated in the experiment.

2.1.3 Implementation of the Task-based Learner Training and Assessment Instruments
As far as the reliability of SA/PA is concerned, learners should be trained in the effective use of SA/PA instruments (Blue 1988; Davidson and Henning 1985). A fortnight's task-based training programme was conducted to minimize learners' (rating) discrepancies using the following procedures. First of all, I acted as trainer, providing the learners and the tutors with initial guidance on SA and PA, focusing on what to assess and how to assess it (i.e. with assessment instruments). Learners' conversational cassette tapes were used as initial training materials (similar to the procedure in Freeman 1995). Learners first examined Weir's speaking criteria (see Appendix 1) and discussed this with their peers to make sure they had a clear understanding of these. Then they assessed their tape-recorded conversations with native speakers of English according to the SA rating scales in Figure 1 below.

| Name: .... |
| **When you have a conversation with someone else, you have to be explicit about what it's for, what you're trying to perform, and who it's for. So in order to see how well you performed, rate yourself by circling the scale from 1 to 4.** |

Fluency	**1**	**2**	**3**	**4**
Pronunciation	**1**	**2**	**3**	**4**
Vocabulary	**1**	**2**	**3**	**4**
Accuracy	**1**	**2**	**3**	**4**
Interactional strategies	**1**	**2**	**3**	**4**

Figure 1: Self-assessment Rating Scale

Their marks were then compared with tutors' assessments (TA), and the similarities and differences between ratings were discussed. SA was conducted prior to PA during the first week (Days 2-4) as Brindley and Scoffield (1998) suggest (i.e. that SA should come before PA). When the learners were introduced to SA in the second week (Days 5-9), they assessed their peers' oral presentations with the PA scale (i.e. a 5-point Likert scale, see Appendix 2). After assessing their peers, the learners were divided into three groups to compare and discuss their ratings with each other. To see how accurately the learners were able to assess one another, the ratings done by the learners were compared with TA afterwards.

2.4 Data Collection Procedures
In the experiment, a *multi-method approach* of data collection was used such as both learners' and tutors' assessment results/scores, learners' overall evaluation questionnaire, learners' pre- and post-interviews, and tutors' interviews.

3 RESULTS

Based on the data collected, there are a number of findings as follows: first of all, three out of twelve learners had done similar tasks in the past. Secondly, five learners found it difficult to assess their own performance and seven learners had difficulty with peer-assessing. Seven learners felt that they needed more training and two learners were unsure whether further training was needed. With regard to the SA/PA exercise generally, 11 of the 12 learners said

that some of activities were useful, interesting (11 out of 12), motivating (6 out of 12), and boring (4 out of 12). Table 1 below exhibits the differences in means and correlations among learners, peer groups and tutors. The Pearson correlation efficient of S-T1 and S-T2 are 0.825 and -.021 (0.492 if one of extreme disagreement rating score is filtered out) respectively; the learner whose score differed markedly from the score of Tutor 1 had a lack of confidence in their language ability generally and in their ability to self-assess. The alpha coefficient among learners and tutors in SA is 0.911. The alpha coefficient among learner groups is 0.831 whereas the efficients of tutors and all of them are .749 and 0.920 respectively. It shows that learners agreed with one another in PA whereas there was a low-agreement in SA; the difference in means between learners and tutors indicates that tutors mostly rated learners higher than the learners rated themselves in SA.

Means (SA) (5-20) S 13.2 T1 15.3 T2 15.5			Means (PA) (0-75) G1 58.8 G2 63.3 G3 63.3 T1 61.4 T2 56.1		
Relative	S-T1	$r = .825$	Relative	G1-G2-G3	alpha = .831
	S-T2	$r = -.021 (r = 0.492)$		T1-T2	alpha = .749
	S-T1-T2	alpha = .911		G1-G2-G3-T1-T2	alpha = .920

* S:self, T: tutor, G1:group1, G2: group2, G3: group3

Table 1

Self-, peer-and tutor-correlation

4 DISCUSSION

As far as the research question '*To what extent can learners accurately access their own and peers' performances of tasks in the target language?*' is concerned, it became clear that some learners felt they lacked objectivity and confidence to self-assess, and had difficulty in identifying their own weaknesses and the weaknesses of others (e.g. pronunciation, grammar, etc.). It seemed that part of this lack of objectivity was caused by friendships when it came to PA. With regard to the question '*What effect do learners˗ SA and PA have on their ways of studying language?*', the SA activity led learners to focus on specific criteria when learning, which they reported enabled better performances. Some learners were motivated (6 out of 12) and found their own weaknesses (e.g. grammatical mistakes, pronunciation, etc.) and a (new) way to assess own language (performance) ability. For some learners, recording their own performance was a new way of learning. As far as PA is concerned, peer feedback was helpful in changing their performances. Indeed, classes became interesting so that they did not get bored (6 out of 12). Some learners pushed themselves to be better performers or to get good scores (i.e. a motivational matter). The majority said that PA was a challenging task, yet helped them improve their speaking skills.

5 CONCLUSION

The research leads to the following conclusions: (1) SA can be a new way for learners to assess their own language ability, (2) the learners were not confident in assessing their own/peers' grammatical mistakes and faulty pronunciation, especially those made by learners who were more proficient than the assessor, a finding which accords with that of Miller and Ng (1996), (3) SA/PA makes learners aware of their own weaknesses and motivates them to confront their weaknesses or achieve high marks according to criteria given to them, (4) repetition of SA/PA tasks can make learners bored, and (5) the more training that is given, the more accurate the assessment will be.

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APPENDIX 1

WEIR'S ANALYTIC SPEAKING CRITERIA
(modified from Weir 1993: 194-5)

ANALYTIC SPEAKING CRITERIA

FLUENCY

4.   Generally natural delivery, only occasional halting when searching for appropriate words/expressions.

3.   The student hesitates and repeats himself at times but can generally maintain a flow of speech, although s/he may need an occasional prompt.

2.   Speech is slow and hesitant. Maintains speech in a passive manner and needs regular prompts.

1.   The student speaks so little that no 'fluent' speech can be said to occur.

PRONUNCIATION

4.   Occasional errors of pronunciation a few inconsistencies of rhythm, intonation and pronunciation but comprehension is not impeded.

3.   Rhythm, intonation and pronunciation require more careful listening; some errors of pronunciation which may occasionally lead to incomprehension.

2.   Comprehension suffers due to frequent errors in rhythm, intonation and pronunciation.

1.   Words are unintelligible.

VOCABULARY

4.   Effective use of vocabulary for the task with few inappropriacies.

3.   For the most part, effective use of vocabulary for the task with some examples of inappropriacy.

2.   Limited use of vocabulary with frequent inappropriacies.

1.   Inappropriate and inadequate vocabulary.

GRAMMATICAL ACCURACY

4.   Very few grammatical errors evident.

3.   Some errors in use of sentence structures and grammatical forms but these do not interfere with comprehension.

2.   Speech is broken and distorted by frequent errors.

1.   Unable to construct comprehensible sentences.

INTERACTIOANL STRATEGIES

In this criterion, the term 'interactional strategies' means using strategies such as initiating the conversation, asking for clarification, expanding the topic, turn taking and concluding the conversation.

4.   Interacts effectively and readily participates and follows the conversation.

3.   Use of interactive strategies is generally adequate but at times experiences some difficulty in maintaining interaction consistently.

2.   Interaction ineffective. Can seldom develop an interaction.

1.   Understanding and interaction minimal.

APPENDIX 2

PEER-ASSESSMENT RATING SCALE
(modified from Patri 2002: 128)

Name: _____

Topic: _____

Date: _____

Rate your colleague by using the scale:

Poor	**Unsatisfactory**	**Satisfactory**	**Good**	**Excellent**
1	**2**	**3**	**4**	**5**

A. Introduction

1. Topic sentence - appropriate?   1 2 3 4 5
2. Topic sentence - interesting?   1 2 3 4 5
3. Opinion on the issue - clearly stated?   1 2 3 4 5

B. Body

4. Details supporting the main points - sufficient?   1 2 3 4 5
5. Details supporting the main points - relevant?   1 2 3 4 5
                                                                   1 2 3 4 5

C. Conclusion

6. The main points - summarised?   1 2 3 4 5

D. Language use

7. Grammar - accurate?   1 2 3 4 5
8. Fluency   1 2 3 4 5
9. Pronunciation - words clearly pronounced?   1 2 3 4 5
10. Vocabulary - appropriate?   1 2 3 4 5

E. Manner

11. Confidence (not nervous)   1 2 3 4 5
12. Confidence (depended very little on my notes)   1 2 3 4 5
13. Eye contact   1 2 3 4 5

F. Interaction

14. Non-verbal interaction with the audience (facial expressions, gestures)   1 2 3 4 5
15. Verbal interaction (involving the audience during the talk by asking   1 2 3 4 5
questions and encouraging them to respond)

The Experiencer Constraint Revisited

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This paper aims to clarify the categorial status of present participles. Based
on several empirical tests, it is claimed that not all present participles can be
adjectival. It is then suggested that the class of adjectival present participles
can be defined aspectually: only participles of stative verbs can be adjectival.
This hypothesis contradicts Brekke (1988), who suggested a thematic
constraint on the derivation of adjectival present participles: that only
participles of object-Experiencer verbs can be adjectival.

1 INTRODUCTION

Present participles exhibit properties of both verbs and adjectives. Consider (1):

(1)   (a) John is opening the door.
        (b) This is an interesting book.

In (1a), the participle *opening* is clearly a verb, assigning accusative Case. In (1b), the
participle *interesting* seems to be an adjective, modifying a noun.

Several scholars, such as Borer (1990), Parsons (1990) and Bresnan (1996) have
claimed that all present participles can function as adjectives. What led them to this
conclusion was the fact that a great number of present participles can appear prenominally, in
what is considered to be a canonical adjectival position, as seen in (2):

(2)   the interesting / amusing / jumping / crying / growing boy, a disgusting movie, a
        flourishing town, a glimmering diamond, a fitting remark, an understanding friend

However, my claim is that while some present participles indeed form true adjectives, other
participles are exclusively verbal.

The paper is organized as follows: in section 2, I will present several contexts which
discriminate between two types of present participles, suggesting that some of them are truly
adjectival, while others are not. In section 3, I will present Brekke's (1988) hypothesis
regarding the definition of the set of adjectival present participles, the Experiencer Constraint,
and the problems it raises. In section 4, I will present my own hypothesis regarding this
problem, the Stativity Constraint. Section 5 deals with the ability of all participles to appear in
the prenominal position.

2 NOT ALL PRESENT PARTICIPLES BEHAVE LIKE ADJECTIVES

In English, there are certain contexts which allow only adjectives, and not verbs. When one
tries to insert present participles into these contexts, they behave non-uniformly: some of
them can appear in them, while others cannot. The following sub-sections illustrate this
phenomenon.

2.1 Complement of *seem* and *become*

Wasow (1977) suggested that certain verbs, such as *seem* and *become*, can take as their complements only APs, and not VPs. If we look at present participles, some of them can appear as complements to such verbs (3), while others cannot (4):

(3)   (a) This movie seems interesting / amusing / depressing.
       (b) The town became flourishing.
       (c) Your remark seems fitting.
       (d) Your friend has become understanding.

(4)   *The boy seems / became jumping / crying / eating / growing / writing.

This suggests that some present participles can be adjectives, while others cannot.

2.2 –*ly* suffixation

The suffix –*ly* is a very productive adverb-forming suffix, which attaches only to adjectives, and not to verbs. Again, looking at present participles, -*ly* can attach to some of them (5), but not to others (6):

(5)   interestingly, surprisingly, excitingly, pleasingly, fittingly, lastingly, compromisingly, forgivingly, shiningly, glimmeringly…

(6)   *jumpingly, *cryingly, *eatingly, *writingly, *walkingly…

2.3 Coordination with adjectives

Since coordination can apply only to items of the same category, it is expected that adjectives will be coordinated only with other adjectives. If we consider present participles, some of them can be coordinated with adjectives (7), while others cannot (8):

(7)   (a) an interesting and beautiful girl
       (b) a long and revealing story
       (c) a clever and understanding man

(8)   (a) *a crying and beautiful girl
       (b) *a rude and jumping boy[1]

2.4 Following *so*

The modifier *so* can be followed, in most registers, only by adjectives, not by verbs. Here as well, present participles behave non-uniformly: some can follow *so* (9), while others cannot (10):

(9)   (a) This movie is so interesting / annoying.
       (b) This town is so flourishing.
       (c) Her smile is so glimmering.

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[1] It could perhaps be claimed that the sentences in (8) are ungrammatical since they involve coordination of stage-level predicates (*crying, jumping*) with individual-level ones (*beautiful, rude*). However, such coordination is not problematic when both predicates are of the same category (*an interesting and available position, a black and empty bucket*).

(10)   *This boy is so jumping / crying / eating / growing.

2.5 Appearing without a complement

The last piece of evidence that there are two different types of present participles has to do with participles of transitive verbs only. Consider the following sentences:

(11)   *The boy annoys / interests / understands.

(12)   *The boy folds / locks / tames.

The sentences in (11)-(12) are obviously ungrammatical because they contain obligatorily transitive verbs without complements. But although both the verbs in (11) and in (12) require complements, their corresponding present participles behave differently: the participles of the verbs of (11) can appear without complements, like other adjectives (as in 13), while those of (12) cannot (as seen in (14)):

(13)   the annoying / interesting / understanding boy

(14)   *the folding / locking / taming boy

To conclude this section, the contrasts presented above suggest that the class of present participles is not homogenous: some of them behave like true adjectives, while others do not.
   An obvious question at this point is: how can we define the set of adjectival present participles? In the following section I present Brekke's (1988) answer to this question.

3 BREKKE'S EXPERIENCER CONSTRAINT

3.1 The analysis

Brekke (1988) noticed the fact that only certain present participles are adjectival, and attempted to define the set of adjectival present participles. He thus suggested the *Experiencer Constraint*, which states that only verbs that have an internal Experiencer θ-role – verbs such as *surprise, amuse, amaze,* etc. - have adjectival present participles.
   Brekke's generalization can account for a substantial part of the data presented in section 2 above, since it draws a clear distinction between participles of object-Experiencer verbs (15), which were shown consistently to pass tests for adjectivalhood, and participles of verbs denoting activities or processes not involving mental states (16), which consistently fail these tests:

(15)   *amazing, amusing, interesting, boring, exciting, fascinating, intriguing...*

(16)   *jumping, crying, growing, laughing, writing, walking, drawing...*

The generalization, therefore, seems quite promising.

3.2 The problems

However, the *Experiencer Constraint* raises both a theoretical and an empirical problem.

The theoretical problem is that the analysis does not provide an explanation as to *why* it should be the case that only participles of object-Experiencer verbs can be adjectival. The *Experiencer Constraint* can be attributed neither to some property of object-Experiencer verbs, nor to some property of adjectives, and seems almost coincidental.

The empirical problem is even more disturbing. As Brekke himself notes, and as is evident from the data in section 2, there are adjectival present participles which are not derived from object-Experiencer verbs, in contrast to the predictions of the *Experiencer Constraint*. Brekke classifies these additional participles under three categories. The following characterizations and examples of these classes are his:

(17)   (a) Present participles of "disposition" verbs – verbs that describe the psychological character of a human being: compromising, condescending, cunning, daring, forgiving, knowing, loving, understanding, etc.
(b) Present participles of "impact" verbs: blazing, dashing, glimmering, glistening, sparkling, shining, etc.
(c) Present participles of "manner" verbs – verbs that describe the manner in which some event proceeds, or evaluate some psychological or social phenomenon: enduring, fitting, flourishing, lasting, telling, revealing, etc.

The participles in these classes do not correspond to object-Experiencer verbs, yet they do function as adjectives. The four verb classes: object-Experiencer, "disposition", "impact" and "manner", when looked at thematically, do not form a natural class. As Brekke notes "*There is obviously a generalization waiting to be captured here…*".

4 THE STATIVITY CONSTRAINT

Brekke's constraint on the formation of adjectival present participles was thematic. I suggest that we try to pursue a different path: looking at the aspectual properties of the relevant verbs. Since the main difference between verbs and adjectives lies in their aspectual features, this seems like a natural domain in which to look for the definition of the set of adjectival present participles.

According to the traditional "Aristotelian" classification (Vendler 1957, Dowty 1979 among many others), verbs can denote four types of eventualities: accomplishments, achievements, activities/processes, and states. Stative verbs refer to static, unchanging eventualities, which do not result in the creation, change of state or change of location of any of their participants. *Know, own* and *love* are some prototypical stative verbs.

I suggest the following constraint on the formation of adjectival present participles:

(18)   The *Stativity Constraint*
Only stative verbs have corresponding adjectival present participles.[2]

Let us see how the current hypothesis deals with the problems mentioned above with regard to the *Experiencer Constraint*.

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[2] Note that the *Stativity Constraint* provides only a necessary, and not a sufficient, condition for verbs to have an adjectival present participle counterpart. There are numerous stative verbs which do not have corresponding adjectival participles. Among these are *sit, stand, have, own, equal, resemble, reflect, mean, indicate, see, hear, taste, believe, desire*. Therefore, two possible solutions exist. One option is to show that these verbs are, for some reason, not truly stative. This can be claimed, for example, regarding *sit* and *stand*, which can appear in the progressive (and see Dowty 1979, p. 173-180). The second option is to state an additional constraint on the formation of adjectival present participles. At this point in time, I do not have an answer to this problem.

4.1 The empirical coverage of the *Stativity Constraint*

It was noted that four types of verbs consistently have corresponding adjectival present participles: object-Experiencer, "disposition", "manner" and "impact" verbs (in Brekke's terms). I claim that what is common to these verbs is that they are all stative. Let us look at each group separately.

4.1.1 Object-Experiencer verbs
It has been repeatedly suggested in the literature (Dowty 1979, Arad 1998) that object-Experiencer verbs like *interest, annoy, excite* etc., have both an eventive and a stative interpretation. In the eventive interpretation, the object undergoes a change of mental state, as in (19a). In contrast, the stative interpretation merely asserts that the object is in a specific mental state (19b) (examples from Arad 1998):

(19)   (a) Nina frightened Laura to make her go away.
         (b) John's haircut annoys Nina.

So, object-Experiencer verbs can have a stative reading. In order to establish the stativity of these verbs, we can use a test suggested in the literature. It is often noted that stative verbs are incompatible with the progressive in English (Dowty 1979, among many others). As expected, many object-Experiencer verbs cannot appear in the progressive:[3]

(20)   *The book was depressing / boring / worrying the children.

4.1.2 "Disposition" verbs
This class consists of verbs like *compromise, love, understand, know, dare,* etc. These are in fact subject-Experiencer verbs, which are traditionally classified as stative (Dowty 1979). These verbs denote the mental state of their subject, without entailing any change of state in either the subject or the object. As predicted, these verbs cannot appear in the progressive (but see footnote 3):

(21)   (a) *Max is knowing the answer.
         (b) *John is daring to do it.   (meaning: John dares to do it)

4.1.3 "Manner" verbs
This class includes verbs such as *fit, flourish, last* and *reveal*. These verbs obviously denote a property of their subject, and do not entail any change of state. In fact, it is hard to find a common property of the verbs in this group, other than their stativity. These verbs, to, are incompatible with the progressive, as seen in (22):

(22)   (a) *The shirt is fitting her.
         (b) *The war was lasting 3 years.

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[3] This test should be used carefully. First, it is generally noted that achievement verbs are also incompatible with the progressive, so incompatibility with the progressive does not entail stativity. Second, the test should not be taken as conclusive since even the most prototypical stative verbs can appear in the progressive under certain conditions (*I'm loving it*). For a discussion of the (in)compatibility of object-Experiencer verbs with the progressive, see Pesetsky (1987).

4.1.4 "Impact" verbs

This class consists of verbs such as *shine, glimmer, shimmer, sparkle* etc. (verbs of light emission, in the terminology of Levin and Rappaport Hovav 1995). As noted by Spencer and Zaretskaya (2003), these verbs could be thought of as states or as processes. I suggest that these verbs are stative, since they attribute some steady property to their subject. In order to reinforce this intuition, we can use a test suggested by Kenny (1963). Kenny notes that in the present tense, sentences with dynamic verbs have a frequentative interpretation – they are understood as involving more than one event (23a). On the other hand, sentences with stative verbs do not have this interpretation (23b).

(23)   (a) John runs.
          (b) John knows the answer.

Let us now look at "impact" verbs:

(24)   (a) The diamond shines.
          (b) The water sparkles.

The interpretation of the sentences in (24) does not seem to be habitual, or involve more than one event. This fact lends support to the suggestion that Brekke's "impact" verbs are stative as well.

It seems, then, that the common feature of object-Experiencer, "disposition", "manner" and "impact" verbs is that they are all stative. These verbs therefore form an aspectual natural class.

4.2 The theoretical rationale of the Stativity Constraint

As mentioned above, the theoretical problem with Brekke's *Experiencer Constraint* is that it does not provide an explanation as to *why* it should be that only object-Experiencer verbs have corresponding adjectival present participles. The stativity constraint can, in my opinion, provide such an explanation.

As noted at the beginning of this section, verbs denote different types of eventualities; adjectives, on the other hand, invariably denote states (see, for example, Parsons 1990). The *Stativity Constraint* suggests that *–ing* is the "simplest" adjectival morpheme - it only marks the categorial change from verb to adjective, and is incapable of any aspectual manipulation of the input. Therefore, it can only take as its input stative verbs, since they are the only verbs which denote states to begin with, and can therefore derive adjectives without any aspectual change.

The *Stativity Constraint* is therefore very intuitive: adjectives denote states; stative verbs denote states as well; therefore, stative verbs are the natural input for an operation which derives adjectives.

5 THE PRENOMINAL POSITION

According to the *Stativity Constraint,* not all present participles are adjectives. Participles such as *jumping, crying* etc., which are related to dynamic verbs, are argued by the hypothesis not to be adjectival. If this is the case, however, how can these participles appear prenominally, in an adjectival position, as in (25)?

(25)   a jumping / crying / growing / eating / writing / walking boy

I suggest that in (25), what is appearing in prenominal position is reduced relative clauses. Reduced relatives in English contain neither overt complementizers nor auxiliaries. Therefore, the reduced relatives in (25) consist solely of a participle.

The idea that reduced relative clauses are base-generated to the left of the head they modify is not inconceivable: this is the base position for modifying adjectives, and could therefore be a base position for other modifying elements as well.

In addition, the assumption that reduced relatives are generated prenominally solves another puzzle: it is a well-known phenomenon that post-nominal reduced relatives must contain some material in addition to the participle, as exemplified in (26):

(26)   (a) ??The boy jumping is my cousin.
          (b) The boy jumping in the yard is my cousin.

Currently, the theory suggests no obvious account for these facts. Possibly, one would have to postulate an ad-hoc rule which filters out one-word reduced relatives, or moves them to the left of the head they modify. Such a rule is not needed anywhere else in the grammar.

Let us examine, however, the consequences of assuming that reduced relatives are base-generated prenominally. The original structures of the sentences in (26) will be those in (27):

(27)   (a) The [jumping] boy is my cousin.
          (b) *The [jumping in the yard] boy is my cousin.

(27a) is grammatical, and nothing more needs to be said about it. (27b), however, violates a very well-known constraint: the adjacency requirement between a modified head and the head of the phrase modifying it (see Grosu and Horvath 2006, and references cited therein). This requirement, though not fully understood, is robust, and can be seen in different constructions, not involving participles (28a). When the head-adjacency requirement in such constructions is violated, the structure can be "salvaged" by extraposition of the AP (28b):

(28)   (a) *a [taller than the boy] girl
          (b) a girl [taller than the boy]

Turning back to the reduced relative in (27b), repeated in (29a), it too violates the head-adjacency requirement, and is predicted to undergo extraposition. This operation will result in the grammatical (29b):

(29)   (a) *the [jumping in the yard] boy
          (b) the boy [jumping in the yard]

Hence, the assumption that *jumping, crying* etc. in (25) above are reduced relative clauses, and not adjectives, has two advantages: first, it accounts for the fact that these participles cannot appear in any adjectival context other than the prenominal one. Second, it accounts, together with the established adjacency constraint, for the distribution of pre- and post-nominal reduced relative clauses, without stipulating another rule which bans one-word post-nominal relatives.

6 CONCLUSION

This paper has aimed to clarify the categorial status of present participles. I began by showing that although many present participles appear in the prenominal position, and were therefore considered to be adjectives, other adjectival contexts discriminate between different present

participles: some can appear in them, while others cannot. I presented Brekke's (1988) attempt to define the set of adjectival present participles, *the Experiencer Constraint*, and showed that this generalization is inadequate both empirically and theoretically. I then suggested the *Stativity Constraint*, which states that only stative verbs have corresponding adjectival present participles. This constraint has two advantages over Brekke's: first, it accounts for more empirical data – it explains the adjectival status of more participles. Second, it is more explanatory, since it relies on the common semantic properties of stative verbs and adjectives. Finally, I showed that the ability of all present participles to appear prenominally is not counter-evidence to my analysis, since these participles are best analyzed as reduced relative clauses.

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Language Standardization and the Print Culture in 16th Century Italy*

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This paper discusses the emergence of the linguistic standard in the 16th century Italy, in response to the rapid diffusion of printing. It examines the prescriptive influence of printing on the selection of linguistic standard in the Cinquecento (2), and looks at how strict the motivation of this standard was in print (3). It stresses the central role of the *correttore* (the copy-editor in the modern sense) in the process of linguistic administration of the printed text, and discusses the editor's revision in the process of establishing of the text, focussing on the testimonies from Girolamo Ruscelli's *I fiori delle rime de' poeti illustri* (Venice, 1558) and Iacopo Sansovino's *Lettere sopra le diece giornate del Decamerone* (Venice, 1542). It concludes that the created language of the printed book, overall, did not correspond to the language of the original author, or fully to the language of the *correttore*, but that it can be best described as an autonomous and substantially *other* language, which tolerated linguistic variation and divergence to a very high degree.

1 PRINT CULTURE AND LANGUAGE STANDARDIZATION IN RENAISSANCE ITALY

Standardization of the *volgare* in Italy, seen as an establishment of its autonomous and legitimate identity distinct from Latin and its functional elaboration (a movement form *Abstand* to *Ausbau* status, in Kloss's 1967 terms), takes place together with the rapid spread of printing through a commercially complex distribution network in the peninsula, and subsequent enthusiasm for vernacular learning.[1] Authors note that printing in Italy, which probably produced and sold more books than any other country in the 15th/ 16th centuries,[2] is directly responsible for the production and transmission of the vernacular linguistic standard in the domain of orthography, morphology, syntax and lexicon.[3]

The central figure in the process of linguistic administration of the printed text was that of a *correttore*, or a copy-editor in the modern sense, who goes line after line, page after page through the text in order to secure the compatibility of the text with its intended audience (cf. Quondam 1983; Trovato 1991, Hirsch 1974: 58-60; and Richardson 1994: 42). Despite the fact

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[1] Cf. Hirsch (1974), and Steinberg (1955). It is perhaps paradoxical that the diffusion of print also spurred interest in humanistic learning: it will suffice to mention the Aldine classical editions in Venice alone (cf. Lowry 1979).The ideological separation of Latin and the vernacular on two distinct planes was, as Faithful (1953: 284) observes, primarily due to the 'recognition of the suitability of the *volgare* for literary expression,' and it belonged to the first half of the fifteenth century, despite continuous Latin influence on the orthography, syntax and vocabulary of the vernacular.

[2] This is Grendler's (1977: 3, 8-9) estimation despite the lack of enough statistical data for a consensus; it primarily refers to the Venetian press, which had become the largest in Europe by the end of the incunabular period (cf. Hirsch 1974: 58-60), establishing supremacy in Italy (over Rome, Milan, Florence and Naples) and even over northern rivals, such as Lyons, Paris and Basel.

[3] Cf., e.g., Migliorini (1960) and Vitale (1987).

that their employment was a potential source of expense and delay in the reproduction of a manuscript, the sixteenth century saw a steady increase in the importance of the editor of the vernacular text, who projected an image of linguistic accuracy of the text, and whose main task was to consolidate the language of the text according to the rhetorical/ linguistic ideals, as well as economy and market considerations.

2 SELECTING THE LINGUISTIC STANDARD IN THE EARLY AGE OF PRINT

The Trecento Tuscan linguistic norm, as used by Boccaccio and Petrarch, is said to have been reinforced by the new pressures and opportunities of the print culture at the end of fifteenth and in sixteenth century italy for the purpose of achieving linguistic standard at a supraregional level.[4] The 1504 Sebastiano Manilio's edition of the *Porretane* by Bolognese Sabadino degli Arienti (published in Venice by Bartolomeo de Zanni) is probably the first attestation of a heavy and apparently deliberate tuscanization outside Florence. Ariosto's *Orlando Furioso* from 1532 and Giovan Francesco Valier's 1528 edition of Castiglione's *Cortegiano*, (whose authors were both from Padua), illustrate this editorial practice with the consistent replacement of the native (particularly morphophonological) features with those of literary Tuscan (cf. Ghinassi 1961), and the *Canzoniere* of Lorenzo Spirito reveals a similar type of editorial censorship, conducted in Perugia between 1525 and 1526 (cf. Baldelli 1951).

However, it is questionable whether the Trecento Tuscan norm, promulgated by writers' and editors' endeavours, concerned language, rather than expression, and whether the Trecento Tuscan norm can be defined in any terms other than rhetorical. For Pietro Bembo, for example, who is widely considered as one of the most peremptory Renaissance intellectuals on all matters concerning the vernacular,[5] language lives only in its literature, and the qualitative distinction between speech and writing is made solely on rhetorical and literary grounds.[6]

Thus, grammars and stylistic catalogues of Trecento Tuscan which aimed at bringing the Tuscan classics within reach of a new class of aspiring readers and users of the language (e.g. Liburnio's *Le vulgari elegantie* 1521, Moreto's 1528 *Rimario de tutte le cadentie di Dante e Petrarca*, Bembo's 1525 *Prose della volgar lingua*, Bartoli's 1584 account of Tuscan phonology *Degli elementi del parlar toscano*) consistently fail to provide normative definitions of the vernacular linguistic norm, providing only the descriptive, stylistic guidance in the *volgare*. Rather, they tend to advocate not just passive acceptance of the Trecento Tuscan model, but also propose a striving to surpass it through an individual effort of the imitator, thus leaving room for a certain subjectivity, a dynamic dimension which is not subjected to any effort for improvement. The exclusive domain of the new standard norms is an autonomous written language, and its norms are overwhelmingly rhetorical (cf., e.g., Book II of the Bembo's *Prose*). Their influence, together with that of the growing interest in poetics, ensures that the only application of the Trecento Tuscan norms is for the purpose of the perfection of literary style: the choice and order of words in the best style – that of Petrarch and Boccaccio – is made over and above the rules of, say, syntactic construction, according to the stylistic, melodic criterion of gracefulness

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[4] Cf. Febvre & Martin (1958: 367-383), Migliorini (1960: 372-378), and Stoppelli (1981: 25).

[5] Cf. Manni (1994: 332), and Padley (1988: 56-57).

[6] This is a somewhat simplified version of Bembo's stance, proclaimed in his *Prose della volgar lingua* (1525), on which I cannot elaborate due to space limitations. It will suffice to say that Bembo's system of combination of *imitatio* and *aemulatio* of the Trecento Tuscan, proposed in the more determinately grammatical section of the *Prose* (Book 3), provides the basis for the flexibility of the *stylistic* norm which, however much it may be absent in the works of Bembo's followers, is certainly present in his own system. For more information on Bembo's treatment of the Trecento Tuscan norm, v. Patota (1993: 107), and Izzo (1982: 336).

(*vaghezza*), in which the main arbiter is the 'giudizio degli orecchi', or the artistic effect on the hearer. As the century goes on rhetoric (in the Ciceronian sense) becomes the unifying principle, at least in theory, of the whole culture (cf. Fumaroli, 1980: 42).

Thus, with the lack of consensus of what constituted the Trecento Tuscan standard at a *linguistic* level, problems with editing and adapting the vernacular texts to the Trecento Tuscan emerged. In addition, majority of the presses in Italy had a distinct interregional character, with the emphasis on producing books in quantity for a wide readership, and attracting editors from a variety of geographical, hence also linguistic, backgrounds.[7] This mixture in terms of geographical background, as well as market considerations, may have made it easier for editors to tend to accept the principle of a norm consensus, i.e. a more neutral linguistic norm, or, may have induced, at best, passivity in imitation of the linguistic initiatives brought about in other centres. These factors facilitated the emergence of a gradual tendency across the peninsula to strike a balance between the Trecento Tuscan norm and the host dialects, with Trecento Tuscan penetrating at a slower pace the works of a more popular or practical nature. Thus, the diffusion of literacy among medium-low social classes (work force, sellers, artisans) in other parts of Italy had created a textual typology, and production characteristics which reflected substantially less the linguistic model of the Trecento Tuscan, and much more a tendency to 'deterritorializzarsi, deregionalizzarsi' ('de-territorialize, de-regionalize', Quondam 1983: 671). Thus, there continues to exist a significant uncertainty, almost hesitation, in the application of distinctly Tuscan features, such as diphthong [wɔ] in open stressed syllables, consonantal assimilation, and so on, allowing thus the texts to have at times a distinct diatopic and diaphasic colouring.

The emergent linguistic standards in the printing industry, identified as bundles of linguistic features to which the text in print ought to adhere to, can be identified as the following tendencies of norm consensus (as defined by Ferguson 1988: 119-133): (1) koineization, representing the reduction of dialect differences either by silent levelling, i.e. avoidance of salient features of particular dialects, or simplification, i.e. reduction in inventory – typical of Venetian Cinquenceto printing, as well as Florentine printing roughly between 1530-60; and (2) variety shifting, referring to adoption of specific linguistic features characteristic of particular social groups, or registers – characteristic of Florentine printing in the fist half of the 16th century.

2.1 Koineization[8]

This tendency is the most characteristic of Venice, which supplied more than 50% of the Italian book market,[9] and whose presses continued to adopt a more or less strong northern linguistic colouring as a search for supremacy at an interregional market. It appears that the editor could sacrifice many aspects of the original in order to produce a text which would be easier to understand, particularly in northern Italy: cf. the Venetian treatment of a southern text, *Novellino*, published in 1484 by Battista de Torti, which departed from the Neapolitan edition on which it was based, consistently and, it appears, deliberately. Most of the changes were intended to make

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[7] Cf. the largest and most prolific printing industry in Italy, that of Venice, whose editors came from Veneto, Lombardy, Piedmont, Tuscany, the Marche and Campania; for more information, v. Quondam (1983: 664).

[8] Koineization as a means of achieving supraregional linguistic uniformity has been diagnosed for Italian conditions from the earliest times. Berruto (1987), Sanga (1990) and supporters Durante, Mussafia, Bartoli, Salvioni, and Vidossi discuss the question of *koinè* formation in the context of dialect convergence at a very confined, supraregional northern area. Against the idea of koineization are Ascoli, Contini, and Grignani.

[9] Of the over 8,000 surviving editions of incunabula printed in Italy, it has been estimated that about a half were printed in Venice, with only 1% of Italians living in the city of Venice (cf. Richardson 1994: 39, and Hirsch 1974: 58-59).

the text more comprehensible to the readers who were not from southern Italy, by introducing Tuscan forms, replacing forms which felt to be southern regional ones with either those acceptable to Tuscans, or their northern, even more local, equivalents. Furthermore, Tuscan works, of, for example, *tre corone*, were subjected to linguistic koineization (cf., e.g., the Venetian *Commedia* of 1478, edited by C. Lucius Laelius, which decisively shows a series of attempts to de-tuscanize the text according to the editor's humanist and regional preferences; cf. Richardson 1994: 38).

2.2 Variety shifting

This tendency is characteristic of Florentine publishing in the early 16th century, and can be conceptualised as a harmonization of the spoken and written language through a consensus between Trecento Tuscan conservatism and regularization that is based on the *contemporary* Florentine *spoken* norm. Removing the traces of non-Florentine phonology, morphology and syntax was a well-known strategy: e.g. the 1508 edition of Bernardo Pacini's *Falconetto*, published by 'Zuanne Bonacorso', using a previously published Venetian version, (cf. Richardson 1994: 213). Secondly, bringing of some forms which reflected, linguistically and stylistically, the Trecento Tuscan more in line with contemporary spoken Florentine was commonly used: cf. Bernardo Zucchetta's 1510 printing of Lodovico Ariosto's *La Cassaria* and *I suppositi* without author's consent (cf. also Richardson 1994: 79-80)! Editorial interventions of this kind could apply to the content of the text, and in the structure of the work as a whole (cf. 1516's edition of *Motti et facetie* of Piovano Arlotto, by the same Zucchetta, as well as the aforementioned 1508 *Falconetto*).

The reason for this editorial practice could be rivalry with Venice, and in particular Pietro Bembo's doctrine reiterated in his *Prose* (1.16) that it was no longer considered an advantage to be born Florentine if one wanted to write Florentine well. Here the influence of the tastes of local readers was reinforced by a strongly patriotic conviction that living Florentine was in no way inferior to the Trecento variety which was being imitated in other centres.

3 ELABORATION OF LINGUISTIC STANDARD IN PRINT

More complex is the question of the contributions made by the editors during the Renaissance to the elaboration of the vernacular of the printed book. Girolamo Ruscelli in his *I fiori delle rime de' poeti illustri* (Venice, 1558: 605-6) offers a valuable insight into editorial practice:

'*Si* per *ci* è proprio della lingua lombarda. Onde perché i lavoranti delle stamperie sono la piú parte di questi tali, [quando lavorano (che essi dicono comporre)], se ben l'autore ha scritto bene e toscanamente, essi, prendendo o tutto o mezzo il verso a memoria, se lo ricordano secondo che loro detta la nativa e continuata favella loro, e non come una volta sola l'abbiano veduto cosí incorso nello scritto dell'autore. E poi quelli che correggono, o sono di quei medesimi anch'essi, e non lo hanno e non conoscono per errore, o è come impossibile che possano in una volta sola vedere e corregger tutti gli errori che in gran copia ne sono spesso nelle stampe che si dànno a correggere, essendo questo pessimo uso fra gli stampatori di qui, che una sola volta dànno a corregger la stampa…

Senza che un'altra virtú è in molti degli stampatori, che mandano a correggere il foglio il qual s'ha da tirare, e fra tanto essi tirano e lavorano, e quando poi viene il foglio indietro corretto dal correttore o dall'autor proprio, si truova restarsi da tirare alcuni fogli e quei pochi si correggono. Il che tutto nasce perché in effetto i poveri lavoranti cosí dalle casse con le lettere come al torcolo hanno troppo lavoro ordinario da fare il giorno, che ogni minimo perdimento di tempo o ogni minimo sconcio di molti nelle stampe ne caggiono di continuo, è cagione di molto danno loro.'[10]

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[10] I only paraphrase: 'Si for ci is a from a Lombard variety, because the majority of workers in the press are from there. They learn by heart either a half or the whole of the text, and remember it according to their own native tongue

This passage raises a central question of what constituted an 'error' in printing, and against which standard was something to be judged as an error, but also why these 'errors' occur. As the overwhelming majority of the *correttori* was in fact non-Florentine, usually from Brescia, Bergamo, Piedmont, and Venice, their work carried a very high probability of producing a language of the book which represented a mixture of the native linguistic habits of the *correttori* and the features of the author's original, with the risk of the language departing from the original version to a very high extent. The lack of time (precision) in preparing an edition, and usual lack of editor's involvement in the proof-reading phase contributed to this. One must remember that printers could be producing more than one work concurrently on their presses, so that there might be pauses in the production of a book, while 'the separation of the spheres of influence, combined with the rapidity with which the composition of type and imposition were followed by printing, could well mean that the editor was not involved in proof-correction.'[11] This could account for the partially corrected pieces, or published pieces which despite editing still contained mistakes in the final printed version. Thus, editorial disclaimers, as a defensive strategy of avoiding responsibility for any potential mistakes in the print on the part of the *correttore*, were very common in the Cinquecento (cf., e.g., an anonymous 1492 edition of Landino's *Formulario di lettere e di orationi volgare*, and Pre' Marsilio's 1513 edition of Petrarch).

However, more complex is the question of the susceptibility of editorial interventions to the pervasive influence of contemporary aesthetic assumptions, since to what aesthetic principles the editors had adhered is an area of much subjective interpretation. There appears to be a strong tendency throughout the period for the process of establishing the text to be dominated by the arbitrary revision, with editor's involvement in restoring an edition to what in editor's intent was its original, pristine form being generally based on his own ideal of language and style: cf. Francesco Alfieri's editions of Petrarch in the early Cinquecento, or the work of Lucio Paolo Rosello, Cassidoro Ticinese and Tizzone Gaetano in the 1520, whose own linguistic norms were dictating the norms of the texts.[12] At the bottom of the 1542 edition of his *Lettere sopra le diece giornate del Decamerone*, Iacopo Sansovino clarifies:

> 'Appena, o benigni lettori, s'era incominciato a imprimer la presente fatica, quando per alcune mie bisogne mi convenne partir di Vinegia, laonde havendo lasciato la cosa in abbandono, fu di mestiero al padrone, a ch'io la haveva donata, trovar chi correggendo la desse alla luce come ella era stata da me scritta, et perché egli era molto amico d'un certo Fiorentino, non sapendo ch'egli mi fusse occulto inimico, gli diede il carco delle correttioni. Egli o per malvagio pensiero ch'egli habbia, o pur perché non s'intenda altrimenti della lingua Toscana, accetando l'impresa, in sí fatta maniera l'ha acconcia ch'ella non è piú la prima ch'io feci et quasi non la riconosco piú per figliuola, anzi come straniera l'ammiro, et meco medesimo contemplo il malvagio animo di cotal Fiorentino […].'[13]

as they work, not according to the original version written by the author, despite the fact that the author may have written well, and in the Tuscan variety. The editors are either the same people, and they therefore cannot detect a mistake which they made themselves, or it is impossible for the editors to see and correct all the mistakes they abundantly find in an edition because there is a single editing phase. When the printers send a page for editing, the printing however goes on, and much of the material remains uncorrected. This is because the poor workers have so much work on their shoulders that any waste of time causes too much damage.'

[11] Richardson (1994: 10).

[12] Fore more information, v. Richardson (1994: 57, 75-8).

[13] I paraphrase: 'Only just had the printing of my work begun, dear readers, when I had to leave for Venice for my own reasons, […] only to find that whoever was in charge of editing the work I had written gave it to a certain Florentine to conduct the same job because they were very close friends, not knowing that the Florentine in question was one of my greatest enemies. This Florentine, either because of his wicked intent, or because he did not understand Tuscan I had written, arranged it in such a way that it is no longer the same work I had written, and I no longer recognise it as my child, but admire it as something I had never seen before, and wonder about the wicked character of this Florentine.'

This is an indispensable insight into Renaissance concepts of subjective censorship and self-censorship, indicated by the use of the terms 'lingua toscana' and 'lingua fiorentina'. Namely, Sansovino, a Roman by birth, reveals a high degree of auto-censorship, a conscious effort into making the text sound 'toscano', through stripping away of all regional particularities of his native *volgare*, just to be subjected to the type of the editorial censorship which made the produced language no longer resemble that of the original, probably due to a private rivalry (!). Editors could surround their text with so many trappings that the volume could become dominated by their own views and tastes, even by their personality, and there are numerous attestations of this phenomenon in the High Renaissance.[14] This is an area of much subjective interpretation, and the conditions under which this type of editorial emendations occurs are too chaotic to be subdued to decisive rules or generalizations.

4 CONCLUSION

From a linguistic point of view, it is difficult to argue that the language standardization which takes place in response to the diffusion of printing in the 16th century Italy assumes the centrality of the uncompromising insistence on a single standard norm (the Trecento Tuscan of Boccaccio and Petrarch). Rather, as literacy is gradually diffused through diverse social groups and geographical areas, and economy and market interests increase, the standard becomes more abstract, and should be viewed as an outcome of a consolidation of different linguistic features, permitting thus more variability and divergence from the Trecento Tuscan. Furthermore, the assumed centrality of the *correttori* in the process of the establishing of the printed text makes the linguistic and stylistic standard susceptible to much arbitrary and subjective interpretation. Thus, it appears that language of the printed book did not correspond to the language of the original author, or fully to the language of the *correttore*, who was in charge of its linguistic administration, but that it can be best described as an autonomous and substantially *other* language. The factors I outlined in this paper (lack of linguistic, as opposed to rhetorical, definition of the literary model, as well as editors' native linguistic habits and arbitrary revisions), therefore, encouraged a feeling that a printed work was not to be taken as something definitive.

Such comments show that the early print culture in Italy did not introduce suddenly the 'sense of closure' or finality, which, as Walter Ong has suggested (1982: 132-135 – Orality and literacy), it encouraged in the long term; rather, the situation can be at best described as chaotic, in which variation was, overall, too minor to matter, and in which linguistic variation and inconsistency were much more tolerated than has been acknowledged in the literature.

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[14] E.g., Bernardo Pacini's 1508 edition of already mentioned *Falconetto*, published by 'Zuanne Bonacorso' (cf. Richardson 1994: 80-81); Remigio Nannini's 1560 edition of Antonio Cornazzano's *Vita di Pietro Avogardo*, published by Francesco Portonari (cf. Richardson 1994: 125); and Tomaso Porcacchi's edition of the *Historia di Milano* of Bernardino Corio, published for Giorgio Cavalli in 1565 (cf. Richardson 1994: 152-153).

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A Systems Model of Language Planning

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A Systems Thinking (ST) approach to language planning has not yet been addressed in the corpus of language planning literature. ST encourages the study of a language, understanding that its corpus, status and acquisition are interconnected. ST allows us to gain a better understanding of the complexities of language planning by creating a visual model reflecting the interrelationships within and among aspects of language vitality. There are two immediate benefits to bringing an ST approach to language planning theory. First, this approach allows for the assimilation and incorporation of hypotheses and principles from the field's forerunners into one qualitative model of language planning that uses consistent graphical language. Second, the ST approach allows for the creation of a model for language planning that is flexible and broadly applicable. ST can negate placing any one area of language vitality in a position of privilege by suggesting that each area in which a language functions is only one part of a metasystem.

1 WHAT IS LANGUAGE PLANNING?

Language planning (LP) is widely regarded as an area of overlap between applied and sociolinguistics. It is an area of study in which the researcher seeks to identify activity that would exert influence over the prevalence of a language. When the language being discussed by language planners is unspecified, as is the case of theoretical work in LP, we talk about LP for language X (Xish). The three areas that are traditionally addressed in language planning research are: status, corpus and acquisition (Kloss, 1967; Prator cited in Cooper, 1989). This tripartite of LP identifies broad categories through which LP activity can be initiated and is the foundation upon which subsequent LP research has been conducted, including the systems model of LP presented here. Any discussion of LP should begin with a clear articulation of this tripartite, but a systems approach will emphasize the interconnectivity of these three broad categories of LP.

1.1 Status planning

The term 'status planning' refers to any LP activity that focuses on changing the external functions and perceptions of Xish. Common subcategories through which status planning interventions operate are political status, economic uses, and cultural functions. This kind of LP does not immediately change the number of people using Xish, but changes the environment in which the language may be used in an effort to encourage or discourage language use. Additionally, we might consider that the mediums through which this LP activity manifests affect several aspects in which status planning operates. For example, we might consider how interventions in Xish entertainment mediums influence cultural and economic factors in unison by broadcasting images of Xish users, while creating jobs in the Xish language.

1.2 Corpus planning

The term 'corpus planning' refers to LP activity that focuses on changing the internal properties of Xish in order to influence its vitality. Corpus planning commonly refers to interventions aimed at the orthography, grammar, phonology and vocabulary of Xish. The two most readily identifiable examples of corpus planning are modernization and standardization. Such corpus planning is thought to aid in the LP process because we inevitably change how Xish users are able to function with their language when we alter its corpus through LP activity. It can therefore be said that corpus planning has direct repercussions on aspects of status (Haarmann, 1990).

1.3 Acquisition planning

The term 'acquisition planning' refers to LP activity that focuses on the transmission of Xish to non-users and to non-fluent users. This acquisition may occur inter-generationally or socially, but we should consider that LP activity may have more avenues for intervention in the public domain (i.e. through a formal education system). Literacy development initiatives, like the creation of educational materials, as well as issues of provision, like teacher training and classroom housing, are all concerns of acquisition planning. Acquisition has a clear and immediate impact on the vitality of Xish because it supports the learning of the language, but this area may also have an influence on the status of the language as it can alter the visibility of the language.

2 WHY DO WE NEED LANGUAGE PLANNING?

We have now considered the three main avenues for LP activity, paying heed to the interconnectivity of these areas. However, the need for LP has not yet been demonstrated. When the prevalence of one group of language users in a diverse language community is greater or lesser than desired, LP can be undertaken to alter this prevalence towards a stipulated goal. LP can occur either negatively or positively, depending on whether Xish prevalence is higher or lower than this stipulated goal. The systems model of LP presented here is able to account for both positive and negative LP because it identifies that a disparity variable (the disparity between the desired and actual proportion of Xish users) directly influences the balance of positive or negative LP activity. When the disparity value increases, more LP activities must be enacted to help adjust the actual population of Xish users toward a goal state that will lessen the disparity variable. The two modes through which LP operates, positive and negative, will be presented with attention being paid not only to how we determine which kind of activity is needed, but also to what kinds of repercussions LP activity in each mode might expect.

2.1 Positive language planning

Positive LP is the term used to identify any LP activity which aims to increase and/or sustain the prevalence of a language. Examples of nation-states that are currently engaging in positive LP include: Ireland (for Irish), and Canada (for French). We often talk about positive LP in relation to reversing language shift (Fishman, 1991), which is a specific kind of positive LP that focuses on languages that have lost their former vitality. Positive LP frequently aims to keep a minority or endangered language from falling into disuse and/or extinction, but it can also be enacted for majority languages in order to secure continued strength. Positive LP will generally attempt to increase the status and acquisition of Xish. This kind of LP may also use

corpus planning alongside status and acquisition activities, as a means of achieving the stipulated prevalence goal.

2.2 Negative language planning

Negative LP is the term used to identify any LP activity which aims to decrease the prevalence of Xish. Examples of nation-states that have previously engaged in negative LP include: the United Kingdom (against Celtic languages), and Canada (against Aboriginal languages). We often talk about negative LP in relation to the suppression of a minority language by a majority language group, but negative LP may also be enacted in coordination with positive LP efforts in order to couple the strengthening of a minority language with the weakening of a majority language. Negative LP will generally attempt to decrease the status and acquisition of Xish. Corpus planning is of less concern to negative LP than to positive, but again could conceivably be enacted in coordination with other kinds of LP activity in order to achieve the goal of lessening Xish prevalence.
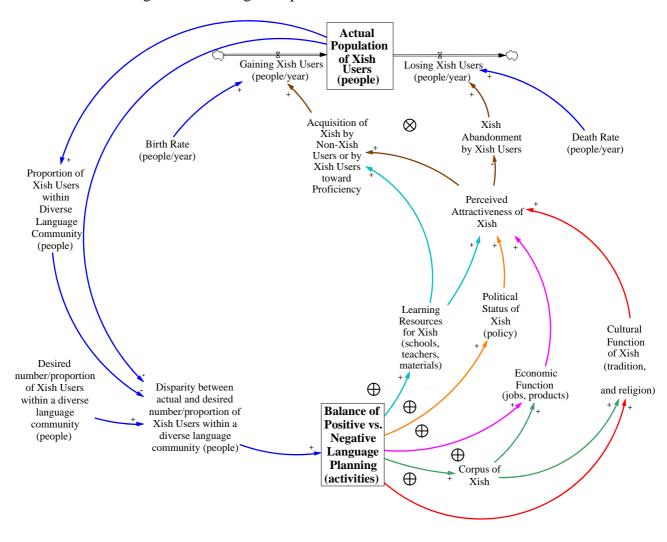
Figure 1

A Systems Model of Language Planning

3 A NEW APPROACH TO LANGUAGE PLANNING

Thus far the tripartite areas of LP have been presented, with emphasis being placed on their interconnectivity. The general modes of LP activity, either negative or positive, have also been explained. The next subject to be presented, before an examination of the LP model is provided, is the Systems Thinking (ST) approach itself. ST is a way of thinking about phenomena—social, biological, or other—that places consistent emphasis on the relationships between variables. An ST approach to LP has not yet been incorporated into LP literature, but facilitates the creation of a comprehensive and cumulative model of positive and negative LP. In other words, the ST approach to LP has allowed the creation of the systems model of LP presented here because it is a methodology that embraces external influences.

The systems model of LP presented in this paper (see Figure 1) incorporates the traditional tripartite structure of LP activity and demonstrates both positive and negative LP initiatives. As has been discussed, the model determines the need for positive or negative LP activities by tallying the disparity between actual and desired population (or proportion) of Xish users within a diverse language community. In order to influence the actual population of Xish users, however, LP activities must influence the number of people acquiring and abandoning Xish. This influence can be direct or indirect. Indirect influences on acquisition and abandonment will first adjust the perceived attractiveness of Xish before influencing other variables. Whether directly or indirectly, the influence of LP activity on acquisition and abandonment must first manipulate intermediary variables: learning resources, political status, economic functions, corpus, and/or cultural functions. The success of LP activities, as presented in this model, is calculated by monitoring the extent to which interventions aimed at controlling acquisition or abandonment have influenced the actual population of Xish users.

3.1 Learning resources

Previously considered a concern of acquisition planning, learning resources that are promoted or discouraged through LP activity have a direct impact upon the acquisition of Xish by non-Xish users or by Xish users who are developing proficiency. Learning resources also influence acquisition and abandonment through the intermediary variable 'perceived attractiveness'.

3.2 Political status

A subset of status planning, the political status afforded to Xish directly influences the attractiveness with which Xish is perceived. LP activity that manipulates political status affects Xish acquisition and abandonment only after having altered the perception of the language.

3.3 Economic functions

The economic functions of Xish, which were previously a concern of status planning, alter the perceived attractiveness of the language. Employment through Xish, consumerism in Xish, and the use of Xish in an international market are all factors included in this economic variable. LP activity can manipulate economic functions of Xish in order to change its prevalence. As with political status, economic functions only affect Xish acquisition and abandonment after having altered the perceived attractiveness of the language.

3.4 Corpus

Directly coordinating with corpus planning, as described in the original tripartite of LP, the corpus variable in this systems model of LP acknowledges that LP activity may alter the actual orthography, grammar, phonology, and vocabulary of Xish. Such changes in corpus, however, must have an impact upon the way in which the language is used (markers of status) before influencing the perceived attractiveness of Xish or its acquisition and abandonment.

3.5 Cultural functions

A subset of status planning, the cultural functions of Xish change the way in which the language is perceived. When LP activity changes the cultural function of Xish (whether ethnic, religious or other), these changes do not directly impact the number of people abandoning or acquiring the language. Instead, and as with political status and economic functions, these cultural manipulations have ramifications upon the perceived attractiveness of the language and this, in turn, alters the actual population using Xish.

4 TIME DELAYS IN LANGUAGE PLANNING

Change is not immediate. Particularly in the case of language use and acquisition, language planners must be aware that changes in Xish prevalence may take years or generations before manifesting. There are time delays between the initiation of an intervention (LP activity) and the response to that intervention by a corresponding variable (ultimately the actual population of Xish users).

5 SYMBOLS IN THE MODEL

The following systems model of LP consists of 10 parts: stocks, flows, clouds, valves, variables, causal links, positive polarity identifiers, negative polarity identifiers, goal-seeking loop identifiers and reinforcing loop identifiers.

5.1 Stocks

A stock, in systems modeling, is the accumulation of tangible or intangible things within a system. In this model, there is only one stock and it is bordered by a single-line rectangle. This stock is the actual population of Xish users and it is measured in people. We discuss the state of the LP system by calculating the level of this stock. To determine the efficacy of LP interventions we will need to compare stock values at an initial time point against subsequent measures.

5.2 Flows

A flow indicates movement of matter in and out of a stock according to the direction of its arrowhead. Flows are illustrated as straight double lines and represent the means and rates at which stock quantities alter. In this model, one flow demonstrates the increase in Xish users, while a second depicts the decrease in Xish users. As with the model's stock, these flows must be measured in people, but with attention also being paid to time. Movement in and out of a stock through these flows must be measured in intervals and discussed in terms of rates.

5.3 Clouds

Clouds are symbols connected to flows that indicate that the precise source or means of departure for a stock is beyond the concern of the model.

5.4 Valves

Valves, which look like small hour glasses, lie along the path of flows and indicate the means by which and the rates at which stock quantities alter. In this model we can see that four variables: birth rate, acquisition of Xish, Xish abandonment, and death rate are all variables which directly influence valves controlling the flow of people in and out of the actual population stock.

5.5 Variables

Variables are any aspects that influence a rate of flow, like 'corpus' or even the 'balance of positive vs. negative LP' activity itself. In this model there are 14 individual variables that directly or indirectly affect the two aforementioned flows and stock and they are represented as word strings.

5.6 Causal links

Illustrated as a single curved line, causal links indicate the influence of one variable over another, according to the direction of their arrowheads. Causal links visually identify the interconnectivity that is at the heart of this systems model of LP.

5.7 Positive polarity indicators

A small positive sign adjacent to a causal link's arrowhead indicates that if the causal variable increases then the impacted variable will also increase.

5.8 Negative polarity indicators

A small negative sign adjacent to a causal link's arrowhead indicates that if the causal variable increases then the impacted variable will decrease.

5.9 Goal-seeking loop identifier

Illustrated as a circle with a vertical/horizontal cross in its centre, the goal-seeking loop identifier indicates that the polarity of its causal loop is negative and, therefore, operates to move the system to a goal state. This goal state is determined by reference to the system's stock, in this case the actual population of Xish users.

5.10 Reinforcing loop identifier

Illustrated as a circle with a diagonal cross at its centre, the reinforcing loop identifier indicates that the polarity of the causal loop is positive and, therefore, operates to move the

system to a exponential growth/decline with reference to the system's stock, in this case the actual population of Xish users.

6 CONCLUSION

This article proposes a new model of LP which is founded in the ST method. It has placed this model within the corpus of literature on LP theory and explained both the components of the traditional tripartite of LP as well as the elaborated variables contained within. The purpose and means by which positive and negative LP operate have also been presented in the model and accompanying article. Finally, the component parts of the model, the symbols and codes through which its message has been articulated, have been described in detail. The benefits of bringing the ST approach to LP are twofold: first, this method allows for the accumulation of diverse theories into one model, and second, the model itself is operational and is able to identify means and causes of LP activity in a visually accessible medium.

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A quantitative analysis of rhoticity in Dorset: evidence from four locations of an urban to rural hierarchy of change[*]

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The South-West of England, of which Dorset is a part, is often described as being non-prevocalic /r/ pronouncing or rhotic (e.g. Wells 1982). However, since the Survey of English Dialects examined Dorset in the 1950s, there has been no evidence to show to what extent this is still true. Research from other traditionally rhotic areas suggests that this feature is dying out (e.g. Sullivan 1992, Williams 1991). If non-rhoticity is occurring in Dorset, how will this change permeate through a geographical area; can it be predicted where it will occur first, in which geographical or social environments? These theoretical issues were investigated through a quantitative analysis of the casual speech of informants from four locations across Dorset. The four locations were chosen to represent an urban-rural continuum as previous studies have shown that linguistic changes can diffuse in this way. The informants were chosen to represent two age groups - older and younger - in order to simulate a diachronic perspective through the use of the apparent time construct. Results of this analysis show that rhoticity is indeed in decline being all but absent from the younger age cohort. Rhoticity amongst the older speakers demonstrates a decline of rhoticity as predicted by an Urban-Rural hierarchy of linguistic change. These findings seem to suggest that contact between dialects may be a contributor to language change with those speakers from high dialect contact locations and professions showing lower levels of rhoticity.

1 INTRODUCTION

This paper describes a quantitative analysis of rhoticity conducted in Dorset in 2006. It examines the results comparing the speakers' levels of rhoticity and the social factors of age, gender and location and seeks to provide an explanation for the patterns found. The internal or linguistic constraints on rhoticity in Dorset are discussed in Piercy (2006). This paper has the following sections: first an overview of rhoticity, of the south-west of England and of geographical diffusion of linguistic change, then a description of the methodology used in this study. A results and discussion section looks at the findings of the study, then a brief conclusion follows with implications for future research.

1.1 Rhoticity and the South-West of England

1.1.1 Defining the linguistic variable

Rhoticity is a term used to describe the pronunciation of /r/ in non-prevocalic[2] environments. In English, rhotic segments can also occur word initially, between vowels and in consonant clusters, however these environments are 'places where all or almost all speakers never drop r' (Downes 1984: 113). An accent is therefore only described as being rhotic if /r/ is pronounced in non-prevocalic environments.

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[2] I will use the term 'non-prevocalic /r/'. The term 'post-vocalic /r/' is also commonly found in the literature and refers to the same phenomenon.

Rhotic accents are common outside England being the norm for English speakers in Scotland, Ireland, Canada, and Barbados as well as in many parts of the US and India and in the far south of the South Island of New Zealand. The phonetic realisation of non-prevocalic /r/ varies across these accents from consonantal, for example, trill [r], tap [ɾ] and approximant [ɹ] varieties found in Edinburgh (Romaine 1978) to rhoticised vowels as described by Ladefoged (2001) for pronunciations in the United States. For this present study I adopt the position of looking at simply the presence or absence of any form of non-prevocalic /r/, although in Dorset it is probably almost always realised as a rhoticised vowel rather than any consonantal variant.

1.1.2 Dorset, the West Country and rhoticity.
Dorset is a county in the South-West of England located in the east of an area colloquially known as 'the West Country'. Whilst this area does not have strict boundaries, it has shared features such as being mainly rural and traditionally having an economy based on farming and agriculture. In the present day, tourism is important with the region attracting the over 15 million visitors each year (UKTS 2005). Importantly, the region also has similarities in accent and the West Country, for the most part, coincides with Trudgill's (1999: 66) 'southwest modern dialect area' and Wells' (1982: 335) 'West Country counties'. Wells (1982: 336) remarks 'rhoticity is the most striking distinguishing feature of west-country accents'.

The last information gathered about post-vocalic /r/ in Dorset was from the Survey of English Dialects (SED hereafter). This survey interviewed 9 informants born from 1871 to 1904 from 5 places spread widely across Dorset. For these speakers it was found 'r colours a preceding vowel' (Orton and Wakelin 1967: 59), indicating that they were rhotic. Indeed, I analysed the SED for these speakers and found non-prevocalic /r/ to be realised in 97% of all environments where it could occur (Piercy 2006).

However, it is expected that rhoticity is a feature in decline. Hughes and Trudgill (1996: 59) summarise 'we can generalise and say that [...] post-vocalic /r/ is dying out' and this follows the expected pattern as 'one is more likely to hear post-vocalic /r/s in the speech of older working-class rural speakers than from younger middle-class urban speakers'. Williams (1991) studied the urban speech of 29 working class informants from the Isle of Wight, an area also found to be rhotic by the SED. He finds evidence to confirm Hughes and Trudgill's position discovering that 'there seems to be little doubt that the use of post-vocalic (r) is steadily disappearing' (Williams 1991: 65). He studied two age groups and found that not one speaker in his younger age group was rhotic. Sullivan (1992) also looked at rhoticity in another traditionally rhotic area, Exeter in Devon. She analysed 20 middle class children, aged 12 – 14, from two schools, one urban and one rural. She found that 'only twelve out of the total of twenty informants used variants of post-vocalic /r/' (Sullivan 1992: 94) indicating that rhoticity there is also in decline. Importantly, in terms of this present study, Sullivan (1992: 49) found that there was some evidence for an urban to rural diffusion of change as the 'children from the rural school used more postvocalic /r/ than those from the urban school in conversational style'.

1.2 Geographical Diffusion of change

One of the motivations for this present study was to investigate where language change will occur first. Over time, using information from large-scale surveys of English accents, Ellis (1999/1889) and the Linguistic Atlas of England (Orton et al 1978), it can be shown that non-rhoticity has been spreading across England from east to west. However, these findings represent a snapshot in time, certain speakers in certain places who did or did not pronounce non-prevocalic /r/. They do not show in which places the non-rhoticity spread to first, in which speakers and why. Indeed, how a change spreads through geographical space may

follow different patterns of diffusion. Britain (2006) identifies the following types of geographical diffusion of linguistic innovations:

- Wave Diffusion – 'innovations over time radiate from a central point, reaching nearby locations before those more distant' (2006: 655)
- Urban Hierarchy Diffusion – 'innovations descending down a hierarchy of metropolis to city to town to village' (2006: 655)
- Contrahierarchical Diffusion – 'innovations diffuse against the urban hierarchy' (2006: 656)

This present study aims to elucidate where non-rhoticity is spreading in Dorset and hypothesise reasons why this might be so.

2 METHODOLOGY

2.1 Sample

The informants for this study came from four different locations spread across Dorset, chosen to represent an urban to rural continuum in order to test the models of diffusion discussed above. The locations were as follows (in order of decreasing urbanness) Weymouth, a large town, Wareham, a small town, Bere Regis, a village and Powerstock, a hamlet. If urban hierarchical diffusion is taking place then rhoticity will increase along this hierarchy and if contra-hierarchical diffusion is taking place then conversely rhoticity will be found to decrease along this hierarchy. If wave diffusion is taking place then rhoticity will be found to increase from most easterly to most westerly giving the following order of locations: Wareham, Bere Regis, Weymouth and finally Powerstock.

The speakers were from two age groups: older, ages 62 – 83, and younger, ages 17-24, with equal male and female participants. Two age groups were used in order to simulate a diachronic perspective using the apparent time model. Under the apparent time model, 'it is assumed that except for minor lexical changes the phonetics and phonology of individuals do not undergo major restructuring during their lifetimes' (Cedergren 1987: 45), therefore an analysis of the speech of people of different age groups living in the same community can reveal if the community's language is changing, that is, 'differences between the speech of older and younger subjects are interpreted as representing linguistic changes' (Trudgill 1988: 33).

To summarise, in each location the informants comprised one older male, one older female, one younger male and one younger female making a total of 4 speakers per location, 16 speakers in all.

2.2 Coding

The informants were recorded to minidisk in conversation with me and sometimes other persons known to them. The average conversation lasted 55 minutes. To try to ensure that casual speech was being used for analysis the first ten minutes of each recording were not used. After this time the next 100 potential non-prevocalic /r/ environments (tokens) per speaker were coded as being either rhotic or non-rhotic. Tokens were coded conservatively against the hypothesis. That is, as it is expected that rhoticity is in decline only tokens that were clearly non-rhotic were coded as such. Where a token could be perceived as rhotic, it was coded as rhotic.

2.3 Analysis

The percentage of rhotic tokens was then calculated for each speaker and collectively for age, gender and location. The linguistic environment of each token was also examined but is not discussed here (see Piercy 2006).

3 RESULTS AND DISCUSSION

This section looks at the percentage of rhotic tokens observed for age, gender and location and discusses the implications of these findings.

3.1 Age

Overall, the total percentage of rhoticity in the sample was found to be 22% although this figure is somewhat misleading due the striking differences observed between the older and younger age groups.
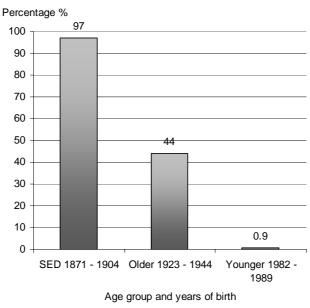
Figure 1

Percentage rhoticity by age group and of SED

Figure 1 demonstrates that overall, rhoticity in Dorset is declining. Indeed, just one speaker in the younger age group, (the male from the most rural location) was found to have any rhotic tokens. The findings from the SED have been included on the graph for comparison. Notice the drop from 97% rhoticity for the old people in the SED to 44% for the older age group. Using the apparent time model, this demonstrates that rhoticity began to decline even before the older age group acquired their language and the change is now all but complete. This change must have been completed before the younger age group acquired their speech in the late 1980s and early 1990s.

3.2 Gender

Having discovered that the younger age group are all but non-rhotic, the results will now focus on the older age group only. Figure 2 below shows the results for older male and female informants. The graph shows that rhoticity is favoured more by the male speakers than the

female speakers. This is an expected result as with a change in progress women are generally more likely to be leaders, that is, be ahead of the men in the same community. Reasons for the differences seen in Figure 2 can also be elucidated by looking at the contact opportunities of the speakers which is discussed in section 3.3 below.
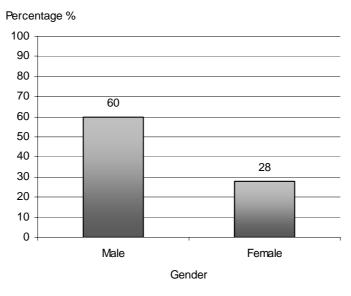

Figure 2

Percentage rhoticity by gender – older speakers only

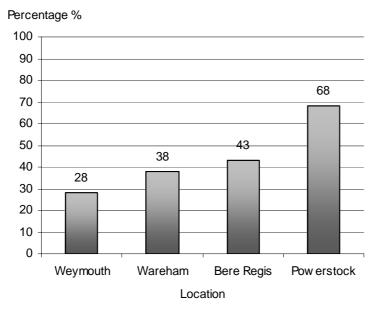### 3.3 Location

Figure 3 below displays the results by location again for the oldest speakers only.

Figure 3

Percentage rhoticity by location – older speakers only

This graph shows that the loss of non-prevocalic /r/ in Dorset is proceeding as predicted by the model of urban-hierarchical diffusion. As the ruralness of each place increases, so does the overall percentage of rhoticity observed there.

However, whilst Figure 3 does fit a predicted model of diffusion it is desirable not just to describe the pattern but also to try and explain why it has been found. Figure 4 below is an attempt to reveal something about the patterns observed for both gender and location.
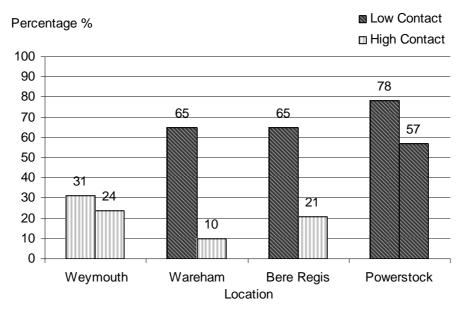

Figure 4

Percentage rhoticity for older speakers classified into low or high contact professions

I argue here that contact between speakers of different dialects is the most important factor in the change to non-rhoticity and I will give my reasons for this below. In figure 4, the speakers have been divided into two groups which have been termed high contact and low contact. Here contact refers to the level of interaction the speakers' occupations afforded. For example, in my sample, the high contact speakers were a postman, a publican and two shop workers, jobs which all involve contact with a large number of people by their very nature. The low contact speakers were by occupation three farmers and one carpenter. Notice that the two groups differ on the degree to which rhoticity is a feature. The speakers from the low contact group have higher levels of rhoticity, all 57% or above, whereas the speakers from the high contact group have lower levels of rhoticity, 31% or less. It seems that these workers may have had the opportunity to come into contact frequently with those that are non-rhotic. This contact may have led to accommodation to this non-rhoticity which in time may have 'become permanent, particularly if attitudinal factors are favourable' (Trudgill 1986: 39).

Although this seemingly accounts for the higher and lower levels of rhoticity found in these speakers, an obvious criticism might be that these people must have acquired their speech before they went into their occupations. Indeed the apparent time construct relies on the idea that people do not change their speech throughout their lives. Therefore, the idea that your occupation might change your speech would be to discredit its use.

However, occupation and the extent to which your community is rural or urban are not necessarily independent. Your occupation might be largely based upon the opportunities available in your community. Living in a more urban area might mean that you are more likely to have a job where you come into contact with a lot of people on a daily basis whereas living in a rural area may mean you may not. Furthermore, moving away from occupation, simply living in an urban area means that you are more likely to have contact with more people on a daily basis. Living in a rural area might mean less opportunity for this. What is important to note here too are not just the contact opportunities but also the dialects that you are coming into contact with. For example, in rural areas, it might be that you come into contact with those that have accents most similar to your own, whereas in high contact areas

the speakers might be from accents more different from your own. This can be said to be especially true in places such as Weymouth that are visited by large numbers of tourists each year. Thus there is more scope for diffusion of a linguistic feature in more populated urban areas than less populated rural ones.

The final question to answer is why do the most rural communities with older rhotic speakers become communities with no rhoticity in the younger age group? An explanation comes from the way that the communities in question have changed over time; this can be illustrated by looking at the example of the hamlet of Powerstock used in this study. Here, a once tight knit community formed of those working in related industries has been replaced by a divided community of local people and second home owners and retirees. The younger people of the area are no longer mixing solely or at all with those of their immediate vicinity. In fact, the young people in this community are forced to travel daily for work and leisure, giving them opportunities to meet those that are non-rhotic. This gives less scope for the older speakers' accents to be enforced and more scope for contact with people speaking different, perhaps non-rhotic accents. Once there is change in the community towards non-rhoticity, then the young people do not need to travel to come into contact with this linguistic feature. Furthermore, the influx of retirees and holiday or second home owners has served to push the house prices out of the reach of the young people in the community. Indeed, Dorset 'has one of the biggest gulfs anywhere in the country between the average wage and average house price' (Dorset County Council Website: http://www.dorsetforyou.com/index.jsp?articleid=346502 last accessed 15/09/2006). This means that they often have to leave the communities where they are from and move away to cheaper areas, often far away, in order to afford somewhere to rent. These areas might have different linguistic features which might again lead to long term accommodation and further language change.

4 Conclusions and implications for further research

This paper has demonstrated that rhoticity is in decline in Dorset. Indeed the results indicate that this is a sound change that has been completed as rhoticity was all but absent from the younger age group studied.

Contact has been shown to be an important factor in the increasing dominance of non-rhoticity with those in the more high contact professions and living in the more urban places displaying the lowest levels of rhoticity.

This study has shown that linguistic change can be predicted to diffuse down a hierarchy of most urban to most rural. It would be interesting to extend this study to cover a much larger area of the West Country to further test this finding. The hypothesis in such a study would be that the more urban centres would have less rhoticity than the more rural areas. It would also be interesting to test this finding with a different linguistic variable, perhaps a vowel change, to see whether a change that is potentially less marked will still diffuse in the same way.

Further research would benefit from using a much larger sample. It is prudent to be cautious about drawing too many conclusions from this study given that each data point was represented by just one speaker. A larger sample with consistent results would mean that you can be surer about the reliability of your findings.

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The markedness of the negative:
Analysing negation in a spoken corpus

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This paper confronts the applicability of the posited distinction between straightforward, *descriptive* negation and more marked cases of negation; termed *metalinguistic* (cf. Horn, 1989). Faced with real spoken data from the International Corpus of English (ICE-GB), many cases do not lend themselves to a 'pure' characterisation as one form or the other. This leads one to reconsider the apparently clear-cut distinction between these posited types of negation. Indeed, the corpus data instead gives rise to the introduction of a finer grained classification in terms of *what is being represented*, enabling the identification of some clear cases of each form, whilst permitting a number of cases to serve as both descriptive and metalinguistic.

This study supports a basic distinction between 'descriptive' and 'metalinguistic' negation, but attempts to overcome some of the theoretical muddle that has arisen since then. The current theoretical ramifications appeal to a web of semantic and pragmatic factors which include backgrounding of information, focus and prosodic features in the search for a better understanding of the nature of negation in everyday language.

1. METALINGUISTIC NEGATION AND DENIAL

This paper addresses the markedness of negation in everyday conversation. Typically, the most familiar understanding of negation is an inversion of some descriptive property in a bivalent world, giving rise to a non-contradictory rejoinder [as in (1)-(3)]:

(1)   Adam's brother isn't tall   - he's short

(2)   That joke wasn't funny   - it was awful

(3)   I don't play soccer   - it's a stupid game

In such cases, logical bivalence is preserved by treating the negation as expressing a 'less than' relation, whilst affirmation expresses an equivalence (or greater) relation with respect to the predicated quality. In such cases, the target of the negation is invariably the straightforward propositional content of the negated clause. However, Horn (1989:397) claims there exists an alternative use for negation as operating *on another level*; termed *metalinguistic* negation. Indeed, there appears to be an intuitive distinction between cases of straightforward (descriptive) negation [as in (1)-(3)] and a class comprising of more marked ('metalinguistic') forms [as in (4)-(6)]:

(4)   'Adam's brother' isn't tall   - Adam doesn't have a brother!

(5)   That joke wasn't 'funny'   - it was absolutely hilarious

(6)   I don't play 'soccer'   - I play 'football'

On the basis that we may quite plausibly object to *any of a number of interpretive features* of the spoken utterance, Horn (1989:363) ultimately characterises metalinguistic negation as "a device for objecting to a previous utterance on any grounds whatever." However, Geurts (1998) objects to Horn's 'homogenous' treatment of this special class and instead provides a finer-grained account of *denials* characterised by the distinctions identified between (4)-(6), identifying between proposition denials [as in (1)-(3) and now B's rejoinder in (7)], presupposition denials [as in (4) and (8)], implicature denials [as in (5) and (9)] and form denials [as in (6) and (10)]:[1]

>   A: *You have a ladder in your tights*

(7) B: I do not have "a ladder in my tights" – they are perfectly intact!

(8) B: I do not have "a ladder in my tights" – I'm not wearing any tights!

(9) B: I do not have "a ladder in my tights" – I have three ladders and a gaping tear in them!

(10) B: I do not have "a ladder in my tights" – I saw an adder in my lights(!)

But now consider (7) in terms of Horn's distinction: the proposition denial functions as a straightforward negation and yet clearly acts as a direct denial of A's preceding assertion, thus qualifying as metalinguistic by Horn's earlier definition. On this basis, the gulf between descriptive (straightforward) negation and metalinguistic negation becomes greatly reduced – perhaps even obliterated: could (7) qualify as both descriptive *and* metalinguistic? If this is possible, what is the utility of Horn's basic distinction? We now find ourselves dependent on clarifying what is actually meant by 'metalinguistic.' Geurts (1998:277) claims that his own "form denials are the only ones that are genuinely metalinguistic, in the sense that in the meaning of a form denial reference is made to a linguistic object," and Noh (1998:616) refers to denials echoing linguistic form as the "true cases of metalinguistic use." But Horn's original characterisation appears to act more as a loose blanket expression identifying *any* marked case: what, then, *is* metalinguistic negation?

2. A REFORMED CLASSIFICATION

I adopt a new approach to the descriptive/metalinguistic debate by considering the empirical plausibility of such current theoretical accounts. Faced with recordings of everyday conversation from the International Corpus of English (ICE-GB), I aim to identify the nature of negation most typically occurring in everyday conversation, in the hope that the identification of real life examples may shed some light on the issues at stake.

    ICE-GB is a one-million word corpus, with approximately seventy-two hours of digitised spoken material accompanying the written component.[2] I began by assessing the semantic and pragmatic character of each token recognised by the corpus, by identifying the nature of the *target* or *content* of the negation. The corpus data consequently appeared to lend itself to four main general categories of negation in terms of *what was being represented* (cf.

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[1] In light of current space constraints, I keep my exposition of metalinguistic negation remarkably brief. For a more detailed exploration and a wider variety of examples and explanation, see Pitts (2007a).
[2] For more detailed information on the corpus and procedure, see Pitts (2007c).

Wilson, 2000) by the denial.[3] The present paper provides a summary of the classification that arose from addressing this corpus material in §2.1ff.[4]

2.1 Type-A: targeting some [verbatim] *linguistic token*

The first and most identifiable case of metalinguistic negation responds directly to some *previous utterance*[5] in the discourse context. I term such cases *type-A* negation:

(11)   A: … there's lots of <u>deers</u> and lots of rabbits
  ➢   B: It's *not deers* - it's deer   [*Not53*][6]

(12)   A: At uhm one of <u>the girls'</u>…
  ➢   Well she's *not a girl* - she's about forty two or something   [*Not252*]

Examples (11) and (12) further illustrate the compatibility between type-A negation and the fundamentally *echoic* nature of metalinguistic negation discussed by Carston (2002:298). Indeed, it seems perfectly natural to place the target of the negation in quotation marks:

(11)   It's not "deers"

(12)   Well she's not a "girl"

On this basis, type-A negation can be considered a case of metalinguistic negation *proper* - in the strictest sense of interpreting the term. But in order for this to be upheld, any mention of the previous utterance (or select part thereof) must be a strict repetition of the foregoing utterance.[7] If, however, the negation targets some (any) pragmatic inference over and above the basic Gricean *said* content of an utterance, it instead falls within the remit of *type-B* negation.

2.2 Type-B: targeting some *presumption* or *inference* arising from propositional content

Type-B negation targets the content of a previous linguistic utterance *qua* type-A, but whilst type-A is verbatim, type-B addresses any derivable *inferences* in the given discourse context. In other words, type-B negation typically pre-empts likely [Gricean] implicatures:

(13)   He does look sort of – well contemplative … *not sad*, but ...   [*Not670*]

(14)   A: That's *not to say that* there aren't in inverted commas 'therapeutic side effects' …
                                                                                          [*Not05*]

By these terms, I deem type-B to be meta-*pragmatic*, by virtue of targeting pragmatic inference: hence type-B negation may often involve a metacommentary [as in (14)] as an attempt to clarify the speaker's intended or conveyed meaning.

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[3] For a full account of the results for "not" and for the enclitic form "n't" see Pitts (2007b).

[4] The following classification is not proposed as a new theoretical staple or terminological artillery; it is merely intended as an aid for comprehension and the identification of pertinent examples.

[5] This appeals directly to the original definition of metalinguistic negation put forth by Horn; cf. §1.

[6] This example is taken from the 53rd identified negative lexeme 'not' identified by the corpus.

[7] By this reasoning, type-A negation is compatible with the original Gricean notion of *what is said* (as opposed to what is implicated) (Grice, 1975/1978).

2.3 Type-C: targeting some *societal norm* or salient *expectation*

The speaker of a type-C negation makes reference to some salient phrase, common predisposition or societal norm.[8] Intuitively similar to type-B, we can nevertheless distinguish between the two on the basis of backgrounding of information, since the target of type-C is *new* to the discourse domain. Whilst there is no evidence of previous mention in the given context [either explicit *qua* type-A, or implicit *qua* type-B], the introduction of the target within the negation does not appear to jeopardize coherence:

(15)   [*discussing relationships*]
  ➢   And *even if it's not sexual* and even if it's … a friendship   [*Not493*]

(16)   It's *not OK just being who you are*   [*Not601*]

The postulation of this meta*conceptual* category may be further supported by accounts proposing default-type inference, such as those put forth by Giora (1998) and Jaszczolt (2005).

2.4 Type-D: targeting some descriptive *state of affairs* or *situation* in the world

Type-D negation targets some descriptive situation or state of affairs, but with no evidence to suggest that the target has previously been introduced in the discourse domain (either explicitly or implicitly). By this I permit the negation and its content in the extensional category of type-D to qualify as relevant to the discourse exchange *without* alluding to some established (embedded) thought or utterance: instead, these instances describe a state of affairs by virtue of quite simply *what is not*:
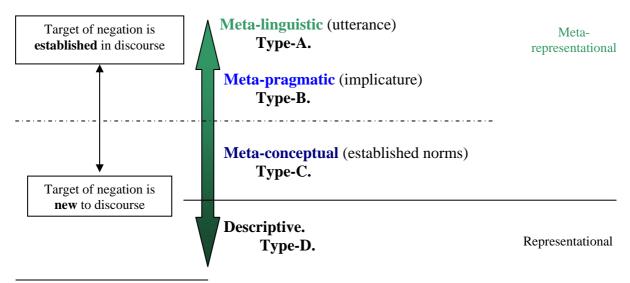
(17)   A: I don't know whether to check whether it's working or *not*   [*Not76*]

(18)   A: I do *not* need this lighthearted humour at the moment   [*Not411*]

Type-D negation can be viewed as representational on account of the fact that it describes some given state of affairs in the world. However, such cases have no reason to qualify as anything higher-level in terms of cognition; so type-D negation *does not* qualify as *meta*representational, but rather presents a straightforward case of descriptive negation:

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[8] The motivation for this category originally came from Sperber & Wilson (1981:312), who claim "standards or rules of behaviour are culturally defined, commonly known, and frequently invoked," so are consequently always available for echoic mention.

Figure 1

Diagram of reformed categorisation

2.5 Challenging the descriptive/metalinguistic dichotomy

In her discussion of possible lower-order representations, Wilson (2000:414) establishes a tripartite distinction between *public representations* (utterances), *mental representations* (thoughts) and *abstract representations* (propositions), which might be seen to correspond with the current formulation of type-A, type-C and type-B negation in Figure 1 respectively. However, it is important to observe that in contrast with Wilson's categories, I propose types A-C as characteristically *higher order meta*representations: my account of a lower-order representation corresponds with the basic linguistic reference to some state of affairs (*qua* type-D). It is on this basis that I wish to retain the four-way classification as introduced and summarised briefly here.

In addition to the two *intermediate* tiers between type-A (*i.e.* metalinguistic) and type-D (descriptive) negation in the present classification, it is also important to acknowledge the necessary recognition of *mixed forms* in the allocation procedure, a common situation heavily influenced by the apparent pervasiveness of type-D in interaction with the remaining three tiers. The primary combinations emerging from the corpus data are therefore *type-AD* negation, which combines a response to a previous overt linguistic token with describing a straightforward state of affairs [as in (19)],[9] *type-BD* negation, occurring particularly in cases where the speaker wishes to make quite clear that they are 'not saying' something [as in (20)], and *type-CD* negation, in which the negation presents some non-situation, accounting for an absence of some 'standard' expectation [as in (21)]:[10]

(19)   A: She's got <u>a small garden</u>
        B: Actually it's *not a small garden* … it's quite big   [*Not253*]

(20)   … and I'm *not exaggerating*   [*Not403*]

(21)   When she used to come into a room he used to *not even speak to her*   [*Not373*]

3. OVERVIEW

The present difficulty in conclusively distinguishing between metalinguistic and descriptive negation arises from the theoretical confusion of what one may actually mean by *metalinguistic negation*. Truly metalinguistic negation (as the most marked case) may be most clearly typified by type-A negation, but then extends in a downward cline through to type-C negation. The problem in rigidly demarcating between these forms occurs on account of the fact that the meta*conceptual* nature of C extends upwards through to types B and A, in the same fashion as the meta*pragmatic* nature of type-B extends upwards to incorporate type-A negation. On this basis, one may observe how truly metalinguistic negation (*qua* type-A) and straightforward descriptive negation (*qua* type-D) typify extremities along the scale; reinforcing the clear intuitive basis for Horn's original dichotomy.

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[9] This provides a clear illustration for the evident overlap of descriptive negation and metalinguistic negation as akin to the Geurts' proposition denial [cf. example (7)]

[10] I do not make allowances for type AB, BC or AC negations in the given venture. Although the most thorough account may demand their incorporation, the current data set did not give rise to the identification of such forms: therefore for the sake of brevity they are presently disregarded.

A more thorough explanation of the current venture requires a far more detailed incorporation of a web of semantic and pragmatic factors, characterised by a feature analysis for each individual example, specifically in relation to backgrounding of information, echoic nature, location of primary stress, terminal contour, structure [as in the 'not X (but) Y' format], and periphrasis (not unconnected to the expression of two negatives). I trust that acknowledging these features in conjunction with the present classification will enable a better understanding of the reference and nature of negation in everyday language.

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Are L2 English Article Choices UG-regulated?[*]

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The paper reports English article substitutions by L1 Thai (-articles) and L1 French (+article) speakers. The study was a semi-replication of the forced-choice elicitation task from Ionin, Ko & Wexler (IKW) (2004). IKW report that Russian and Korean speakers overuse *a(n)* in [+def;**-spec**] and *the* in [-def;**+spec**] contexts, and argue that this pattern is a result of the learners fluctuating between the two settings of the Article Choice Parameter, one linked to [±definiteness], the other to [±specificity]. The problem is that the claim is based on materials in which 'specificity' was operationalised as the speaker's explicitly stated knowledge (ESK) of the referent being talked about (see Trenkic 2007b). The values of [spec] and ESK were conflated in all contexts ([+spec; +ESK]; [-spec; -ESK]). However, a referent can be [+spec], even when personal knowledge is denied. It is thus possible that in IKW's study the article choice was not influenced by [±spec] (UG-regulated), but by what was explicitly claimed about the referent. This possibility was investigated by adding cases where [spec] and ESK values were separated: [+spec; -ESK]. Repeated-measures ANOVA confirmed that, on this test, the L1 Thai learners' article distinctions were influenced by ESK, and not by [±spec]. This is in line with the proposal in Trenkic (2007a) that L2 speakers from (-article) languages misanalyse and use English articles as lexical elements, attributing them **referential**, common-sense meanings of definite/indefinite ('that can be/cannot be identified'). In contrast, L1 French learners' article choices were mainly appropriate, suggesting a correct analysis of English articles as determiners, and therefore having syntactically-triggered production.

1 INTRODUCTION

A particular problem to L2 speakers from (-article) L1 backgrounds is persistent variability in article production, even at advanced levels. L2 speakers sometimes use *a(n)* instead of *the*, and vice versa. L2 English article substitution problems are the focus of this study.

This paper is organised as follows. Section 2 presents Ionin, Ko and Wexler (IKW)'s (2004) account, which is related to L2 English article substitutions. Section 3 points to some problematic issues in IKW's study. Section 4 introduces the present study. Section 5 reports the results and section 6 discusses these results, including their implications. Finally, section 7 reports the conclusions of the study.

2. IKW'S (2004) ACCOUNT

There have been several studies into English article substitutions (cf. Trenkic 2002; Leung 2005; among others). A recent study exploring this issue is IKW (2004). IKW (2004:12)

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proposed the Article Choice Parameter (ACP) for languages with two articles. According to the ACP, 'definiteness' and 'specificity' are cross-linguistic article semantic features evidenced in two-article languages:

(1)   The Definiteness Setting: Articles are distinguished on the basis of definiteness.
       The Specificity Setting: Articles are distinguished on the basis of specificity.

For example, the definiteness setting is found in English while the specificity setting is evidenced in Samoan. Article systems encoding [±def] are claimed to cut across the distinction of [±spec] (cf. table 1), and vice versa (cf. table 2):

	+def	-def
+spec	*the*	*a(n)*
-spec	*the*	*a(n)*

Table 1
[±def] cutting across [±spec]
in languages encoding [±def]

	+def	-def
+spec	*le*	*le*
-spec	*se*	*se*

Table 2
[±spec] cutting across [±def]
in languages encoding [±spec]

By combining the assumption that UG is available to L2 speakers with the theoretical construct of the ACP, IKW formulated the Fluctuation Hypothesis (FH) (2004:15).   That is, the two article settings in the ACP are fully accessible to L2 speakers. L2 speakers will fluctuate between these settings until sufficient input causes the appropriate semantic parameter to be established as the correct setting for the language. The following patterns were thus predicted to occur for L2 speakers of (-article) L1, when speaking English:

	+ specific	-specific
+definite (target: *the*)	correct use of *the*	overuse of *the*
-definite (target: *a(n)*)	overuse of *a(n)*	correct use of *a(n)*

Table 3
Predictions of L2 article use based on semantic properties of [def] and [spec]

If [def] and [spec] are of the same value, correct use of *the* for [+def; +spec] and *a(n)* for [-def; -spec] is predicted. However, if the two values clash, overuse of *a(n)* should be found in [+def; -spec] and *the* in [-def; +spec] contexts. IKW tested their predictions on L2 speakers of English whose L1s were Korean and Russian ((-article) languages), by using a forced-choice elicitation task. The results reported supported their predictions.

3 PROBLEMS WITH IKW (2004)'S STUDY

According to IKW, an NP is specific when the speaker (a) has a referent in mind and (b) intends to refer to it. However, they also claim that the speaker must also 'consider this individual to possess some noteworthy property' (IKW 2004:5). For example, in 'Peter intends to marry a/this merchant banker—even though he doesn't get on at all with her' (Lyons 1999, quoted in IKW 2004:6), the NP *a/this merchant banker* is specific because the speaker intends to refer to a particular merchant banker with the noteworthy property that 'Peter does not get on at all with her'.
       However, as Trenkic (2007b) notes, from a closer observation of the forced-choice elicitation task materials in IKW (2004), there might be some problems with their claim, due to how the 'specificity' was operationalised. In their materials, [±spec] was operationalised through the speaker explicitly stating or denying knowledge of the referent being talked about

(i.e. 'explicitly stated/denied knowledge' or ±ESK). For example, (4) describes how [-definite; +specific] context was operationalised:

(4)   [-indefinite, +specific]
        Meeting on a street
        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, the, --) friend from college—his name is Sam Brown, and he lives in Cambridge now.   (IKW 2004:22)

IKW reported that the L2 speakers were likely to overgenerate *the* in such contexts, and they attributed this tendency to the positive value of specificity. For now, note that the specificity was operationalised as the speaker claiming to know the referent being talked about, i.e. that this person's name is 'Sam Brown' and that 'he lives in Cambridge now'.
        Example (5) operationalises a [-definite; -specific] context:

(5)   [-definite,-specific]
        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, the, --) friend—but he didn't tell me who that is. He didn't leave me any phone number or address. (IKW 2004:22)

IKW reported that the L2 speakers tended *not* to overuse *the* in such contexts, and attributed this tendency to the negative value of specificity. Note that the non-specificity was operationalised as the speaker denying the knowledge of the identity of *a friend*.
        So, the contexts from IKW's materials covered only cases where the two *unrelated* variables of 'specificity' and 'explicitly stated knowledge' were conflated and of the same value. The context was either [+spec; +ESK] or [-spec; -ESK]. However, as Trenkic (2007b) observes, it is possible for a [-def] context to be [+spec] and [-ESK]:

(6)   [-definite, + specific] (- explicit speaker knowledge)
        Office gossip
        Gina: and what about the others?
        Mary: Well, Dave is single, Paul is happily married, and Peter…he is engaged to **a/ this merchant banker**, but none of us knows who she is or what she is like.

The referent *a merchant banker* is [-def] and [-ESK]. However, in English, when an indefinite NP can be felicitiously introduced in discourse by *this*, that NP is treated as specific (cf. Prince 1981; Foder & Sag 1982:360). In this indefinite context, the speaker has a particular referent in mind and has an intention to refer to this person but denies personal knowledge of her. Such a context was not covered by IKW (2004). In their materials, the noteworthy property of a [+spec] NP was always linked to [+ESK], and vice versa. The speaker's knowledge was concerned with the referent's identifying attributes (name, appearance, characteristics, etc). There was no [+spec;-ESK] context. It is therefore important to use the contexts where the values of [spec] and [ESK] do not match, to test the FH. If learners associate article choice with [±spec], overuse of *the* is expected in [+**spec**; +ESK] and [+**spec**; -ESK] indefinite contexts. However, if their article choice depends on [±ESK], overuse of *the* should be found in only [+spec; +**ESK**], not in [+spec; -**ESK**] contexts.

4 THE PRESENT STUDY

4.1 Participant groups

Proficiency-matched intermediate and advanced English speakers from two language backgrounds were compared: two L1 Thai (-article) and two L1 French (+article) groups. There were 20 participants per group. The experiment was conducted in Thailand. The Thai participants' age range was 16;9 to 19;6 years (mean = 18;2) and the French participants' age range was 17;2 to 19;3 years (mean = 18;2). The levels of English proficiency were determined by the Oxford Placement Test (Allen 2004).

4.2 Materials & Procedures

The participants were tested on the forced-choice elicitation task materials, a semi-replication of IKW's (2004) materials. They were a discrete-item test, consisting of 24 items. Each item contained a short English dialogue based on items from the forced-choice elicitation task in IKW.   In the modified version here, the introduced contexts were those where the two features were separated, i.e. [+spec; -ESK]. This was done for both [+def] and [-def] contexts. To test whether [±spec] or [±ESK] influenced the L2 speakers' article choice, 3 combinations of [spec] and [ESK] values were made in each (in)definite context, yielding 6 contexts: 3 [-def] and 3 [+def] equivalents:[1]

[-definite]	[+definite]
[+spec; +ESK]	[+spec; +ESK]
[-spec; -ESK]	[-spec; -ESK]
[+spec; -ESK]	[+spec; -ESK]

Table 4
Indefinite & definite equivalent contexts

There were four items per context type. The test items were arranged in a random order. Based on the context in each dialogue, the participants were asked to fill in a blank in front of the target singular nominal phrase in each item with *the*, *a(n)* or leave the blank empty if they decided that no article should be used.

4.3 Predictions

If L2 speakers associate article choice with [±spec](based on the ACP and FH), then:

CONTEXTS	+spec; +ESK	-spec; -ESK	+spec; -ESK
+definite(target: *the*)	correct use of *the*	overuse of *a(n)*	**correct use of *the***
-definite(target:*a(n)*)	overuse of *the*	correct use of *a(n)*	**overuse of *the***

Table 5
Predicted English article choices if article choice is influenced by [±spec]

If L2 speakers' article choice depends on [±ESK], then:

CONTEXTS	+spec; +ESK	-spec; -ESK	+spec; -ESK
+definite(target: *the*)	correct use of *the*	overuse of *a(n)*	**overuse of *a(n)***
-definite(target:*a(n)*)	overuse of *the*	correct use of *a(n)*	**correct use of *a(n)***

Table 6
Predicted English article choices if article choice is influenced by [±ESK]

5 RESULTS

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[1] Logically, it is impossible to have a combination of [-spec] and [+ESK].

5.1 Results from the Thai groups

5.1.1 The intermediate Thai group

	[+spec; +ESK]	[-spec; -ESK]	[+spec; -ESK]
[-definite](target: *a(n)*)	**28.75% *the*** 68.75% *a(n)* 2.5% Ø	**7.5% *the*** 86.25% *a(n)* 6.25% Ø	**10% *the*** 82.5% *a(n)* 7.5% Ø
[+definite] (target: *the*)	83.75% *the* **11.25% *a(n)*** 5% Ø	51.25% *the* **35% *a(n)*** 13.75% Ø	55% *the* **38.75% *a(n)*** 6.25% Ø

Table 7
English article substitutions by the intermediate Thai L2 learner group (*N* = 20)

To determine the significance of the contribution of the combination of [spec] and [ESK] values to the use of *the* vs. *a(n)*, a repeated-measures ANOVA was performed on the overuse of *the* in indefinite, and the overuse of *a(n)* in definite environments by context type. [spec; ESK] had a highly significant effect on (over)use of both *the* in [-def] and *a(n)* in [+def] contexts.

- Overuse of *the* in [-def] contexts, F (2, 38) = 7.924, p< .01. Contrasts:
- Overuse of *the* in [+spec; +ESK] vs. [-spec; -ESK], F (1, 19) = 10.341, p<.01, r =.77
- Overuse of *the* in [+spec; +ESK] vs. [+spec; -ESK], F (1,19) = 8.301, p<.05, *r* =.74
- Overuse of *a(n)* in [+def] contexts, F (2, 38) = 20.675, p<.001. Contrasts:
-Overuse of *a(n)* in [+spec; +ESK] vs. [-spec; -ESK], F (1, 19) = 47.50, p<.001, r =.93
-Overuse of *a(n)* in [+spec; +ESK] vs. [+spec; -ESK], F (1,19) =27.092, p<.001, *r* =.89

5.1.2 The advanced Thai group

	[+spec; +ESK]	[-spec; -ESK]	[+spec; -ESK]
[-definite](target: *a(n)*)	**18.75% *the*** 80% *a(n)* 1.25% Ø	**0% *the*** 95% *a(n)* 5% Ø	**2.5% *the*** 96.25% *a(n)* 1.25% Ø
[+definite] (target: *the*)	96.25% *the* **3.75% *a(n)*** 0% Ø	68.75% *the* **22.5% *a(n)*** 8.75% Ø	75% *the* **22.5% *a(n)*** 2.5% Ø

Table 8
English article substitutions by the advanced Thai L2 learner group (*N* = 20)

- Overuse of *the* in [-def], F (1.17, 22.16) = 11.779, p<.01 Contrasts:
-Overuse of *the* in [+spec; +ESK] vs. [- spec; -ESK], F (1, 19) =15.545, p<.01, r =.83
-Overuse of *a(n)* in [+spec; +ESK] vs. [+spec; -ESK], F (1, 19) = 9.701, p<.01, r =.76
- Overuse of *a(n)* in [+def], F (2, 38) = 6.151, p< .01. Contrasts:
-Overuse of *a(n)* in [+spec; +ESK] vs. [-spec; -ESK], F (1, 19) = 9.0, p<.01, r =.75
-Overuse of *a(n)* in [+spec; +ESK] vs. [+spec; -ESK], F (1, 19) = 15.545, p<.01, *r* =.83
Although the advanced Thai group produced fewer article substitution errors, what is important to note is that the same pattern of the substitutions persisted.

In sum, the statistical results from the Thai groups show that, in the contexts directly taken over from IKW (2004), the results from IKW have been replicated. However, in the new contexts which tease apart [spec] and [ESK], the predictions of the FH were falsified: In [-def] contexts, *the* was overused in [+spec] contexts ONLY when [+ESK]. It was not overused in [+spec] contexts where [-ESK]. In [+def] contexts, *a(n)* was overused in ALL contexts where [-ESK], irrespective of whether the context was [+/-spec]. So, the results falsify the claim that overuse of *the* is influenced by [±spec]. They supported the prediction that, on this test, L2 speakers would make article distinctions based on [±ESK]. [±spec] seemed to play no role in their article choice.

5.2 Results from the French groups

5.2.1 The intermediate French group

	[+spec; +ESK]	[-spec; -ESK]	[+spec; -ESK]
[-definite] (target:*a(n)*)	**2.5% *the*** 95% *a(n)* 2.5% Ø	**0% *the*** 95% *a(n)* 5% Ø	**1.25% *the*** 97.5% *a(n)* 1.25% Ø
[+definite] (target: *the*)	92.5% *the* **3.75% *a(n)*** 3.75% Ø	83.75% *the* **11.25% *a(n)*** 5% Ø	90% *the* **6.25% *a(n)*** 3.75% Ø

Table 9
English article substitutions by the intermediate French L2 learner group (*N* = 20)

A repeated-measures ANOVA was performed on the overuse of *the* in indefinite environments, and the overuse of *a(n)* in definite environments by context type. [spec; ESK] had a non-significant effect on (over)use of *the* or *a(n)*:
- Overuse of *the* in [-def] contexts, F (1.46, 27.70) = 1.000, p> .05.
- Overuse of *a(n)* in [+def] contexts, F (1.50, 28.33) = 1.956, p> .05

5.2.2   The advanced French group

	[+spec; +ESK]	[-spec; -ESK]	[+spec; -ESK]
[-definite] (target: *a(n)*)	**1.25% *the*** 97.5% *a(n)* 1.25% Ø	**0% *the*** 100% *a(n)* 0% Ø	**0% *the*** 97.5% *a(n)* 2.5% Ø
[+definite] (target: *the*)	96.25% *the* **2.5% *a(n)*** 1.25% Ø	92.5% *the* **6.25% *a(n)*** 1.25% Ø	97.5% *the* **2.5% *a(n)*** 0% Ø

Table 10
English article substitutions by the advanced French L2 learner group (*N* = 20)

- Overuse of *the* in [-def] contexts, F (1.55, 29.46) = .487, p>.05.
- Overuse of *a(n)* in [+def] contexts, F (2, 38) = 1.132, p> .05.
The results from the French groups indicate that there were no differences in the overuse of *a(n)* in any [+def] contexts and *the* in any [-def] contexts. So, the French speakers' article choices were not influenced by either the value of [spec] or [ESK].

6 DISCUSSION

The results were shown to falsify the FH. There was no evidence indicating that specificity plays a part in L2 article choices. Overuse of *the* and *a(n)* was not found to be tied to [+spec] and [-spec], respectively. The same pattern of results was found in Trenkic (2007b) for L1 Mandarin/L2 English speakers. The results can therefore be said to undermine the validity of the construct of the ACP, and definiteness as a UG-based semantic feature. The outcome is in line with an alternative account – The Syntactic Misanalysis Hypothesis (SMH) - assuming that L2 articles are misanalysed as nominal modifiers (c.f. Trenkic 2007a).

According to the SMH, languages without articles do not have a syntactic category determiner in their grammar (cf. Lyons 1999). Determiner-like elements are argued to behave syntactically as adjectives. Due to the adjectival nature of determiner-like elements in such languages, L2 speakers from these languages are assumed to incorrectly treat L2 determiners, including articles, as adjectives (cf. Kuribara 1999; Trenkic 2007a). The fact that L2 articles are misanalysed as nominal modifiers leads to certain implications for L2 article production:

- An article will only be produced if the learner sees a communicative reason for its meaning to be expressed in the given context, resulting in frequent omissions.
- If 'correct meanings' have been assigned to articles, when articles are supplied, there will be no substitution errors. If not, principled substitution errors will occur, reflecting the meanings the learners have assigned to the article forms.

So, what meanings might L2 speakers assign to L2 article forms? The proposal is that, as articles are assumed to be syntactically misanalysed as adjectives, then referential, common-sense meanings of *definite* ('that can be identified') and *indefinite* ('that cannot be identified') would be attributed to *the* and *a(n),* respectively.

A discourse referent is definite if the speaker intends to refer to it, and expects it to be identifiable to the hearer. But discourse-related identifiability does not depend on either the speaker's or the hearer's ability to determine the **'real-world identity'** of discourse referents (cf. Trenkic 2007b). For example,

(3) (a). Macbeth was written by **a famous English playwright**.
(b). We are looking for **the vandals who broke into the office last night**. (Trenkic 2007b)

Although the real-world identity of *a famous English playwright* may be known to both the speaker and the hearer, *the* cannot be used. In contrast, even though neither the speaker not the hearer might be able to identify *the vandals who broke into the office last night* on an identity parade, *the* can be employed. This is because definiteness as a disourse-related identifiability is linked to the referents' 'existence' and 'uniqueness' in discourse-determined pragmatically delimited contexts (cf. Hawkins 1991), and does not depend on the ability of the participants in discourse to determine the real-world identity of these referents.

The adjectival (lexical) meaning of *definite* and *indefinite*, however, concerns more readily the 'objective identifiability' of referents, which is a broader concept than 'discourse identifiability'. Objective identifiability can be determined against a wider range of criteria. One criterion which is salient in the test is 'the speaker's familiarity with the referent' via identifying attributes. When the criteria converge, i.e. [-def; -ESK] and [+def; +ESK], correct article choices occurred. However, when there is a conflict between different criteria, i.e. [-def; +ESK] and [+def; -ESK], fluctuations in article choice were found.

The fluctuation was found only in L1 Thai/L2 English speakers' production, but not in L1 French/L2 English speakers' choices, suggesting that the former, but not the latter misanalyse L2 articles as adjectives. Given the presence of the syntactic category determiner

in L1 French, French learners of English are assumed to analyse English determiners, including articles, appropriately as determiners.

7 CONCLUSION

The results from the Thai groups patterned along the dimension of [ESK], not [spec] whereas those from the French groups consistently patterned along the line of [def]. I have argued that L2 speakers from (-article) languages analyse English articles as adjectives, attributing them the lexical, common-sense meanings of *definite* and *indefinite,* and that this leads them occasionally to link article choices with [±ESK], i.e. the speaker's explicit claim or denial of his familiarity with the person or object being talked about. The FH and the ACP were falsified, suggesting that L2 article choices are not UG-based.

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Mapping Metaphors in Modern Greek: Life is a Journey

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When M. Johnson and G. Lakoff published "Metaphors We Live By", they were at the forefront of a radical change in thinking about metaphors. Metaphors, they suggested, are not simply poetic parts of speech, or obscure idiomatic expressions, but rather part of our larger cognitive reasoning. Metaphors in the language form part of larger, conceptual metaphors that help us understand and talk about the world we live in.

Using this theory of metaphors as a theoretical framework, my presentation will focus on the Modern Greek language and examine the presence of the "universal" conceptual metaphor "LIFE IS A JOURNEY" and its culture-specific dimensions. This conceptual metaphor envisages life as a journey, with birth as the point of embarkation and death as the final destination. So in English for example, humans encounter "twists and turns", "get lost" but later "find their way" and often "come to a crossroads". In Modern Greek, this metaphor is present in the discourse of love, religion and daily life. There is evidence from ancient Greece that the "LIFE IS A JOURNEY" metaphor has been conceptualised since antiquity.

Linguistic data has been collected using a Greek corpus, as well as examples from media and literature. The analysis of "LIFE IS A JOURNEY" and conceptual metaphors in Modern Greek more generally will not only help us gain insight into the language, thought processes and culture of the Greek people, but will also serve as a comparative tool which will contribute to the understanding and extent of "universal" metaphors.

1 THEORETICAL BACKGROUND

Traditionally, metaphor, along with other parts of "creative" speech like similes, hyperboles, etc., is viewed as fundamentally linguistic in nature and is "assigned a peripheral role in language, as an ornament or, at best, a mechanism for filling lexical gaps in the language" (Deignan 2005:2). In the past 30 years, however, a theory of metaphors has emerged that would support the idea that all humans have command of metaphors and in fact the way we think about the world — and talk about it — is largely metaphorical in nature. George Lakoff and Mark Johnson are responsible for reformulating and popularising this view in the 20th century. In their groundbreaking work *Metaphors We Live By*, Lakoff and Johnson (1980:4) maintained the idea that "the essence of metaphor is understanding and experiencing one kind of thing in terms of another" but suggested that metaphors do not have a linguistic basis, but rather a conceptual one. A revised definition of metaphors in the vein of cognitive linguistics defines it as "understanding one conceptual domain in terms of another conceptual domain" (Kövecses 2002:4).

In the schema introduced by the cognitive linguists, "the linguistic expressions (i.e. ways of talking) make explicit, or are manifestations of, the conceptual metaphors (i.e. ways of thinking)…it is the metaphorical linguistic expressions that reveal the existence of conceptual metaphors" (Kövecses 2002:6). The domain we use to shape our metaphorical linguistic expressions is called the *source* domain, while the conceptual domain we talk about and understand through the use of these metaphors is the *target* domain. In the conceptual metaphor LIFE IS A JOURNEY we have used the source domain of a journey to

understand the target domain of life[1]. This conceptual metaphor envisages life as a journey, with birth as the point of embarkation and death as the final destination. In English, for example, humans encounter "twists and turns", "get lost" but later "find their way" and often "come to a crossroads". Speakers tap the domain of journey so heavily in order to comprehend life because "the metaphor provides a framework… connecting diverse experiences by making use of our concrete and universally shared experience of literal journeys" (Deignan 2005:17).

In this paper, I will examine how the source domain of journey is used to understand the target domain of life in the Modern Greek language, with some reference also to Ancient Greek. I have looked at the different ways in which this conceptual metaphor takes form linguistically. Since I am working under the assumption that "the most fundamental values in a culture will be coherent with the metaphorical structure of the most fundamental concepts in the culture" (Lakoff & Johnson 1980:22), I hope that this study will be revealing both linguistically and anthropologically in terms of Greek society.

Apart from understanding how the Greeks specifically conceptualise life and the cultural and linguistic implications this has, I hope this research will contribute to a growing body of work that collectively seems to indicate that LIFE IS A JOURNEY is present cross-culturally. This has additional significance; since "metaphorical expressions in our language are tied to metaphorical concepts in a systematic way, we can use metaphorical linguistic expressions to study the nature of metaphorical concepts and to gain an understanding of the metaphorical nature of our activities" more generally (Lakoff & Johnson 1980:7). It will be obvious to anyone reading this paper that there are many similarities in the way Greek speakers and English speakers utilize the LIFE IS A JOURNEY conceptual metaphor.

2 RESEARCH METHODS

For the present study, I have utilized a corpus (in the general sense of the term); I also recorded metaphor usage in native speakers and have tried to take advantage of my own knowledge and intuitions. The reason I have used a combination of multiple popular methodologies is twofold. First, while some researchers rely solely on corpus analysis because they believe it helps minimize the subjectivity present in methodologies like Lakoff and Johnson's (1980), I disagree with this line of thinking. It seems problematic to suggest that corpus analysis is independent of the subjectivity of the native speaker when, in order to search a corpus, a researcher must select, input *and* scan the results of a keyword or term. Thus, what is searched for depends entirely on the subjectivity of the researcher. Second, my hope is that by collecting information from a variety of sources, my findings will not be restricted to: 1) the limitations of my own memory; 2) the erroneous self-reporting of native speakers or 3) a mere detailing of Greek, without any understanding of it as a cognitive system.

My corpus consists of a variety of sources, including literature, folk and contemporary song lyrics, and newspaper articles. I estimate the total word count of collected materials to be between 200,000-350,000 words[2]. I did a systematic search of certain keywords using the online archives of *Ελευθεροτυπία* (Eleftherotypia), a well-known Greek newspaper, and thoroughly charted their presence over the course of three months. The words included *δρόμος* and *οδός* both terms for 'road'; *ταξίδι* 'journey'; *πέρασα* 'to pass through'; *Χάρος* 'Charon'; *οδύσσεια* 'odyssey'; and were selected based on my own intuitions about the presence of LIFE IS A JOURNEY in Greek. The input and identification of keywords was a

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[1] One way to define linguistic metaphor is to say that it "refers to the realization of a cross-domain conceptual mapping" (Deignan 2005:34).
[2] Figure estimated based on total number of works, where for each work an average word count per page was created and multiplied by the number of pages.

necessary part of the research, since there is no automatic way of identifying metaphors using corpus data. I also relied on entries in the *Λεξικό Νεοελληνισμών* (1991), a Greek dictionary dedicated to non-literal language use and idiomatic expressions. In addition, I examined the lyrics and titles from a collection of about 1000 songs.

Finally, during my stays in Greece over the last year, I took extensive notes on pertinent expressions uttered by native speakers either in person or through radio and TV broadcasting. I have not gathered any material using elicitation techniques, so therefore all examples have occurred naturally in speech, except when the source was scripted (as in TV broadcasting). All examples that were collected in this way are described as 'speech samples' throughout the paper. Examples that are based on my own intuition are identified as 'common expressions'. In order to examine the presence of LIFE IS A JOURNEY in antiquity, I used sources from the classical literary cannon, like Homer, Sophocles and Hesiod. I also turned to ancient Greek mythology, as well as philosophy.

The translation of the Modern Greek examples is entirely my own. It is particularly challenging to translate examples in a way that highlights the literal language that is used but also conveys the metaphorical meaning accurately. All my examples use metaphoric language and convey some aspect of the LIFE IS A JOURNEY metaphor and are not to be taken in their literal context. When the meaning of the sentence is not clear in English, I have used footnotes in addition to translations. The Ancient Greek sources have been translated into English according to the author specified in the references.

3 MAPPINGS

In order to comprehend the full scope of LIFE IS A JOURNEY in Greek, it is necessary to detail the various ways in which the notion of a journey lends itself to the conceptualisation of life. The systematic conceptual correspondences that occur "between the source and the target in the sense that constituent conceptual elements of B correspond to constituent elements of A… are often referred to as mappings" (Kövecses 2002:6). In a manner that closely resembles English, LIFE IS A JOURNEY in Greek can be mapped out in the following way:

3.1 Journey---------------➔Life[3]

The language used to describe life is shaped by the superimposed imagery of a journey:

(1)   Όπου το μάτι μου γυρίσω, όπου κι αν δω   *Wherever I turn my eye, wherever I look*
       Ερείπια μαύρα της ζωής μου βλέπω εδώ   *I see the black ruins of my life here*
              Που τόσα χρόνια πέρασα   *That for so many years I passed through*
       και ρήμαξα και χάλασα (Kavafis 1986:37).   *And pillaged and destroyed.*

In Greek, *ζωή* 'life' often is described as having a beginning, direction, destinations, obstacles, turns and an end. It is up to humans to navigate through life, often with the help of a guide or travel companion. The terms *προσανατολισμός* 'orientation' and *πορεία* 'progress, course or fortune' are particularly interesting because they rarely are used in their literal sense, but rather as means of foregrounding journey imagery.

Further proof that life is conceptualised the same way as a journey can be found in the titles of many biographical works. Greek linguist Giannis Psiharis's autobiography is titled *To Τάξιδι μου* 'My Journey' (1993); Clio Loumou-Markaki named her biography of Manoli Markaki *Η Πορεία της Ζωής Του* 'The Course of His Life' (2006). Because a biography is by definition about one's life, a title that references a journey inextricably links the two domains.

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[3] All examples of mapping will occur in the same format: an arrow will point from the source domain to the target domain.

3.2 Destinations/Stops---------------➔Goals & Achievements

In the Western tradition, life can be broken up into stages that correspond with accomplishing our goals. Reaching a goal is paralleled with the notion of reaching a destination on a journey: it is noteworthy, and cause for celebration and perhaps rest.

(2)   Πότε ένοιωσες ό,τι πραγματικά έφτασες; (speech sample)
When did you feel like you truly arrived?[4]

The verb *περνάω* 'to pass' is particularly pertinent to this discussion. *Περνάω* implies a physical orientation, but is used metaphorically to describe emotional experiences as if they were stops along a journey:

(3)   Πέρασα απο πολλές στεναχώριες (common expression).
I passed through a lot of sorrow.

Our lives depend on predetermined goals to give us a sense of purpose. Someone without goals is viewed as directionless and perhaps leading a meaningless existence. In Greek, to say that someone 'stays' on a road means they have not reached their goals/destinations:

(4)   Είχε πει πως θα σπούδαζε, άρχισε,   *He said he would go to university,*
αλλά έμεινε στον δρόμο (Dimitriou 1995:84).   *he started, but stayed on the road.*

Interestingly enough, the Greek word for career is *σταδιοδρομία*, a compound that breaks down into the word *στάδιο* 'stages' and *δρόμος* 'road'. In this instance, one's career — a vital part of one's life also is viewed as a journey, with each job experience akin to stops along the trip.

3.3 Traveller---------------➔Human

The way a traveller is described as part of the LIFE IS A JOURNEY conceptual metaphor can be very revealing. For instance, if a traveller is able to deal with adversity on the journey, this translates into a resourceful and intelligent human:

(5)   Το καλό το παλικάρι ξέρει και άλλο μονοπάτι (common expression).
A good fellow knows another route.

A traveller's physical handicap attests to the difficulty in accomplishing a goal. This can be considered an extension of the Traveller➔Human mapping. If a traveller conducts her journey and/or reaches her destination injured, blind, in physical pain, etc., it implies an unexpected, additional degree of difficulty:

(6)   Κουτσά-στραβά πήρε το δίπλωμά του (Dimitriou 1995:182).
He completed his diploma limping and crookedly.

A further extension of the mapping has to do with the burden of the traveller. Here we see the incorporation of the DIFFICULTY IS A BURDEN conceptual metaphor into LIFE IS A JOURNEY. In general, the challenge of the journey grows exponentially alongside the size and weight of the traveller's burden, something that is reflected in the recorded speech samples below:

(7)   Έχει τραβήξει πολλά στη ζωή του.   Τραβάς κανα ζόρι?
He has pulled a lot (of weight) in his life.   *You pulling some weight?*

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[4] This sentence means something like "When did you feel like you truly made it [found success]?"

Finally, just as a traveller can leave traces along a journey, a human has the ability to leave her own mark behind. A reference to this notion can be found in Greek, as well as in English:

(8)   Βαδίζει στα χνάρια της μητέρας της (speech sample).
        She is following in her mother's footsteps.

3.4 Weather conditions---------------➡Degree of hardships

Another aspect of the journey domain that is used metaphorically when talking about life is the weather. Just as the weather is unpredictable, the course of one's life too can change suddenly. A clear view of the horizon means a clear view of what lies ahead in life, in terms of both challenges and achievements. Favourable weather means that life is continuing without particular difficulty. On the other hand, bad weather stands for hardships, often unexpected:

(9)   Μπόρα είναι θα περάσει (common expression).
        It is a storm and it will pass.

This particular mapping of the LIFE IS A JOURNEY conceptual metaphor is so ingrained in Greek people's mentality that it has shaped the way people curse. To wish someone bad weather means to wish someone bad luck. Along the same lines, if someone is grumpy or cynical, Greek people say it is because of his own bad weather:

(10)   Κακό καιρό να'χεις! (speech sample)   Τον κακό σου το καιρό (Dimitriou 1995:126).
        May you have bad weather!   *Your own bad weather (makes you do this).*

3.5 Different Roads---------------➡Different Choices

Just as travellers must choose a certain route in order to reach their destinations, and are flanked with many options along the way, humans too must determine which course[5] they want their lives to take. When humans make decisions about their career, morality, love life, etc., this is the equivalent of travellers choosing to follow one road over another:

(11)   Αυτός ο δρόμος θα τους οδηγήσει στην καταστροφή (Dimitriou 1995:83).
        This road will lead you to a catastrophe.

(12)   Πήρε τα βουνά (Dimitriou 1995:53).
        He took to the mountains[6].

To describe coming to an impasse in life, that is to feel left without choices, Greeks invoke the imagery of a dead-end:

(13)   Μπρος γκρεμός και πίσω ρέμα (common expression).
        Ahead there is cliff and behind a stream.

(14)   Είμαι σε αδιέξοδο (speech sample).
        I am at a dead-end.

3.6 End of Road---------------➡Death

The final correlation that occurs between journey and life for the purposes of the LIFE IS A JOURNEY conceptual metaphor is that of a final destination and death. Travellers may make various stops along the way, but inevitably their journey will come to an end. The physical

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[5] Even in English it seems impossible to describe this aspect of life devoid of any LIFE IS A JOURNEY references.
[6] This means he/she chose to isolate him/herself.

aspect of approaching death, as one would approach a final stop, is apparent in much of the discourse on death:

(15)   Είναι με το ένα πόδι στον τάφο (Dimitriou 1995:373).   .
          She has one foot on the grave.   .

(16)   Βαδίζει αγέρωχα προς τον θάνατό του (Stefanides 2007:1).
          He is walking boldly toward his death.

Evoking journey imagery is a critical part of formulating death euphemisms. After a long journey, travellers are tired and need rest and sleep. Along the same lines, when humans die, we use vocabulary that is borrowed from the journey domain to create euphemisms for death. For example, the English word cemetery can be traced back to the Greek word *κοιμητήριο*[7], which literally means 'sleeping place'. Death euphemisms draw heavily on the journey source domain through the use of words like *sleep, rest* and *closing one's eyes*, among others, as substitutes:

(17)   Κουράστηκε πολύ, μα επιτέλους αναπαύεται (speech sample).
          He grew very tired, but finally he is resting.

4 EVIDENCE FROM ANTIQUITY

One criterion for evaluating how fundamental metaphors are to a culture is their degree of conventionality, i.e. how well established and deeply entrenched they are within a society. The LIFE IS A JOURNEY metaphor can be classified as highly conventional in Greece because it has been prevalent since antiquity[8]. Perhaps because ancient Greece was so influential in structuring Western thought, we see many similarities in the realization of the LIFE IS A JOURNEY metaphor across European languages and cultures.

Ancient Greeks had a very strong conceptualisation of humans' final journey towards death, although there are variations dependent both on the time period and location of the description. Sometimes the dead are believed to descend into an underworld, while other times they journey to the very edge of the earth. What is consistent, however, in all conceptualisations of the afterlife is that it is underpinned by the idea of a geographic location. According to one version in Greek mythology, upon death humans' *psychai* leave their bodies and begin the trip to the underworld. Greeks so firmly believed in this final journey, that "the deceased [were] presented with a small coin which came to be known as the ferrying fee for Charon" (Burkert 1985:192).

The king of the underworld is Hades[9], the brother of Zeus and the husband of Persephone. He rules over the dead with the assistance of Charon, the ferryman who brings the newly deceased to the House of Hades. In the death schema produced by the ancient Greeks, death is personified; he is part of a family, experiences a wide breadth of emotions and holds a sceptre. In order to facilitate understanding of the unknown, the ancient Greeks made use of the familiar source domain of the self. By personifying death, they tried "to make sense of phenomena in the world in human terms — terms that we can understand on the basis of our own motivations, goals, actions and characteristics" (Lakoff & Johnson 1980:34). The specific attributes given to the personification of death fall under the scope of the LIFE IS A JOURNEY metaphor and help fortify its schematic mappings.

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[7] *Κοιμητήριο* still is used to mean cemetery in Modern Greek, although *νεκροταφείο* is more common.
[8] Here I refer to ancient Greece and ancient Greek religion in much the same way as Burkert (1985) does: namely, a period of roughly 1100 years that begins after the fall of the Mycenaean civilization sometime between 1200 and 800 B.C.E. and ends definitively "with proscription of all pagan cults by Emperor Theodosius in 393 [C.E.]" (Burkert 1985:7).
[9] *Hades* refers to both the location of the underworld and to its ruler.

The personification of death stems from the fundamental belief that "we comprehend external events as actions. This entails an important consequence; namely, that we view events as produced by an active, willful agent" (Kövesces 2002:50). Humans are frightened by the idea of death merely "occurring" and prefer to view it — through personification — as an agent "taking away" life. This is as true for ancient Greeks as it is for the current population; while Christianity has superimposed its own characters on the old personifications, there is still linguistic evidence linking the contemporary to the classical, as evidenced by the Modern Greek colloquialisms below:

(18)   Κι όποιον πάρει ο Χάρος! (speech sample).
         Let whomever be taken by Charon![10]

(19)   Είδα τον Χάρο με τα μάτια μου (Dimitriou 1995:425).
         I saw Charon with my own eyes.[11]

Very few get to escape the misery of death and Hades and instead go to the Elysian Fields. What both Hades and the Elysian Fields have in common is that they are conceptualised as destinations, not states of being, and they both require a significant journey before they can be reached.

5 CONCLUSION

In my paper, I hope to have shown that the analysis of metaphors can be valuable in enhancing our understanding and appreciation of many different areas, including the language, culture and history of a particular people. Also, studies like these can be of particular interest to those interested in the issues surrounding foreign language acquisition, or specifically students of Greek, since "conceptual metaphors are a very useful tool for learners of ...[foreign] languages because they could illuminate networks of associated figurative meanings, giving access to large numbers of frequently used vocabulary items" (Deignan 2005:26).

More generally, and perhaps more importantly, are the universal implications that go along with researching conceptual metaphors: "because metaphor is a primary tool for understanding our world and our selves, entering into an engagement with powerful...metaphors is grappling in an important way with what it means to have a human life" (Lakoff & Turner 1989:11 of preface). The identification and charting of universal metaphors has the potential to shed light onto some fundamental aspect of our cognitive functions and our human existence at large. Thus, metaphor studies should be an area of inquiry for researchers in a variety of areas, including linguistics, anthropology, history and the cognitive sciences.

The present study is far from exhaustive. I have attempted to cover a lot of ground in a relatively short paper, which means there are many points that could be expanded upon. At the same time, I tried to avoid giving any of the areas I covered a superficial treatment, which inevitably means there are many points that have yet to be touched upon. My hope is that this study will lay the groundwork for — and perhaps invite — additional research into the LIFE IS A JOURNEY metaphor, its sociolinguistic role in Greece and its significance in a universal context.

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[10] Means '...and whatever happens, happens!'
[11] Means 'to barely escape danger'.

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Text-setting constraints revisited: English and Spanish art song

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This paper re-addresses the typological distinction between stressed-timed languages and syllable-timed languages from an interdisciplinary perspective. Two art songs, one in English and one in Spanish, are analysed in order to determine which text-setting constraints are at play in each language and whether there is a relationship between text-setting constraints and linguistic prosody.

1 BACKGROUND AND INTRODUCTION

In a recent paper (Rodríguez-Vázquez, in press), I carry out an analysis of two folk songs, one in English and one in Spanish, and explore the similarities and differences between the rules of text-setting in these two languages. The conclusions reached in Rodríguez-Vázquez (in press) confirm the initial hypothesis that there is a correspondence between the timing typologies of language and the rhythmic typologies of music. However, it could easily be argued that the observed behaviour of metrical and grouping constraints in folk song is completely idiomatic and cannot be stated as a phonological fact. For this reason the theory explored in Rodríguez-Vázquez (in press) needs to be applied to at least a sample corpus of art song, a subgenre of song built on similar principles to those of folk song, which nevertheless differs from the latter in that art song composers consciously try to avoid stress mismatches as much as possible, tending towards a high level of agreement between speech prosody and music. The goal of the analysis of a sample of art song is, therefore, to revisit the conclusions reached in Rodríguez-Vázquez (in press), in such a way that the observed rules of text-setting will be either stated as idiosyncratic principles of English and Spanish folk song, or else confirmed as general principles of text-setting for any vocal genre in English and Spanish, which are grounded in the phonology of the corresponding language.

The paper is divided into two main parts. The first one constitutes a brief overview of the typological classification of Spanish and English with reference to speech and verse rhythm. The second part is an analysis of the process of text-setting in English and Spanish art song in relation to metrical and grouping constraints (Hayes and MacEachern 1996; Rodríguez-Vázquez, in press).

2 THE PROSODY OF ENGLISH AND SPANISH

English and Spanish, like most languages in Europe, are stress languages, meaning that they use stress to mark syllable prominence. Stress languages have been further classified into stress-timed and syllable-timed languages (Pike 1945, Abercrombie 1967). In syllable-timed languages, syllables tend to be perceived as rhythmically equal, while in stress-timed languages, stresses fall at perceptually equal intervals. In the former group the syllable is considered the major unit of rhythm, while in the latter this role is played by the foot. Pike (1945) classifies English as the stress-timed language *par excellence*, while Spanish is considered one of the prototypically syllable-timed languages. Up to the present day, nearly all the works that deal with the study of speech rhythm in these and other languages take Pike's (1945) theory as a theoretical point of departure, either to reassert the validity of his classifications or to contradict them. Since there have been numerous articles and reviews written on this topic, I will not discuss this issue further. Suffice it to say, for the purpose of this paper, that the most salient feature of stress-timed languages is the existence of vowel reduction, that is, the neutralisation of vowel quantity and quality – unstressed vowels tend to

be centred and realised as a schwa –, which is linked to the rhythmic requirement that stresses fall at roughly equal intervals. In Spanish, given that stresses do not have to fall isochronously, vowels are not reduced, and syllables are kept untouched, thus becoming the markers of rhythm in this language.

Turning to verse prosody, there is no surprise in the fact that the speech prosody of a language correlates to its verse prosody. According to this, Spanish verse is syllabic, that is, the syllable constitutes the main rhythmic unit in Spanish verse, which can be proved by the fact that much Spanish verse has a perfectly regular syllable count – it is isosyllabic. Spanish verse takes also into account metrical accents, so that lines carry a fixed number of rhythmic accents on specific syllables, one of which is invariably the last-but-one syllable in each line. Spanish isosyllabic poetry uses a series of metrical devices – synalepha, synaeresis, hiatus and dieresis –in order to regularise syllable counts and force rhythmic accents to fall on their corresponding syllables, thus rendering the line metrical. English verse is typically accentual-syllabic. Present-day English verse is built upon the basic principle that there has to be a certain number of stresses per line, each of which gives rise to and governs its respective foot. English feet are said to be isochronous, at least perceptually. This entails that the duration of syllables has to be adjusted so that stresses fall at perceptually equal intervals, a phenomenon which corresponds to the main building principle of English speech prosody, that is, reduction of vowel sounds in order to get a specific number of isochronous feet per line.

In the case studies that follow I explore the behaviour of English and Spanish verse when set to music in art song, so that the stated principles at work in speech and verse prosody can be either confirmed or contradicted.

3 CASE STUDY I: "LOVELIEST OF TREES"

"Loveliest of trees" was composed by G.Butterworth in 1911 and is based on the poem of the same name written by A.E. Housman in 1896. Housman's poem is organised into three stanzas of four lines each. Each stanza is delimited by punctuation and syntax rather than by rhyme. As can be observed in Table 1, rhyme works at the couplet level, while punctuation and syntactic closure both work at the quatrain level. There are four feet within each line, predominantly iambic. This pattern gets challenged in the first foot of lines one and five, where we can observe a substitution of a trochee – 'inversion' (in bold) – and in lines 4, 6 and 10, which do not follow the metrical pattern established for the other lines, as the second foot has a weak position missing, something which renders those lines, in principle at least, unmetrical.

| Line	Syllables	Feet/Line	Rhy.
Loveliest of trees, the cherry now	8	Inverted iambic tetrameter	a
Is hung with bloom along the bough,	8	Iambic tetrameter	a
And stands about the woodland ride	8	Iambic tetrameter	b
Wearing white for Eastertide. Ø	7	Inversion + missing weak syll.	b
Now, of my three-score years and ten,	8	Inverted iambic tetrameter	c
Twenty will not come again, Ø	7	Inversion + missing weak syll.	c
And take from <u>seven</u>ty springs a score,	8	Iambic tetrameter	d
It only leaves me fifty more.	8	Iambic tetrameter	d
And since to look at things in bloom	8	Iambic tetrameter	e
Fifty springs are little room, Ø	7	Inversion + missing weak syll.	e
About the woodlands I will go	8	Iambic tetrameter	f
To see the cherry hung with snow.	8	Iambic tetrameter	f
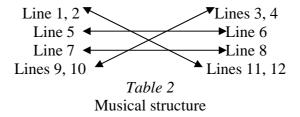
Table 1
Scansion of "Loveliest of trees"

Bearing in mind the high degree of metricality of the poem, we can assume that Butterworth did not want to upset its pristine structure.

Figure 1
Musical score of "Loveliest of trees" (vocal melody only)

This song constitutes a perfect blending between art and folk song, which can be observed in its metrical and melodic structure. The first part comprises the first and third stanzas, which are set in a rhapsodic, art song style. The actual metrical notation is not rigid, so the few stresses which fall on weak syllables do not constitute real mismatches. The second part comprises the second stanza, which is composed in a folk song style. It follows the prosody of the words and, at the same time, achieves perfect metricality. These two main parts can be further subdivided, as the surface structure of the melody shows a series of subtly realised parallelisms which bring it close to the basic principles of folk song composition. We can observe that there is an instance of parallelism between the first two lines and the last two lines. In both cases this parallelism leaves out three syllables – the last three syllables of line one (-*long the bough*) and the first three syllables of line eleven (*a-bout the*). Line 3, which is almost bare harmonically, is linked to line 4 to form the second musical phrase, which is loosely parallel to the musical phrase formed by lines 9 and 10. Lines 5 and 6 are melodically parallel, while lines 7 and 8 are also loosely parallel. In conclusion, the setting of the poem describes a chiastic structure, illustrated in Table 2, where the outer lines mark the beginning and, more importantly, the sense of closure of the song, while the middle lines develop the musical and lyric elements.

Table 2
Musical structure

At the metrical level, the song displays a series of interesting mismatches between the prosody of the words and the note values, a phenomenon which is related to the art song character of the first and third parts. Although Butterworth consciously simplified the piano accompaniment in order not to upset the flowing of the poem realised in the melody, at

certain points the musical setting seems to intentionally 'disagree' with the verse prosody, mostly in terms of the arrangements of durations. The very first line of the poem (bars 4–6) is a good example of this rearrangement of durations.

(1)

```
x                                    x
x                 x                  x                  x
x        x       x    x              x       x      x       x
x    x x x   x x x     x    x     x x x x  x x     x
Love-                 liest  of  trees                    the
```

In (1), where each column represents a quaver beat, the word *loveliest* is set to music in a way which defies both prosodic and vocal music expectations. Its first syllable, *love-*, is set to a difficult high E which then forms a melisma – the setting of a single syllable to more than one musical pitch – with D sharp and is subdivided into two, as the musical setting forces the singer to prolong the vowel sound in the third beat of the bar, while the second syllable, *-liest*, is practically squeezed into the last beat of the bar together with the preposition 'of'. This negation of the listeners' expectations in terms of durations recurs, as the insertion of certain note values in the middle of a line creates a sort of caesura-effect. Such is the case of the setting of *trees* in line 1, *white* (set to a high E, like *love-* in the first line) and East- in line 4 and *wood-* in line 11. Summarising, there is a series of beautiful effects achieved by mismatching certain lexical words in terms of duration and pitch. The overall effect is that of a mismatching in the normal enunciation of the phrases, which are contradicted in ways that the listener nevertheless understands. These are not true mismatches.

The relative durational freedom applied to the setting of Housman's poem solves the apparent unmetricality of lines 4, 6 and 10, which, as we observed in Table 1, start with an inverted foot, while the second foot has a missing weak position. Butterworth's solution to this metrical problem is as follows. In line 6, *Twenty will not come again*, the durationally stretched syllable is *twen-*, and the same happens in line 10, *Fifty springs are little room*, where the elongated note corresponds to the syllable *fif-*. For line 4, *Wearing white for Eastertide*, the music makes it metrical by inserting a long note in *white*, thus compensating for the missing weak syllable.

There are a few instances of stress-beat mismatches, some of which happen on primary counts: a*bout* (3rd line; bar 10), a mismatch that follows the verse prosody, and not the phonological prosody; *I* (3rd line; bar 39), which has to do with the crossing between real and notated metre. The vast majority of those mismatches occur on secondary counts, that is, on the third beat of the bar: love*liest* (1st line; bar 4); *of* (line 2nd line; bar 22), *will* (3rd line; bar 25); *since* (1st line; bar 32), a*bout* (line 3rd line; bar 37). As can be observed, most of the mismatches found in the text-setting of Housman's poem correspond to grammatical words, and most of them fall on secondary counts. They are minor mismatches, which are acceptable in English text-setting and therefore cannot be judged as ill-formed.

4 CASE STUDY II: "OLAS GIGANTES"

"Olas gigantes" (*Gigantic waves*) is one of the six poems by G.A. Bécquer set to music by F. Mompou in 1971. The poem is subdivided into four stanzas of four lines each, of which the fourth is much shorter than the other three (heptasyllabic versus hendecasyllabic lines). Synalepha (underlined in Table 3) is realised whenever possible so that the number of syllables per line remains stable. The rhyme scheme remains untouched throughout the whole poem: even lines rhyme, while odd lines do not.

Stress-placement structures are consistent throughout the poem. There is a series of structures which gets repeated. Of these, the most salient one is that the fourth line of each quatrain realises only two stresses (on the 2nd or 4th, and 6th positions), while the rest show

three or even four stresses. There is a fixed stress on the last-but-one (10th) syllable of each
line, which is a rule in Spanish poetry.

Line	Syllables	Stressed positions	Rhyme
Olas gigantes que os rompéis bramando	11	1, 4, 8, 10	_
en las playas desiertas y remotas,	11	3, 6, 10	a
envuelto entre la sábana de espumas,	11	2, 6, 10	_
¡llevadme con vosotras!	7	2, 6	a
Ráfagas de huracán que arrebatáis	11	1, 6, 11	_
del alto bosque las marchitas hojas,	11	2, 4, 8, 10	a
arrastrado en el ciego torbellino	11	3, 6, 10	_
¡llevadme con vosotras!	7	2, 6	a
Nubes de tempestad que rompe el rayo	11	1, 6, 8, 10	_
y en fuego ornáis las desprendidas orlas,	11	2, 4, 8, 10	a
arrebatado entre la niebla oscura,	11	4, 8, 10	_
¡llevadme con vosotras!	7	2, 6	a
Llevadme por piedad a donde el vértigo	11	2, 6, 10	_
con la razón me arranque la memoria.	11	4, 6, 10	a
¡Por piedad! ¡Tengo miedo de quedarme	11	3, 4, 6, 10	_
con mi dolor a solas!	7	4, 6	a

Table 3
Scansion of "Olas gigantes"

The setting of the poem does not fully conform to that of a lyrical song, but explores
the limits between this genre and opera (Figure 2). In spite of this operatic character, which
normally corresponds to a high degree of metricality, some of the proportions are not metrical
in themselves – observe, in bars 5 and 8, the long note half way through the first line, on the
syllable *-tes*, then on *-péis*, but not at the very end of the line, on the syllable *-do*. In most
cases, the metricality of the words is used to render the song's rhetorical style visible – we
can observe the setting of the synalepha *que os* to the first beat of bar 6, corresponding to a
high pitch (G flat), which makes this syllable doubly salient.

There are numerous examples of this interaction between the character of the song and
the metrical setting of the words. Bars 14–18 are a build-up towards the climax, achieved by
following from a chromatic rise in the melody and a dense piano part in the accompaniment.
From bar 16 to bar 21, the rhetorical style of the song is evident, with high notes and
lengthening of notes. The syllable *-vad-* in *llevadme* is the dramatic climax of the phrase. The
line *llevadme con vosotras* has a role analogous to that of the refrain in a folk song. Three of
the four stanzas in the poem end with this line, which demarcates the quatrains – as
previously mentioned, this last line is heptasyllabic, whereas the previous three are invariably
hendecasyllabic. The setting of this climactic line is not that of a typical refrain, but follows
the rhetorical character of the song. In each of the three instances where it appears (beginning
bar 18, bar 34, bar 55), the line in question is set to a different musical phrase. We could say
that the composer is imitating how an actor would deliver the line in a different way when
speaking it for a second time. In any case, whatever the composer does, he always matches
the three syllables in *vosotras*.

In terms of grouping constraints, although the internal structure of "Olas gigantes" is
more complex than that of "Loveliest of trees", the former follows the latter's tendency
towards macrostructural parallelism. In this respect, we can observe that the first and last
stanzas (bars 3–22 and 63–84) are musically parallel, and the same happens with the second
and third stanzas – bars 23-37 and 40–57. Bars 63–84 are what in musical terms is called a
'reprise' of the theme exposed in bars 3–22. This is a clear instance of parallelism stretches

along approximately 20 bars. As happened with "Loveliest of trees", the setting of "Olas gigantes" forms a chiastic structure:

Table 4
Music structure

Figure 2
Musical score of "Olas gigantes" (melody)

The enforcement of parallelism partially explains the mismatches found in these bars, as the composer is using identical metrical structures and laying the syllables under the corresponding notes, almost without rearranging the consequent mismatches. This can be observed in bar 63, where the half-line *llevadme por piedad* is made parallel to bar 3, where the half-line *Olas gigantes* is set (2). The fact that the former has one more syllable than the latter forces the composer to introduce an extra note-value in bar 63. The mismatches found in bar 3 do not appear in line 63, but a new mismatch occurs in the latter.

(2)

Ó-	**las**	gi-	gán-		**tes**
Lle-	vád-	me	**por**	pie-	dád

The preposition *por* is mismatched several times, as the line *por piedad* is repeated – something which does not happen in the poem. This indicates that the mismatch is deliberately done.

The poem shows thirteen instances of synalepha (Table 3). The musical setting of the poem keeps synalepha in twelve cases, making two syllables correspond to a single note value. Such is the case of the synalepha between the relative pronoun *que* and the reflexive pronoun *os* in the first line. In bar 52, the composer is forced to divide one of the two prosodic synalephas so that the line ends in two crotchets. The setting of the two contiguous vowels in *arrebat<u>ado en</u>tre* to two different note values creates an instance of hiatus – the breaking of a synalepha.

Mompou's setting of Bécquer's poem shows a series of stress-beat mismatches, both on primary counts – the first beat of each bar – and on secondary counts – in this case, given that the time signature is 2/4, the second beat of each bar. Let us have a look at the mismatches on primary counts first: <u>*que os*</u> (1st line; bar 6); <u>*de hu-*</u> (1st line; bar 24), *las* (2nd line; bar 28), *a*rrastrado (3rd line; bar 30); *tem*pestad (1st line; bar 41), *des*prendidas (2nd line; bar 48), en*tre* (3rd line; bars 52–53); *pie*dad (1st line; bar 64), *a* (1st line; bar 67), <u>*de el*</u> (1st line; bar 67), *por* (3rd line; bar 75), *mi* (4th line; bar 80). There are numerous mismatches on secondary counts: o*las* (1st line; bar 3), *en* (2nd line; bar 9), *y* (2nd line; bar 12), en*tre* (3rd line; bar 15) – *entré* with the stress on the last syllable would be the 1st person singular of the past tense of entrar (*to come in*); this is what Janda and Morgan (1988: 160) refer to as the levelling of stress-marked distinctions, where the context disambiguates the meaning – sába*nas* (3rd line; bar 16), *con* (4th line; bar 20), voso*tras* (4th line; bar 21); arreba*táis* (1st line; bar 25), ho*jas* (2nd line; bar 29), *tor*bellino (3rd line; bar 32), *con* (4th line; bar 35); <u>*y en*</u> (2nd line; bar 46), *arre*batado (3rd line; bar 51), *con* (4th line; bar 56); *don*de (1st line; bar 67), *vérti*go (1st line; bar 68), *la* (2nd line; bar 69), *la* (2nd line, bar 72), *de* (3rd line; bar 77)

The metrical mismatches in this song have to do with the position of the stressed syllables, which fall on weak beats, and unstressed syllables, which fall on strong beats. However, mismatches are emphasised by pitch, that is, on many occasions the mismatched syllable is set to a high pitch, which makes the mismatch even more salient. An example of this can be found in bar 24, where the metrical mismatch in <u>*de hu*</u>racán is set to a high note, while the heavy accompaniment on the first beat of the bar makes it explicitly a mismatch. The same happens in bar 25 – a*rre*batáis –, which is musically parallel to the former. On other occasions, mismatches are realised exclusively by pitch and duration, in such a way that these two contradict what the metrical arrangement of the words to the music establishes. Such is the case of the last syllable in arrastrá*do* (bar 30), which is set to the weakest beat in the bar, and also to a melisma. In terms of metre, the syllable *-do* is not mismatched, but the presence of the melisma on this syllable makes it salient in terms of pitch and duration. This observation contradicts Morgan and Janda's (1989: 277) statement that pitch, duration and loudness do not work as cues for stress in music. In "Olas gigantes", a syllable that falls on a musical downbeat is perceived as stressed by default, while any other extra musical accents are perceived as marked. On the other hand, pitch and duration act as secondary stress cues in text-setting, and can reinforce the effect of the downbeat or contradict it.

In this instance of Spanish art song, there are as many lexical as grammatical mismatches, something which does not happen in the English song. Given that the setting has a time signature of 2/4, many of these mismatches, particularly those with long words involved, are virtually unavoidable (see Janda and Morgan 1988: 167–168). In Spanish, the prosody of the words can be altered to conform to a specific verse design, but that design is not enforced when the text is set into music. Actually, that intermediate stage – from speech to verse – can be practically neglected, and the prosody of the words can be directly

rearranged to fit a specific tune. In conclusion, the analysis of "Olas gigantes" confirms the hypothesis that, in Spanish, musical rhythm and metre do not agree with either verse prosody or speech prosody, but work independently of both.

5 CONCLUSIONS

The ranking of metrical and grouping constraints in folk song (Rodríguez-Vázquez, in press) points to a correspondence between prosodic constraints and text-setting constraints. This fact might be described as idiomatic, in which case it could not have been generalised as a phonological fact. For this reason, the hypothesis that the ranking of text-setting constraints in vocal music reflects the prosody of a specific language has been tested on art song.

In the English case study, we observed that the building principles of art song respond to (i) a rigid alignment between strong beats and lexical stresses at the metrical level, which relates to the isochronous occurrence of stresses in English speech and verse, and (ii) a relative flexibility at the grouping level, where the verse lines do not necessarily follow a pre-established structure, which follows from the fact that vowels – and thus syllables – can be reduced or stretched for rhythmic purposes. The analysis of "Loveliest of trees" thus confirmed the hypothesis that the principles applied to folk song (Rodríguez-Vázquez, in press) are not idiosyncratic but respond to a general set of constraints common to speech, verse and song. The analysis of the Spanish case study confirmed the hypothesis tested for Spanish folk song (Rodríguez-Vázquez, in press), namely that the syllable is the most important unit of rhythm, in such a way that (i) the position of lexical stresses is not essential for the perception of rhythm, which related to the fact that the syllable is the main unit of rhythm in Spanish, and (ii) the parallel arrangement of the syllables in different lines and stanzas must always be observed, which follows from the perceptually isochronous realisation of syllables in speech and verse.

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The Typology of Number Borrowing in Berber

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The question of which numbers are most easily borrowed, and in which contexts, has implications for an understanding both of historical change and language contact and of the extent to which the linguistic behaviour of numbers can be related to independent cognitive factors. In the Berber languages of North Africa, numbers are commonly clear-cut loanwords from Arabic; some languages retain as few as one or two non-Arabic number words, while others preserve a complete inventory. Closer examination reveals differences in intensity of borrowing even within single languages, depending on the numbers' functional usage. The languages in question are closely related to one another and are all influenced by mutually comprehensible varieties of Maghrebi Arabic, allowing what amounts to a controlled experiment, with extremely similar contact situations in different areas yielding a wide spectrum of possible outcomes. Careful examination of this spectrum allows us to set up a typology of numeral borrowing in Arabic-Berber contact, showing how linguistic, social, and cognitive factors all affect the process of number borrowing and how synonymy may emerge as an unstable transitional stage in the adoption of a new system.

1 INTRODUCTION

The key question in studying language contact is: what factors affect the borrowing of a given feature? The greater the differences between the situations compared, the harder it is to isolate the relevant factors. Berber offers a particularly promising opportunity to disentangle this issue; it is spoken in numerous relatively isolated enclaves across North Africa, mostly in fairly similar sociolinguistic situations and in contact with the same languages. While numbers tend to receive relatively little attention from linguists, this particular semantic domain has some notable advantages in investigating contact. Numbers are readily borrowed in Berber, and are much better documented than most features of interest in the language; moreover, the Arabic and Berber number systems are sufficiently different to ensure no difficulty in identifying the loanwords.

1.1 Current situation

Berber is a family of closely related languages indigenous to North Africa, touching the Mediterranean and Atlantic to the north and west, and spoken as far east as Siwa in Egypt and as far south as northern Burkina Faso (with emigrant groups even further afield.). The term "Tamazight", the traditional autonym of a number of Berber languages, is increasingly used as an alternative. The largest Berber languages by population are, from west to east: Tashelhiyt/Shilha (south Morocco); Middle Atlas Tamazight (central Morocco); Tarifit/Rifi (north Morocco); Taqbaylit/Kabyle (northeast Algeria); Tashawit/Chaouia (northeast Algeria). While these are spoken across reasonably large, densely populated, continuous areas, many varieties are restricted to a handful of villages (eg Ghomara in north Morocco) or a single oasis (eg Siwa in Egypt), often with little contact with other Berber speakers. The mutual intelligibility of Berber varieties varies substantially, making a division into languages difficult in practice; the whole family could be seen as consisting of two more or less broken up dialect continua, one in the North and one in the South, with a few more divergent outliers around the edges.

Almost every Berber language is surrounded by colloquial Maghreb Arabic speakers on all sides, and is spoken in a state whose official language is Modern Standard Arabic, and in which the ex-colonial language (usually French) remains significant in official domains. The languages of the Tuareg (a sparse, partly nomadic population spread across a vast expanse of the Sahara) have come under much less Arabic influence than others; along with Zenaga (the nearly extinct Berber language of Mauritania), they have also been influenced by sub-Saharan African languages.

1.2 History

Berber is a subgroup of Afro-Asiatic; as such, it is distantly related to Arabic (and other Semitic languages of the Middle East), Egyptian, Somali (and other Cushitic or Omotic languages of East Africa), and Hausa (and other Chadic languages of West Africa.) It was already spoken in North Africa before the Roman conquest, as the Tifinagh inscriptions of the Numidian kings attest.

In the 7th century, the Arab Umayyad Empire conquered most of North Africa. While the area resumed independence within a century or so, the results of this conquest were lasting; most northern Berbers converted to Islam, and Arabic became an important part of city life, widely used in government and trade. In the 11th century, large Arab tribes (in particular the Banu Hilal) immigrated en masse from Arabia via Egypt, leading to the collapse of state authority in much of North Africa and to the presence of large rural Arabic-speaking groups. This seems to have been a turning point in the Arabization of North Africa; with Arabic both useful on a local scale and prestigious on a broader scale, many Berber groups gradually shifted to Arabic. Some have done so within living memory; for example, the village of Sened in Tunisia was still largely Berber-speaking at the beginning of the 20th century, but is now entirely Arabic-speaking. The long-standing influence of Arabic is reflected in most Berber languages' tendency to use Arabic numbers.

2 SAMPLE

To establish a database of patterns in Berber number borrowing, I examined a total of 53 source-dialect pairs, with dates ranging from 1883 to 2007. Some were by native speakers, some by linguists, some by colonial administrators; but one advantage of examining this topic is that even amateur non-speakers can usually be trusted to get cardinal numbers right.

2.1 Sample size

Giving an exact count of languages is less than meaningful when many of them seem to fall into dialect continua, but if the classification of the Ethnologue (2005) is followed, my sample includes 19 out of 26 languages. Of the missing ones, Guanche is excluded deliberately: it has been extinct since the 1600s, the scanty materials surviving are hard to interpret, its classification is not entirely certain, and its speakers were not in regular contact with Arabic speakers. No adequate data on the number system appears to have been published for Ghomara or Awjila, and none was found for Sokna, Temacine, or Judeo-Berber. In short, this sample is nearly complete. However, the Ethnologue count is problematic in that some varieties - eg those of the *ksours* of southwestern Algeria, or southern Tunisia - are classed by the Ethnologue as part of a neighbouring language despite showing rather different characteristics, while at least one, Judeo-Berber, is split despite being mutually comprehensible with Tamazight (Galand-Pernet et al. 1970:14.)

A less ambiguous measure of sample diversity is the number of geographically separated enclaves examined - 25. Even this, however, runs into problems. The enclave with the largest population - central/south Morocco - displays several distinct patterns of number borrowing, suggesting that an appropriate unit in this region would be smaller.

2.2 Results

The results may be summarised as follows. (See appendix for fuller details.) Words for "million" and above are excluded, since, where attested, these tend to be French or other European loanwords (often via Arabic). "Langs" counts the number of Ethnologue languages in the type, and "Sources" the number of source-dialect pairs.

Type	Berber	Arabic	Sources	Langs	Enclaves	
R*	all attested	none	10	6	3	S Sahara
Transitional	1 to ≥10,000	≥ 1000	1	1	1	Tumzabt (1898)
Transitional	1 to 29	≥ 3	1	1	1	Tashelhiyt (Tazerwalt)
Transitional	1 to ≥50	≥ 21	1	1	1	Tumzabt (1969)
Transitional	1 to 99	≥ 20	1	1	1	Ghadames (1904)
Transitional	1 to ≥30	≥ 11	1	1	1	Ghadames (1973)
Transitional	1 to 10	≥ 2	1	1	1	Teggargarent
R3	1 to 3	≥ 4	8	3	3	CNW Africa
Transitional	1 to 3	≥ 3	1	1	1	Teggargarent (Maliki)
R2	1 to 2	≥ 3	21	10	16	Most of N Africa
R1	1 only	≥ 2	3	2	2	N Morocco
Mixed	1-6, 8-10	7 (>10?)	1	1	1	Jerbi (1883)
Mixed trans.	1 to 19, partly 21-99	≥ 10*	1	1	1	Tashelhiyt (Ighchan)
Mixed trans.	1 to 19, partly 21-99	≥ 20*	1	1	1	Tashelhiyt (Achtouken)

Table 1 - Typology of Number Borrowing in Berber

The meaning of the type labels will be clear; R* refers to languages (such as Tamashek) which have retained all Berber numbers, Rn to those which consistently use Berber below n and Arabic numbers above it. In all but a few "mixed" cases, all cardinal numbers above some point are Arabic, and all below some point are Berber. One of the exceptions - Jerbi - is based on inadequate data from a single informant, while the other two (dialects of Tashelhiyt) appear to be rare cases where units, rather than numbers, have been borrowed; in these, the number 20 has been borrowed from Arabic and is used in forming higher numbers vigesimally, using Berber words for the coefficients. However, in a number of rather diverse "transitional" cases (including the two Tashelhiyt varieties), some numbers can be expressed in either Arabic or Berber.

2.3 Geographical distribution

R* is concentrated in the south (mainly Tuareg and Zenaga), and R2 is spread across most of the north. R3 is restricted to central Morocco and the Gourara oases of SW Algeria (formerly ruled by central Moroccan tribes), while R1 is restricted to Tarifit in Northern Morocco and nearby enclaves of what amounts to the same language. Transitional/mixed types are found between them, in southern Morocco, in the Mzab and Ouargla in central Algeria, and on Jerba in southern Tunisia. In short: in the South, where Arabic influence is least, the original Berber numbers are retained. In the North, where Arabic influence is greatest, the Arabic system almost entirely replaces Berber.

3 IMPLICATIONS

The sample is consistent with three typological claims, true of Berber and likely to be true elsewhere:

a) 1 is always retained. (Greenberg 1978:290 notes that he knows of no exceptions to this; in the few cases of which I am aware, such as Japanese and Korean, in which a word for "one" has been borrowed, it coexists with a native word for "one".)

b) 2, and then 3, are far more often retained than any higher numbers.

c) If *n* is retained, so are all numbers < *n* (cp. Greenberg 1978:289's near-universal 54: "If an atomic numeral expression is borrowed from one language into another, all higher atomic expressions are borrowed.")

3.1 Cognitive explanations

A number of motivations may be found for these empirical rules. The universal retention of 'one' may be related to the fact that it serves not only as a number but as a determiner across most Berber languages (as in Maghreb Arabic), eg:

(1)   *hœrœt iyœn*
        thing   one
        'a (certain) thing' (Tamashek - Heath 2005:250)

This second function gives it a role outside the numeric system proper, and renders it considerably more frequent than would otherwise have been the case, discouraging replacement.

The second generalisation - that 2 and 3 are much more widely retained than higher numbers - is paralleled by several other typological facts. Dual numbers are well-attested cross-linguistically, and trial numbers, if rare, are found in a number of languages; yet higher numbers, where found, are always vague, referring not to exactly *n* items but to an inexact large or small number of items (Corbett 2000.) The highest number found in non-productive number systems - ones with no productive means of forming higher numbers - is never greater than 5, and is commonly 2 or 3 (Greenberg 1978:256.) A cognitive motivation may plausibly be sought for these typological facts. A variety of independent facts suggest that small numerals, especially 2 and 3, are perceived rather differently than other numerals. 2 and 3 can be subitised - perceived without counting - by the typical person (Hurford 1987.) Some aspects of the concepts of "2" and "3" are acquired much earlier than other numbers - one-week-old newborns distinguish 2 dots from 3 dots, but not 4 from 6 (Antell & Keating 1983.) The mean short-term memory limit is 3-5 items (Cowan 2001), implying that 4 or more items will be outside the short term memory of many people some of the time; only 3 or fewer items can be relied upon to fit in short-term memory.

3.2 Sociolinguistic explanations

One of the most interesting aspects of this typology is that - while in the South we see the original system and in the North we see the results of a far-reaching shift - in much of the middle, in a zone stretching from southern Morocco to northern Libya, we can witness the shift still underway. This is shown by direct evidence for Tumzabt (central Algerian Sahara), Ghadames and Nafusi (NW Libya), where (respectively) sources from 1898/1904/1898 show more Berber numbers than ones from 1969/1973/1942. Indirect evidence is available for Tashelhiyt (south Morocco) and Teggargarent (central Algerian Sahara), and shows some very interesting points about how the change takes place. In both the latter, the choice of

Arabic or Berber numbers varies partly with the speaker's gender. For the Tashelhiyt dialect of Tazerwalt, Stumme tells us:

> Also, for the numbers 3-29 one frequently chooses the Arabic terms (ie. those in §171.) The women and small children of the Tazĕrwalt-Shlûḥ by preference count (as far as possible) with the Berber numbers, the men by preference (from 10 up) with the Arabic ones. Therefore the Shlûḥ call the Berber numbers *laḥsâb ntimĝârin*, and the Arabic ones *laḥsâb niirgâzĕn* - ie women's counting vs. men's counting. (Stumme 1899:102)

For Teggargarent, the language of Ouargla in Algeria, early reports likewise indicate that '[*chared*, Berber for '3'] is scarcely used except by women, men usually using *tlata* [Arabic for '3']' (Biarnay 1925:188.) This matches very well with what would be expected from consideration of North African social norms. Men travel more freely than women, normally do their household's shopping, and are much more likely to engage in trade. They thus have more occasions to speak to Arabic monolinguals, and more incentive to use Arabic numbers; it is to be expected that, as observed in these two cases, they will switch sooner than women.

In Teggargarent religious affiliation is also a factor. Some speakers are Maliki Muslims, along with most Algerians - including their Arabic-speaking neighbours. Others are Ibadi Muslims, belonging to a small, closely-knit religious minority with a traditional tendency to avoid close relations with non-members. Most Algerian Ibadis speak Tumzabt, the Berber language of the nearby Mzab region; and Tumzabt has retained Berber numbers up to at least 20, so one might expect the Ibadi Ouarglis to use more Berber numbers than their Maliki neighbours. Sure enough, forms above 3 are used mainly by Ibadis, according to Delheure (1987). Curiously, Biarnay (1925) reported that Teggargarent used only Arabic numbers above three. Either his informants on this matter were Malikis and the situation was much the same then as in 1987, or easier contact with the Mzab in the twentieth century has led to a resurgence of previously disused Berber numbers among the Ibadis.

4 INTRA-LINGUISTIC FUNCTIONAL VARIATION

A closer look at the languages of the north reveals some interesting uses of Arabic numbers in places where Berber ones would be expected. In many R2/R3 languages, Arabic numbers have replaced even the lowest numbers in certain specific contexts. The idea of time-telling using hours and minutes is a comparatively recent introduction to most North Africans, and has typically reached Berber-speaking regions through the largely Arabic-speaking cities; perhaps as a result, most Berber languages use Arabic numerals throughout in telling the time, irrespective of how the corresponding numbers would otherwise be expressed. Compare Tarifit (Ouhalla, p.c.):

(2)   *rwaḥda*   vs.   *iʒən*
        "one o'clock"   "one"

to Maghreb Arabic:

(3)   *əl-waḥd-a*   vs.   *waḥəd*
        DEF-one-F   one
        "one o'clock"   "one"

To a lesser degree, the same is often true of higher units of time. In Maghrebi Arabic itself, such units are normally counted using a slightly different system than the general

number system: the dual suffix *-ayn* is used rather than the number *zudʒ* "two", and shortened forms of the numbers 3-10 are used (thus *θəlθ‑, ‫‬rəbʕ‑, xəms‑...* instead of the full forms *θlaθa, ‫‬rəbʕa, xəmsa...*) For example, "two days" is *yumayn*, and "three days" *θəlθ iyyam*, whereas "two pens" is *zudʒ stiluwat* (never **stiluwin*), and "three pens" *θlaθa stiluwat*. These forms cannot be broken up into morphemes capable of standing alone (there is no word *-ayn* or *θəlθ‑*); this has no doubt contributed to their commonly being borrowed as whole units into Berber, rather than having their component morphemes translated. For example, in Siwi (Laoust 1932) we see:

(4)   *iyumain*   vs.   *sən*
       "two days"   "two"

       təlt iyam   vs   *tlata*
       "three days"   "three"

Another domain in which Arabic numbers are, less commonly, reported to take over is sequential counting. In Ayt Ayache Tamazight 'The Arabic numbers 1- 3 are used only for counting in order without naming things... The Berber numerals are used elsewhere'. (Abdel-Massih 1971:22.)

Several easterly Berber languages have adopted the Arabic ordinal system for two and above, even while retaining a Berber cardinal number for "two"; the inherited Berber pattern is to form ordinals (other than suppletive "first") with a relative pronoun plus the number, which burdens the lexicon considerably less but leads to longer words. Compare the Nafusi system (Beguinot 1942:127-129, notation preserved):

(5)   *úǧun,*   *sen,*   *tláta,*   *árb`a...*
       one,   two,   three,   four...

       amezwâr,   *ettâni,*   *ettâlet,*   *errâba`...*
       first,   second,   third,   fourth

to the Maghreb Arabic one (Dellys dialect):

(6)   *waħəd,*   *zudʒ,*   *θlaθa,*   *ṛəb`a...*
       one,   two,   three,   four...

       əl-luwwəl, *əθ-θani,*   *əθ-θaləθ,*   *əṛ-ṛabə`...*
       the first,   the second,   the third,   the fourth

Unlike cardinal numbers, these specialised uses of numbers are not covered in sufficient numbers of sources to permit a full typological survey of borrowing patterns in them. It is to be hoped that with new fieldwork a more complete picture of the variation across Berber in these domains will emerge. The available information is enough to indicate that synonymous Arabic and Berber numbers may acquire different uses, rather than being mutually substitutable.

5 CONCLUSIONS

Number borrowing is affected by social factors, such as the degree and domain of contact; by cognitive factors, such as the possibility of subitisation and the processes involved; and by linguistic factors, such as the other functions of the number and the transparency of words

containing it. Synonymy is possible in number systems, and appears to be a diachronically unstable transitional stage in the adoption of a new system.

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APPENDIX: SAMPLE DETAILS

R*: Tamasheq (Mali: Heath 2005:245-254, Burkina Faso Tamashek: Sudlow 2001), Tahaggart Tamahaq (Tahaggart: Hanoteau 1896:127-131, Tahaggart: Cortade 1969:26-27, Ghat: Basset 1883:318, Ghat: Nehlil 1909:65-69), Tawallammat Tamajeq (Basset 1887:445-446), Tayart Tamajeq (Kel-Oui: Basset 1883:318), Tumzabt (Basset 1892:27-29), Zenaga (Faidherbe 1877:17)

R3: Taznatit (Basset 1887:395, Timimoun: Boudot-Lamotte 1964:505), Teggargarent (Basset 1892:27-29, female: Biarnay 1925:188-192), Middle Atlas Tamazight (Ayt Ayache: Abdel-Massih 1971:22-33, Southern: Willms 1972:172-173, 261-264, Ayt Sgougou: Loubignac 1924:251-253, Zemmour: Johnson 1966:105)

R2: Chaouia (Ahmar-Khaddou: Mercier 1896:36-37), "Chenoua" (Ouarsenis: Basset 1895:§81-82, A`chacha: ditto, B. Halima: ditto, Beni-Menacer: ditto, Haraoua: ditto, Bissa: Genevois 1973, Chenoua: Laoust 1912), "Nafusi" (Douiret: Gabsi 2003:118-120, Tamezret: Ben Mamou 2004, Nafusi: Beguinot 1942:127-128), Kabyle (Ait Menguellat: Dallet & Vincennes), Middle Atlas Tamazight (Ait Seghrouchen: Bentolila 1981:61 = Destaing 1920:175), "Middle Atlas Tamazight" (Ksours Oranais: Basset 1885:322, Figuig: Kossmann 1997:207-209), Teggargarent (male: Biarnay 1925:188-192), Temacine Tamazight (Basset 1892:27-29), Sened (Provotelle 1911:81-82), Siwi (Laoust 1932:106-107), Taznatit (Touat: Basset 1887:395, Tementit: Basset 1887:395)

R1: Senhaji (Ibañez 1959), Tarifit (Sarrionandia 1905:114ff, Ouhalla p.c.)

Transitional: Tachelhit (Tazerwalt-female: Stumme 1899:101-108, Tazerwalt-male: ditto), Tumzabt (Dallet 1969:148-152, Gourliau 1898:148ff), Ghadames (Motylinski 1904:40, Ayt Waziten: Lanfry 1973), Teggargarent (Delheure 1987)

Mixed transitional: Tachelhit (Ighchan: Galand 1988:230, Achtouken: Aspinion 1953:252ff)

Mixed: "Nafusi" (Jerba: Basset 1883:308)

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Variability in *F0* Valleys: The Case of Belfast English[*]

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We studied the alignment of the low turning point (L) in Belfast English nuclear rises with respect to a number of factors: anacrusis, segmental structure, sentence type, gender and speech style. The study of variability in low points has been neglected due to a prevailing view that *F0* peaks are variable whereas valleys are not (e.g. Arvaniti et al, 2000). Significant effects on the alignment of L were found in relation to almost all of the above factors. This reflects high variability of L in contrast to the stability reported elsewhere.

1 INTRODUCTION

1.1 Alignment of Peaks and Valleys

The study of alignment in phonetics involves the examination of high and low *F0* turning points[1] ('peaks' and 'valleys' respectively) in the intonation contour. The coordination of these turning points in time with respect to specific points in the segmental string (consonants, vowels, syllable edges etc) forms the dominant focus of study. Alignment has become increasingly prominent recently from a number of respects, yet is indebted to Bruce's (1977) work on the Swedish word accents for much of its foundations. Areas of current interest include the possibility that alignment may feature highly in distinguishing phonological categories in intonation and the possibility that alignment differences may be key to intonational differences between languages/dialects. There has been considerable examination in previous literature of various factors involved in the alignment of *F0* turning points. However, such examination has focused extensively on the peaks rather than on the valleys (e.g. Silverman and Pierrehumbert, 1990). One potential reason for this is that a number of those authors who have commented on both peaks and valleys have made a rather stark contrast between them. That is, that peaks display a tendency toward variability whereas valleys remain stable (e.g. Caspers and van Heuven, 1993; Arvaniti and Ladd, 1995; Arvaniti et al, 1998, 2000). This contrast is stated quite openly in Arvaniti et al (2000), where it is even touted as a language universal. In Arvaniti and colleagues' own work on Modern Greek, the H tone (peak) in Greek prenuclear accents is described as being very variable whereas the stability of the L tone (valley) is such that it can be defined as being located at a very fixed segmental anchoring point, 'approximately 5ms before the onset of the accented syllable' (1998: 5).

However, there has been some work to suggest that the stability of valleys may not be a language universal. We refer, in particular, to observations made by Ladd (1996) on Glasgow English. Ladd (1996) specifically notes variability in the timing of both valley and peak of Glasgow English rises. Most interestingly, he notes that the low turning point had a tendency to occur *before* rather than within the accented syllable if 'enough unstressed

[1] These turning points may be actual *F0* minima and maxima but not necessarily.

syllables' (1996: 144) preceded the accented syllable.[2] So we have here an account of variability in the valley region and also a factor involved in its motivation (i.e. the number of unstressed syllables). It seemed an ideal opportunity to see if Ladd's observations might be corroborated in other English dialects. This was the starting point for our examination of variability in the valley region of Belfast rises. Belfast and Glasgow English have been related intonationally through their inclusion in a set of dialects termed 'Urban North British' (Cruttenden, 1995; Ladd, 1996), whose unifying characteristic is that of a high proportion of rises on statements (falls are more common in Southern Standard British English).

1.2 IViE Project

The data referred to in this article comes exclusively from the corpus of Belfast English recorded in the IViE (Intonational Variation in English) project (Grabe et al, 2001). This project made a notable foray into the study of the intonation of Irish/Northern Irish English dialects by its inclusion of Belfast and Dublin (Malahide) in the nine dialects of English that were studied in total. The phonetic issues studied in the project itself included alignment (Nolan and Farrar, 1999). Belfast was among the dialects studied for that paper. The focus of Nolan and Farrar's (1999) work on alignment was exclusively on peaks, but discussed the interesting phenomenon of peak lag, in which the peak occurs beyond the accented syllable to which it is deemed to be associated. One of Nolan and Farrar's (1999) notable contributions was to show that the alignment of the peak could be affected by material preceding the peak (specifically anacrusis) as opposed to being affected only by material following the peak, as had been proposed by Silverman and Pierrehumbert (1990). They found that the presence of anacrusis tends to draw the peak leftwards. This is a point to which we will refer again in section 3.1 below.

Speakers in the IViE project were originally recorded in five different speaking styles. We make reference here to data from two of these speaking styles: Read sentences and Map task.

2 METHODOLOGY

This project involved the study of alignment in the valley region of nuclear[3] rises in two speech styles in Belfast English. The point of interest was the low turning point at the beginning of the rise (henceforth L). Analysis was conducted using PRAAT (Boersma and Weenink, 2005). This involved the use of a number of PRAAT scripts and one R script (R Development Core Team, 2006). The R script had the specific function of locating L by means of a line fitting procedure (for further details see Welby and Loevenbruck (in press)). Non-parametric statistical tests were used exclusively in the present study. There were 264 Read sentences in total, of which 193 were analysed. From an initial examination of most of the Belfast Map task corpus, we selected 126 utterances for further analysis. Any utterances without nuclear rises were omitted as were utterances with major perturbations or hesitations in the target region. It proved particularly difficult to find utterances without such perturbations in the Map task corpus, which accounts for the smaller number of utterances that were further analysed there. Both data sets were analysed separately. There were two reasons for this. Firstly, we would be able to see if the same trends emerged across two different data sets. Secondly, it enabled us to examine the two speech styles against each other, to see if differences would emerge in the alignment of L based on speech style.

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[2] Preceding unstressed syllables will henceforth be referred to by the term Anacrusis.
[3] The nuclear accent is the last pitch accent in the IP (intonational phrase), usually on the IP-final lexical word unless special emphasis (e.g. contrastive focus) is elicited.

Our hypotheses were as follows: simply, that the alignment of L would be affected by a number of factors, beginning with the factor of anacrusis, which had been raised in relation to Glasgow English.

(1)   Anacrusis
(2)   Segmental structure
(3)   Sentence type
(4)   Position of accent in the IP
(5)   Gender
(6)   Speech style

These factors fall roughly into two groups: structural ((1) to (4)) and sociolinguistic ((5) and (6)). We believe that they are not incongruent and as we will show, it is important not to restrict one's vision of the type of factors that may be involved in alignment.

If at least some of these hypotheses are borne out, it will have shown variability in alignment the valley region in this Belfast data, variability that can be accounted for. If none of the hypotheses are confirmed, it may reflect stability of alignment of the type reported elsewhere or that different variables are needed to account for any variability in the data.

2.1 General Alignment of L

Before examining the effects of the various factors mentioned above, it is useful first to note the general pattern of the alignment of L. Overall, there seems to be a difference with the Glasgow data examined by Ladd (1996), because in this Belfast data there was no strong tendency for L to align *before* the beginning of the accented syllable. If anything, the tendency was for L to align rather at the end of the accented syllable and possibly beyond it in cases. This is similar to what Lowry (1997) observed in her short treatment of alignment in Belfast English. This strong trend for alignment towards the right edge of the accented syllable has also been noted in rises in Donegal Irish [4] by Dalton and Ni Chasaide (forthcoming). Simultaneous work on Belfast English and Donegal Irish might confirm these similarities in the future.

3 RESULTS

As an initial very brief overview of our results, all hypotheses except one were supported statistically at least in some cases. The one exception was in relation to factor (4) 'The position of accent in the IP'. As it turned out, there was too little appropriate data for a real examination of the effect of this factor on the alignment of L. The vast majority of nuclear rises in this data were produced utterance-finally so different data would be needed to examine this factor properly. We now proceed to a more thorough examination of the other factors.

3.1 Anacrusis

In relation to L in this Belfast data, we hypothesised that if there were to be such an effect of anacrusis, it would be most evident between cases in which there was only one preceding unaccented[5] syllable and in which there were four or more unaccented syllables. We also

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[4] Also located in the Ulster region (though Republic of Ireland).

[5] Following Ladd (1996: 144), we assumed initially that we would examine the number of '*unstressed* syllables [our italics]' preceding the accented syllable. From looking at the two examples he provides from Glasgow English however, it appears that he in fact means 'unaccented' and not merely 'unstressed'. Therefore, we reconsidered this hypothesis in respect of 'unaccented' syllables and not just 'unstressed' syllables.

hypothesised that if there were to be such an effect, it would reflect the same tendency as Ladd (1996) had observed for Glasgow i.e. also a leftward pulling effect. Wilcoxon-Mann-Whitney tests (one-tailed) were carried out, comparing the groupings '1 unaccented syllable' and '4 or more unaccented syllables'. The distances referred to are those between the beginning of the accented syllable (c1) and L for the Read sentences and between the beginning of the accented vowel (v1) and L for the Map task.[6] The results were significant both for the Read Sentences and for the Map Task data (Read sentences: z 2.352, p<0.01; Map Task: z 2.322, p<0.025). So L was indeed aligned earlier in the accented syllable with the increase in the number of preceding unaccented syllables.

3.2 Segmental Structure

The effect on alignment of segmental structure has received a good deal of attention. Previous studies have shown the composition of the syllable rhyme in particular to influence alignment (e.g. Silverman and Pierrehumbert, 1990) though some studies have also shown an effect of the onset (e.g. Rietveld and Gussenhoven, 1995). We must preface this section though, by saying that segmental structure could only be examined in a limited way in the present study. This is because we chose to focus on accented syllables comprising mainly of sonorant segments. These cause the least degree of perturbations on the *F0* contour and thus make analysis more straightforward. Other studies have examined the effects of segmental structure on the alignment of peaks (in particular) in a less restricted way (e.g. Arvaniti et al, 1998; Rietveld and Gussenhoven, 1995; Welby and Loevenbruck (in press)). The three factors we did examine were Onset/Lack of Onset, Vowel length and Word medial /l/ or /m/. For all of these factors, we simply hypothesised that there would be an effect on the alignment of L. We did not specify the direction of that effect, in contrast with section 3.1 above. Taking the Onset/Lack of Onset factor first of all, we compared the distance between c1 and L in both groupings. Wilcoxon-Mann-Whitney tests (two-tailed) were carried out and the results were strongly significant for both Read sentences and Map task data (Read sentences: z 4.579, p<0.001; Map task: z 4.862, p<0.001). The tendency was for L to be aligned earlier when the accented syllable was onsetless than when it contained an onset.

Next, we turn to the issue of vowel length. The two groupings examined here were Long vowel/diphthong and Short vowels. Previous work showing alignment effects based on vowel length has been carried out by Ladd et al (2000) on Dutch.[7] The measurement here was from v1 to L. The results were significant from the Wilcoxon[8] test for the Read sentences but not for the Map task (Read sentences: z 2.851, p<0.01; Map task: z 0.179, n.s.). The trend in the Read sentences was for L to be aligned earlier in the Short vowel group. However, a further test on the Map task data, examining if there would be a correlation between the phonetic length of each vowel with later alignment of L yielded a strongly significant result (Spearman-Rank Correlation Coefficient r_s: t 5.785, p<0.0005). So in both cases, L appears to be aligned earlier if the vowel is at least phonetically short. The tests comparing the groupings of word-medial /l/ or word-medial /m/ in the accented word did not yield significant results in either the Read sentences or the Map task data.

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[6] The distance 'c1 to L' was also examined in the Map task data but did not yield a significant result.

[7] There is also some unpublished work by Ladd and Schepman (mentioned in Atterer and Ladd (2004: 179)) to suggest that vowel length may be involved in alignment differences of the L in British English rises. It is important to remember though, that the vowel length distinction in Belfast English is not the same as in Southern British English (Harris 1985).

[8] The Wilcoxon-Mann-Whitney test is hereafter referred to as the 'Wilcoxon' test.

3.3 Sentence Type

The reason we chose to examine this variable in the context of the alignment of L was due to Grabe (2002). In her examination of the IViE Belfast data (Read sentences), Grabe found that rises were produced almost exclusively throughout the five different sentence types examined (coordination, declarative, wh-question, y/n question, declarative question). However, higher rises were produced in y/n questions and declarative questions. If speakers use a subtle phonetic mechanism like peak raising to distinguish different sentence types, we hypothesised that they might also use alignment. However, this hypothesis was not confirmed on any great scale. The Kruskal-Wallis ANOVA by ranks carried out for the five different Read sentence types yielded a weakly significant result (χ^2 9.49, p=0.05 (*df* 4)). However, on further examination using Wilcoxon tests, only declarative questions were significantly different from a general grouping of coordination and y/n questions in relation to the alignment of L (*z* 2.479, p<0.02). The point measured here was from v1 to L. Sentence type could only be examined in a very reduced way in the Map task data, given its more spontaneous nature. The only categories examined here were very general grouping of 'question' and 'non-question' (includes declaratives, imperatives etc). However, a significant effect on the alignment of L was not found here (Wilcoxon test: *z* 1.438).

3.4 Gender

The potential that sociolinguistic factors such as gender might have an effect on alignment has been deeply neglected to date. However, there is an exception to this in Fletcher et al (2005), where the possibility of alignment differences between males and females in New Zealand English high rises is raised. The IViE project data offered an ideal opportunity in which to examine potential effects of gender on alignment as an equal number of male and female speakers (6 each) were recorded in each dialect. Our hypothesis here was simply that there would be a difference in the alignment of L between male and female speakers in the Belfast data we examined. Significant results emerged from Wilcoxon tests (two-tailed) conducted on both Read sentences and Map task data. The measurement referred to is the distance between v1 and L in both data sets (Read sentences *z* 5.638, p<0.001; Map task *z* 2.47, p<0.02). The trend in both data sets was for the male speakers to have L aligned earlier in the syllable than the females. These significant results motivated an interest to explore alignment and gender a little more so we examined some of the IViE data recorded in Dublin (Malahide). Here we also looked at L in nuclear rises (though such rises are much less frequent in Malahide than in Belfast). Due to this, we carried out a Wilcoxon test on a combined grouping of Read sentences and Map task speech. The result was significant (*z* 2.89, p<0.01) and again the trend for earlier alignment in the male speakers was the same as we had noted in the Belfast data.

3.5 Speech style

The examination of this variable involved direct comparison between equivalent or quasi-equivalent sets of data from the Read sentences and Map task. We did not find comprehensive evidence of alignment differences between the two styles, though some significant results were achieved and a trend was evident within them. The significant results were achieved in relation to segmental structure, sentence type and gender. When we compared the alignment of L (with respect to c1) in accentual words With Onsets in the Read sentences and in accentual syllables With Onsets in the Map task, the Wilcoxon test (two-tailed) yielded a result of *z* 2.442, p<0.02. For the comparison between Onsetless accentual syllables in the Read sentences and Onsetless accentual syllables in the Map task, the result was z 2.754, p<0.01. For accented words with word-medial nasal in the Read sentences and Map task

respectively, the result was 3.637, p<0.001. In all cases, the trend was for earlier alignment of L in the Map task data. In relation to Sentence type, when we compared the alignment of L (with respect to v1) in a general grouping of Read Sentences 'questions' and in the quasi-equivalent Map task grouping of 'questions', the result was 3.291, p=0.001. Again, the trend was for L to be aligned earlier in the accented syllable in the Map task data. The only other significant result we achieved was in the alignment of L (with respect to v1) between the female data from the Read sentences and female Map task data (z 3.784, p<0.001). The trend of earlier alignment in the Map task data continued. We must advocate a note of caution on these results. Read sentences and Map task data are of course very different from each other, and it is possible that the significant results that we found are a reflection of the difficulty of finding adequately comparable material rather than displaying any major intrinsic difference in alignment between the two speech styles.

4 SUMMARY AND CONCLUSIONS

This study of the alignment of L in Belfast nuclear rises has revealed a number of issues. First of all, the degree of variability in L was high. The fact that we found a number of different factors involved in affecting the alignment of L (sections 3.1-3.5 above) is testament to this. We found that the alignment of L was affected by Anacrusis (the expected leftward pulling effect), Segmental structure (Presence/absence of Onset; Vowel length; with earlier alignment in onsetless syllable and shorter vowel respectively; Sentence type (very limited effect); Gender (earlier alignment in males) and Speech style (earlier alignment in Map task for elements of segmental structure, female gender etc). These findings stand in contrast to previous studies on other languages which reported the valley region as displaying a much more fixed alignment. It also casts some doubt on the notion of stable valleys as a language universal. What we think to be worthy of some further discussion is the fact that some of the factors which had previously been reported on in relation to the variability of peaks (e.g. anacrusis, segmental structure) have here been shown to affect the valley region too. This suggests to us some erosion of the major contrast between peaks and valleys in alignment that has been made by others, at least in relation to this dialect. In the case of anacrusis, the effect of the valley (a leftward pulling effect) was similar first of all, to what Ladd (1996) had observed in the valley region in Glasgow English. More interestingly perhaps, this leftward effect is similar to that reported on for peaks (including peaks in Belfast data (Nolan and Farrar, 1999)). So we may tentatively suggest some kind of parallel with Nolan and Farrar's (1999) findings, as there are now some indications that both the peak and the valley region in Belfast English data are affected in a similar way by anacrusis. It is also important to make a similar link between peaks and valleys in relation to some aspects of segmental structure. The factor of vowel length in particular, and also the issue of the presence/absence of an onset (related to the composition of the onset as studied by Rietveld and Gussenhoven, 1995) are factors that have been shown to affect the alignment of peaks. Here we showed that they could also affect the valley region. This Belfast data gives us some evidence therefore, to purport that valley regions may behave quite similar to peaks in some respects in their variability of alignment and in the factors involved in this variability.

The other aspects of the findings that we feel are worthy of note are the results we received in relation to gender and speech style. For gender first of all, we draw attention to the striking trend that emerged across both Belfast and Dublin (Malahide) data and is also evident in Fletcher et al's (2005) treatment of New Zealand English (accepting that the latter rises are somewhat different). This trend is of course, for the male speakers to display earlier alignment of the low turning point of the rise in all three data sets. Especially as the study of alignment and gender is still in its infancy, we would be very reluctant to claim that the significant results we achieved in Belfast and Dublin must be *caused* by the gender difference alone, or that there must be either a cross-linguistic or even biological tendency for males to begin rises

earlier. Such claims would be far too forward at this stage. What we do assess though is that the similar trends evident in the Belfast, Dublin and New Zealand English data point to an evident need for much greater examination of the role of gender in alignment generally. Turning to speech style, though we stress that we did not find comprehensive evidence of differences in alignment of L between the two styles, we did find some differences and a trend uniting them. Again, we must be cautious about drawing absolute conclusions from these results, as explained at the end of section 3.5 above. Nevertheless, taking the results at face value, they would not entirely support Lickley et al's (2005) view that Read speech data is wholly representative of the phonetic realisation of intonational events. Alignment differences such as those we found are indeed differences in phonetic realisation. We would advocate rather that more spontaneous speech data should be included in alignment studies until such time as Lickley et al's findings are replicated on a much greater scale.

We would not wish to claim that this is the only study which has uncovered variability in the valley region. Of course, it was the observations of Ladd (1996) on Glasgow English, which provided the impetus for conducting the present study. In addition, Welby and Loevenbruck (in press), for example, also report variability in the valley region of the French late rise. Future work would involve looking at some important variables which we omitted to examine in the present study. Most prominent among these is perhaps Speech Rate, which has been examined in other studies of alignment (including Welby and Loevenbruck (in press)). Another direction would be examining the alignment of the Belfast peaks to see if they would be affected by segmental structure in the same way as the valleys have shown to be here. We would also need to tackle a crucial issue, astutely highlighted by Atterer and Ladd (2004). They observed that it is as yet unclear what reference point should be used by which to measure alignment e.g. should it be a segment, a syllable or a unit larger or smaller than these? There is an absence of an appropriate framework on which to base one's decision but yet there will be statistical consequences of one's choice. This issue was impressed on us in this study by the fact that we attained a significant result when measuring the alignment of L with respect to v1 but no significant result when measuring from c1 in the Read sentences for example, and then finding exactly the reverse in the Map task data for the same variable (e.g. anacrusis) (see section 3.1 above). As an overall theoretical concern, therefore, it would seem that unless soon resolved, it could prove a major stumbling block to progressing the field generally. These and other issues remaining, however, we conclude this treatment of alignment of L in Belfast nuclear rises for the moment, at its current state of development.

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Agrammatism and the Lexicon-Syntax Interface: Dutch Aphasics' Performance on Saturated Experiencer Verbs[*]

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This work argues that impairment in certain operations at the interface between the lexicon and the syntax are responsible of agrammatic comprehension of semantically reversible passive sentences. More concretely, and following Reinhart's (2002) Theta System, I put forward the hypothesis that reduction operations delete more material in agrammatic than in non-agrammatic derivations. I report on the results of an experiment, and provide empirical data that support the hypothesis defended here versus Grodzinsky's (1995) Trace Based Account, which states that movement is hampered in agrammatic comprehension.

1 INTRODUCTION

About one third of the people that suffer from agrammatism (Berndt, Mitchum and Haendiges 1996) have problems with the interpretation of semantically reversible passive (SRP) sentences such as (1a). Their performance on true/false judgment tasks with such sentences is at chance: Mary is sometimes understood as patient, and other times as the agent of the event. On the other hand, the interpretation of the active counterpart (1b) presents no apparent problems.

(1)　　(a)　Mary[patient/theme] is kissed by John[agent]
　　　　(b)　John[agent] kisses Mary[patient/theme]

One of the most influential accounts of this pattern of comprehension is Grodzinsky's (1995) Trace Based Account (TBA), which states that movement, one of the core operations of syntax, is problematic in agrammatism because the traces of nominals in theta marked positions are deleted (the Trace Deletion Hypothesis). Hence, the moved DP cannot form a chain with its trace and receives no theta role from the verb. A non-linguistic strategy (the R-Strategy) assigns the moved nominal a theta-role in accordance with Jackendoff's (1972) Thematic Hierarchy by virtue of its linear position.

However, the TBA faces both empirical and theoretical problems. Empirically, a chance performance is predicted by the TBA with unaccusative verbs since they involve A-movement from object position to subject position. However, Piñango (2000) shows that agrammatics' performance with these verbs is above chance. Moreover, Beretta and Munn (1998) demonstrate that there are no double agents in agrammatics' linguistic representations, contrary to the TBA's claim. Finally, Avrutin (2000) gives evidence that supports the claim that other factors, such as resorting to the discourse storage, play a central role in agrammatic comprehension.

From a theoretical perspective, the TBA needs to be reformulated to fit within the assumptions of the Minimalist Program (Chomsky 1995, 2001). First, the TBA is based on a

representational model of the grammar. It operates at the S-Structure, which no longer exists as a syntactic level in the derivational model of Chomsky's (2001). The Non-Inclusiveness Condition forces the notion of trace to disappear from linguistic theory and the movement is understood as copying elements. If movement is just another instance of Merge, I(nternal)-merge as Chomsky (2006) claims, there is no reason, in principle, to expect movement (I-merge) to be impaired while E(xternal)-merge remains intact.

Due to these shortcomings, this paper presents an alternative hypothesis that accounts for agrammatic comprehension of sentence (1a) [1]. This hypothesis is integrated in the Minimalist Program, thus in a derivational model that respects the Non-Inclusiveness Condition. I will provide empirical evidence that falsifies the TBA's claim that agrammatic comprehension is due to impairment in movement itself and deletion of traces, and supports the claim that impairment is at the lexicon-syntax interface.

2 THE LEXICON-SYNTAX INTERFACE: REINHART'S THETA SYSTEM

The Theta System (TS) is, following Reinhart (2002), the system that enables the interface between the System of Concepts and the Computational System (CS). It consists of (at least):

- **Lexical entries**, which are coded concepts. Very little of the concepts' semantic information is visible to the syntax, and this information is codified by formal features defining the thematic relations of verb and its arguments. The lexicon has traditionally been understood as the collection of these lexical entries.
- **Arity operations** on lexical entries, which may generate new entries, or just new options of realization.
- **Marking procedures**, which prepare a verb entry for syntactic derivation.

The semantic information of the concepts visible to the CS is codified by two features (they can be either positive or negative):

- The **/c/** feature is associated with an argument that is perceived as sufficient condition for the action described by the verb.
- The feature **/m/** is associated with some sort of mental state of the participant though it does not determine the causal status of the argument (i.e. whether or not it is a sufficient condition).

These features combine in order to form eight feature clusters, given in (2), which roughly correspond with the traditional theta roles. A cluster can be positive if both features are positive, as in (2a,e,g) or negative if the two features are negative as in (2c,f,h). When one feature is positive and the other negative, the cluster is said to be mixed, as (2b,d).

(2)   Feature composition of the (traditional) theta-roles:

a)	[+c+m]	Agent	e)	[+c]	Cause
b)	[+c-m]	Instrument	f)	[-c]	Goal/benefactor
c)	[-c-m]	Theme/patient	g)	[+m]	Sentient
d)	[-c+m]	experiencer	h)	[-m]	Subject matter

The clusters are marked in the TS so that they can be processed by the CS. The marking procedures are in (3), whereby a negative cluster receives an index 2, as shown in (3a), and a positive cluster is marked with an index 1, as shown in (3b). The mixed clusters remain unmarked. The lexicon marking procedures also specify the conditions under which the verbs may have an ACC feature, as shown in (3c). The indexes 1 and 2 define how the arguments are merged in the syntax. The merging instructions in (4) are the way the CS "interprets" the

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[1] Other syntactic configurations are problematic too, such us object relatives or object clefts (Grodzinsky 1995, among others). However, an explanation of agrammatic comprehension of all these constructions is beyond the scope of this paper due to space limitations.

merging indexes: namely, a cluster with an index 2 merges within the *v*P and a cluster with an index 1 merges out of the *v*P. Mixed clusters may merge either within or out of the *v*P by (4a), depending on the syntactic configuration.

(3)   <u>Lexicon marking:</u> given an *n*-place verb entry, $n > 1$,
      (a) mark a [-] cluster with index 2
      (b) mark a [+] cluster with index 1
      (c) if the entry includes both a [+c] cluster and a fully specified $[/\alpha,/\text{-c}]$, mark the verb with the ACC feature.
(4)   <u>CS merging instructions:</u>
      (a) when nothing rules this out, merge externally[2] (out of the *v*P),
      (b) an argument realizing a cluster marked 2 merges internally (within the *v*P),
      an argument with a cluster marked 1 merges externally.

Finally, there is a set of operations on the lexical entries that either reduce or expand their arity. Only two operations are crucial for us: *saturation* and *expletivization*.

     Saturation is responsible for passivization and it reduces the external argument by existential closure in the syntax. The reduced argument is not realized syntactically and nor is the ACC feature of the verb. However, since the saturation has taken place in the syntax and not in the lexicon, the reduced argument is still present in the semantic interpretation as in (5c).

(5)   <u>Saturation</u>:
      (a) **Basic entry**: $kiss_{acc}$ ($[\text{+c+m}]_1[\text{-c-m}]_2$)   "John kisses Mary"
      (b) **Saturation**:   S(kiss) ($[\text{-c-m}]_2$)   "Mary is kissed ~~Mary~~ (by John)"
      (c) **Interpretation**: λx [kiss(Mary,x)] $\rightarrow$ *saturation* $\rightarrow$ $\exists x$ [kiss(Mary,x)]

Expletivization provides unaccusative entries of causative verbs. The [+c] role of the verb is reduced or deleted in the lexicon as well as the ACC feature. This role is not realized syntactically nor is it present in the semantic interpretation as in (6c).

(6)   <u>Expletivization</u>:
      (a) **Basic entry:** $open_{acc}$ ($[\text{+c}]_1[\text{-c-m}]_2$)   "John opened the door"
      (b) **Expletivization:**   R(open) ($[\text{-c-m}]_2$)   "The door opened ~~the door~~"
      (c) **Interpretation:** λx [open (door,x)] $\rightarrow$ *expletivization* $\rightarrow$ open(door)

3 THE PROPOSAL: OVER-DELETION

My proposal, given in (7), claims that the agrammatics' TBA-like pattern of comprehension of SRP sentences like (1a), results from the fact that reduction operations on the verb lexical entries (expletivization and saturation) delete not only the theta and the accusative features (which is the way a non-aphasic Theta System works) but, crucially, also the merging indices 1 and 2. The latter operation is specific to agrammatism, i.e. it is not found in the grammar of non-agrammatics.

(7)   <u>The Over-Deletion Hypothesis (ODH):</u>
     The agrammatics' TBA-like pattern of comprehension of SRP sentences like (1a) is due to the fact that the reduction operations (expletivization and saturation) on the

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[2] Note that the expression "externally/internally merge" refers here to the structural position where the argument is merged to respect the *v*P. It must not be confused with the terms I(internal)/E(xternal)-merge mentioned in section 1.

lexical entries of the verbs delete (a) theta features, (b) the ACC feature and, crucially, (c) the merging indices.

3.1 Passive verbs with (saturated) [+c+m] subjects

When saturation applies in agrammatics, as in (8c), the merging index 2 is deleted along with the [+c+m] role and the accusative feature. The remaining [-c-m] argument merges externally by (4a) and the structure is that of a unergative verb with a theme [-c-m] argument in subject position. There exist verbs that have such an argumental structure, namely, the "theme unergative verbs" in (9). These verbs are incompatible with a role that contains any causal specification (see Reinhart 2002:236). Since the index 2 has been deleted, when the agrammatic tries to process a sentence with a phonological form like (8c), the structure is identified as that of a theme unergative verb in (9a). Although the index 2 has disappeared, and the structure is misidentified, the agrammatic still "knows" that the verb has undergone saturation and that there is a [+c+m] role implicit in the semantic representation as in (8d). Since theme unergative verbs are incompatible with any [+c] or [+c+m] argument, the derivation crashes at LF.

(8)   Passive verbs:
    (a) **Basic entry**: $kiss_{acc}$ ([+c+m]$_1$[-c-m]$_2$)   "John kisses Mary"
    (b) **Saturation (1)**: S(kiss) ([-c-m]$_2$) "Mary is kissed ~~Mary~~ (by John)"
    (c) **Saturation (2):** S(kiss) ([-c-m]) "Mary is kissed   (by John)"
    (d) **Interpretation**: λx [kiss (Mary,x)]$\rightarrow$ saturation $\rightarrow$ $\exists x$ [kiss (Mary,x)]
(9)   Theme unergative verbs:
    (a) **Lexical entry:**   glows ([-c-m]) "The diamond glows"
    (b) **Interpretation:** $\lambda x[glow(x)] \rightarrow$ glow(diamond)

3.2 Unaccusative verbs

Unaccusative verbs are better understood by agrammatics (namely, above chance as Piñango 2000, among others, has shown). When expletivization applies, the merging index 2 is deleted besides the [+c] role and the accusative feature. Since the remaining [-c-m] argument has no index, it merges externally by (4a). This structure in (10c) is misidentified with that of a theme unergative verb in (9a). However, the derivation does not crash at LF since the [+c] role has been saturated in the lexicon and so, it is not present in the semantic interpretation as in (10d). The performance is above chance because the derivation does not crash at LF. However, it is not perfect (or completely normal) because these verbs are understood as if they were theme unergative and not unaccusative verbs.

(10)   Unaccusative verbs:
    (a) **Basic entry:** $open_{acc}$ ([+c]$_1$[-c-m]$_2$) "John opened the door"
    (b) **Expletiv. (1):**   R(open) ([-c-m]$_2$)   "The door opened the door"
    (c) **Expletiv. (2):**   R(open) ([-c-m])   "The door opened   "
    (d) **Interpretation:** λx [open (door,x)] $\rightarrow$ expletivization $\rightarrow$ open (door)

3.3 Passive verbs with (saturated) [-c+m] subjects

The ODH in (7) makes the correct predictions for passives, actives (in this case no operation applies and the derivation proceeds as usual) and unaccusatives. The TBA makes the correct predictions for passives and actives but not for unaccusatives. Let us look at another kind of

verbs that may provide us empirical evidence supporting one of the other hypotheses: experiencer verbs. They are thought by Reinhart (2002) to have the lexical entry in (12a) below. The optional role ([-m]) is not crucial for our purposes and will be ignored.

Following the TBA, when these verbs are passivized as in (11a), *Lucie* has to move from object position to subject position. Since its trace is deleted, *Lucie* cannot form a chain with a theta position and is not visible at LF. The R-Strategy applies and *Lucie* is assigned an agent role. Since there are two agents in the representation, the agrammatic is forced to guess and chance performance is predicted.

My hypothesis (7) predicts that the performance with this kind of verbs is above chance. Let us see why. The basic entry of an experiencer verb like *worry* is in (12a). Saturation in agrammatics applies, as in (12c) and the merging index 2 is deleted besides the [+c] role and the accusative feature. The remaining [-c+m] argument will merge externally by (4a) and the structure will be that of an unergative verb. However, it is not the structure of a theme unergative verb because the argument in subject position bears a [-c+m] experiencer and not a [-c-m] theme role. Then, they are not incompatible with the saturated [+c] role still present in the semantic representation (12d). The performance is above chance because there is no breakdown but they are understood as unergative verbs.

(11)   Experiencer verbs (TBA predictions):
    (a) **Normal representation**: $Lucie_{i,[patient]}$ is worried t_i (by $Max_{[agent]}$)
    (b) **Trace deletion**: $Lucie_{[no\ theta\ role]}$ is worried (by $Max_{[agent]}$)
    (c) **R-Strategy**: $Lucie_{[agent]}$ is worried (by $Max_{[agent]}$)

(12)   Experiencer verbs (over-deletion predictions):
    (a) **basic entry:** $worry_{acc}$ $([+c]_1[-c+m]([-m]_2)$ "Max worries Lucie"
    (b) **sat. (1)[3]:** S(worry) $(_1 [-c+m]([-m]_2))$ "Lucie is worried ~~Lucie~~ (by Max)"
    (c) **sat. (2):** S(worry) ([-c+m]([-m])) "Lucie is worried (by Max)"
    (d) **Interpretation:** $\lambda x[worry\ (Lucie,x)] \rightarrow$ saturation $\rightarrow \exists x[worry\ (Mary,x)]$

4 EMPIRICAL DATA

4.1 Hypotheses

The experiment aims at comparing the predictions of the TBA and the ODH in (7). Table (1) summarizes the predictions of the two hypotheses with respect to several kinds of structures. More concretely, for passivized (saturated) experiencer verbs the TBA predicts a chance performance whereas my hypothesis in (12) predicts an above chance performance.

	TBA	ODH
Unaccusatives	Chance	Above chance
(active) agentive verbs	above chance	above chance
Saturated (passive) agentive verbs	Chance	Chance
Saturated experiencer verbs	**chance**	**Above chance**

Table 1

Predictions of TBA vs. ODH

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[3] The index $[_1]$ cannot be deleted by the operation *saturation* because it applies in syntax (unlike *expletivization*, which deletes the role altogether as well as the index it bears). Since this index is still present in the syntax, the experiencer role must merge internally (Siloni 2002).

4.2 Subjects

The subjects were divided in two groups:
- An **experimental group** composed of 6 patients (native speakers of Dutch) affected with aphasia and receiving treatment in the rehabilitation center De Hoogstraat in Utrecht (The Netherlands). Table (2) shows the demographic data and diagnosis.
- The **control group** consisted of 6 students of the Faculty of Arts at the University Utrecht. They were native speakers of Dutch.

Subject	Initials	Gender	Age	Lesion	Diagnosis
1	D.L.	Male	64	CVA left	Global
2	M.B.	Female	50	Intracerebral hematoma	Broca
3	D.H.	Male	47	CVA left	Mixed
4	D.F.	Male	35	CVA left	Wernicke
5	D.M.	Male	53	CVA left	Global
6	D.A.	Male	26	CVA left	Broca

Table 2

Experimental subjects

4.3 Materials and procedures

The task consisted of a true/false judgment of a sentence inserted in a context given by a short story, as in (13), and a B/W picture, as in Figure (1). There were such 16 items.
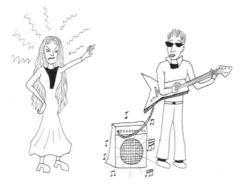

Figure 1

Example of picture used in the experiment

(13)   Example of an item used in the experiment:
- (a) **Story**: 'Marie heeft een drukke dag gehad. Het enige dat zij wil doen is naar bed gaan om wat te slapen. Jan is thuis en hijzit gitaar the spelen omdat hij morgen een concert moet geven. Marie vindt het heel lasting omdat ze hoofdpijn heeft.' (Translation: Marie has had a stressful day. The only thing she wants to do is go to bed. Jan has arrived at home and he starts playing guitar because he has to give a concert tomorrow. Marie finds the situation annoying because she has a headache.)
- (b) **Sentence**:   ' Marie wordt   geërgeerd   door Jan'
                       Marie is$_{(passive\ auxiliary)}$ annoyed   by   Jan

The sentences used in the experiment were divided into:
- **8 Target sentences:** passive sentences such as (14) with a Dutch experiencer verb that has undergone saturation of its [+c] role. The *by*-phrase is explicitly present.

(14) Jan[+c+m] wordt verblijd door Marie[+c]
      Jan   is   rejoiced   by   Marie

- **8 Control sentences:** 4 passive sentences like (15) with a Dutch agentive verb (which has undergone saturation of its [+c+m] role), and 4 active sentences like (16) with a Dutch agentive verb (no saturation applies, no passivization). These items are typically used in the experiments of Grodzinsky's (1995). The *by*-phrase is explicitly present in the passive sentences.

(15) Marie[+c+m]1 omarmt   Jan[-c-m]2
      Marie   embrace Jan

(16) Jan[-c-m]2 wordt gezoend door Marie[+c+m]
      Jan   is   kissed   by   Marie

There were three conditions in the experiment:
- **Two control conditions** that showed whether the subjects performed as the TBA predicts on passive versus active agentive verbs or not.
- **One experimental condition** aimed at contrasting the ODH vs. the TBA.

4.4 Results

4 subjects were used in the analysis of data since M.B. and D.M. had a performance opposite to the one predicted by the TBA with agentive passive vs. active sentences. The individual results are given in table (3). The means of the groups are in Table (4).

Subject	Initials	Saturated experiencer	Saturated agentive	Agentive
1	D.L.	0,88	0,50	1
2	M.B.	0,63	0,75	0,5
3	D.H.	0,88	0,75	1
4	D.F.	0,75	0,25	1
5	D.M.	0,63	0,75	0,5
6	D.A.	0,88	0,75	1

Table 3

Individual means

	experimental group		control group	
	Mean	SD	Mean	SD
Saturated experiencer	0,8438	0,06250	1	0
Saturated agentive	0,5625	0,23936	1	0
Agentive	1	0	1	0

Table 4

Means of the groups

The mean of experimental group in saturated agentive sentences (0,5625) was at chance (df=3, p=0,638), i.e. the difference with 0.5 was not significant. The mean of the experimental group in saturated experiencer sentences (0,8438) was above chance (df=3, p=0,002) though below normal-like performance (df=3, p=0,015), as the hypothesis (11) predicts. This mean is different from the mean of this group in saturated agentive sentences (df=3, p=0,024).

5 CONCLUSIONS

To conclude, the empirical data in section 4 support the ODH in (7): if agrammatics had problems with traces in theta positions and movement, saturated experiencer sentences should trigger performance at chance. The experiment presented in this paper shows that agrammatics' performance in these kinds of sentences is above chance though not normal-like, which is explained by (7) and unexpected by the TBA. Moreover, the ODH also predicts above-chance performance in unaccusative verbs (which is empirically correct, Piñango 2000), unlike the TBA. The empirical evidence provided in this paper supports the argument that agrammatic comprehension is not due to impairment in movement itself and trace deletion, as the TBA claims, but that the lexicon-syntax interface plays a central role in agrammatic comprehension.

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Logic in Pragmatics[*]

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This paper argues against the total elimination of logical introduction rules from the pragmatic inference system. To maintain consistency of the inference system as a whole, which is meant to support one's truth-based judgment over propositions, the inference system should have access to both introduction and elimination rules. I show that the inclusion of introduction rules into the pragmatic inference system neither overgenerates propositions expressed nor causes non-terminating inference steps.

1 FREE ENRICHMENT AND ALLEGED OVERGENERATION

According to Relevance Theory (RT for short, Sperber & Wilson 1986/95), the pragmatic process of recovering propositions expressed by (or the truth conditional content of) utterances involves more than reference assignment and disambiguation.

(1)   (a) Every presenter [*in the pragmatics session of CamLING07*] was impressive.
        (b) John took out a key and opened the door [*with the key*]. Cf. Hall (2006)

Given the linguistically provided information outside the square brackets in (1), the hearer can pragmatically enrich to propositions that may contain extra material such as the content given in the square brackets (in the relevant contexts).

Stanley (2002) claims that this free enrichment overgenerates. Suppose (2) is uttered with the contextual premises in (3) being highly accessible. Then, according to Stanley, RT wrongly predicts that (2) can be enriched to (4), assuming that *John will not live long* (= R) is a relevant conclusion to draw.

(2)   John smokes. (= *P*)
(3)   a. John drinks. (= *Q*)
        b. If John smokes and drinks, he will not live long. (= $(P\&Q)\rightarrow R$)
(4)   John smokes [*and drinks*]. (= *P&Q*)

Addressing this criticism, Hall (2006: 95-96) follows Sperber & Wilson (1986/1995) and postulates Conjunctive Modus (Ponendo) Ponens (CMPP) as in (5). With CMPP, the hearer can derive the relevant conclusion, *John will not live long* (= R), without applying &I.

(5)   Conjunctive Modus Ponens:
        1. $(P\&Q)\rightarrow R$ Premise 1
        2. *P*   Premise 2
        3. $Q\rightarrow R$ 1, 2, CMPP
        4. *Q*   Premise 3
        5. *R*   1, 2, 4, MPP

Hall suggests a weaker claim such that because of CMPP, the hearer does not have to use &I in order to derive the relevant conclusion *John will not live long*. Thus, the hearer *can* derive this conclusion as in (5), without deriving the undesirable (4) as the proposition expressed by (2).

However, with this weaker claim, to prohibit the derivation of (4) as the truth condition of (2) in *any* instance of interpreting (2) in context, one would need some additional explanation why the hearer *always* uses the inference steps as in (5) rather than the application of &I followed by MPP, when free enrichment is involved.

In this paper, I argue that introduction rules can be used in pragmatic inferences in general. Thus, after showing that it is problematic to eliminate the &Introduction rule from the pragmatic inference system in section 2, I provide an explanation in section 3 about why &I is not used in enrichment, though the pragmatic inference system itself is equipped with this rule. I also argue that CMPP is only a convenient shorthand for a particular combination of inference steps, rather than an actual inference rule defined over logical connectives.

The stronger claim made by Sperber and Wilson is that spontaneous inferences do not use (logical) introduction rules at all (and thus, (5) is the only way of deriving the conclusion R, given (2)~(3)).[1] The reason for postulating this stronger hypothesis is not only the alleged overgeneration of propositions expressed by way of free enrichment. Sperber & Wilson, among others, argue that spontaneous inference should not have access to introduction rules because, otherwise, the system would generate infinite or non-terminating inferences. In section 4, I briefly explain this infinity problem and then show that the problem is not caused by the use of introduction rules in the system, and thus eliminating &I or other introduction rules is not the right way of coping with this problem. Section 5 is an Appendix in which I present some proofs to support my arguments. Section 6 provides concluding remarks.

2 PROBLEMS OF ELIMINATING &I FROM THE PRAGMATIC INFERENCE SYSTEM

In this section, I discuss some of the problems of eliminating &I from the spontaneous inference system. First, if the truth-based judgment is at least part of one's spontaneous inference, then the total inference system might become inconsistent without &I.

(6)   (a). $p, q, (p\&q)\rightarrow r \vdash r$
       (b). $p\&q, (p\&q)\rightarrow r \vdash r$

Consider the two sequents in (6a) and (6b). The two separate propositions p and q on the one hand, and one complex proposition $(p \wedge q)$ on the other, have the same interpretation in the antecedents of the two sequents. If the inference system cannot make use of &I, it cannot syntactically explain the same role that these formulas play in truth-based interpretations.[2]

Secondly, the reason why CMPP in (5) does not cause problems for the logical inference system as a whole is the logical equivalence relation in (7), whereas the proof of this equivalence requires &I, as well as &Elimination (&E).

(7) $(p\&q)\rightarrow r \dashv \vdash p\rightarrow(q\rightarrow r)$

Though humans may not actually derive the right-hand side formula from the left-hand side one in (7) when they run an inference as in (5), inability to recognize the two as truth conditionally equivalent is a demerit of the inference system.

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[1] As a 'stronger claim,' I include one that assumes that, though &I is available at the level of the underlying logical inference system, it is *never* used in any spontaneous inferences for some application reasons.
[2] The inference system can still derive the entailment relation from $(p\&q)$ to p, q (as premises) via &Elimination in the syntax, but that is not complete.

In this section, I showed that the truth conditional equivalence between certain propositions cannot be recognized without &I. Though rules that are used in pragmatic inference do not have to be complete with regard to the intended interpretations (i.e. truth-based interpretations in this case), assuming that such truth conditional judgments are also important in spontaneous inferences, it is not explanatory (as well as stipulatory without independent explanation) to ban the use of &I in the pragmatic inference system.

3 ALLEGED OVER-GENERATION BY WAY OF ENRICHMENT

In this section, I show that RT does not have to eliminate &I to prevent the alleged overgeneration via free enrichment.

In propositional logic, &I requires as premises two formulas that can be assigned truth values, as is informally shown in (8).

(8)　(a).　Syntax:　　$p, q \vdash_{\&I} p \& q$
　　(b).　Semantics: If $\|p\|$ = True and $\|q\|$ = True, then it follows that $\|p\&q\|$ = True.

Because of this, if it is also assumed that the proposition expressed by an utterance is the first truth-evaluable meaning representation that can be derived from the language expression used, it follows that &I (or introduction rules for any truth functional connectives) cannot be used in the derivation of the proposition expressed. Consider (1)~(4) again. (3a, b) as contextual assumptions are fully propositional on their own. On the other hand, (2), which is uttered by the speaker, acquires a fully propositional status only after it is recognized as the proposition expressed by that utterance. Thus, one can conjoin (2) with (3a) via &I only after recognizing (2) on its own as the proposition expressed.[3] It follows that (4) cannot be the proposition expressed by (2). Note that in this explanation, CMPP is not required as an actual logical inference rule. CMPP may still be used for describing an on-line inference step that arises as a result of routinization of certain logical inference steps in application. But that does not cause any inconsistency in the inferential system as a whole. With &I, the system can recognize the equivalence between the role of the two premises p and q separately, on the one hand, and the role of ($p\&q$) as one complex premise, on the other.

I stipulated that one can apply introduction rules for truth conditional connectives only after one enriches the meaning of the overtly used expression to the *proposition expressed*. The proposal would be problematic if one had to apply a truth based logical inference rule to a propositional representation that has not yet been accepted as the proposition expressed in other well-attested cases. Some might argue that 'trivial propositions' as in (9) are such cases.

(9)　(a).　John has a brain. (i.e. *John is smart.*)
　　(b).　Meg is human. (i.e. *Meg may make mistakes, etc..*)

An argument against my proposal above would be that, in order to derive the propositions expressed (e.g. the ones in the parentheses in (9a) and (9b)), the hearer has to evaluate the literal meanings of (9a) and (9b) as trivially true propositions.

However, (9a) and (9b) do not necessarily provide a problem for my proposal. First, to recognize the literal meanings of (9a) and (9b) as trivially true, one does not have to apply proper logical inference rules. In other words, to recognize them as trivially true, one does not

---

[3] Hall (2006) postulates two kinds of pragmatic inferences, local inferences that are applicable to sub-propositional expressions, and global inferences that apply only to fully propositional expressions. Allott (p.c.) suggests that this division might inherently be present in Sperber & Wilson (1986/1995). One can regard my proposal in section 2 as one interpretation of this division between two kinds of inferences.

have to have the trivially true propositions interact with other contextual assumptions in terms of logical inference rules.[4]

Secondly, after accepting my assumptions, one can still enrich the meaning of component expressions by using the information provided by contextual assumptions. With model theoretic relations such as sub-set relations, one can mimic logical entailment relations without deriving a fully propositional representation. In this way, one can enrich the meanings of predicate expressions via set-containment relations, for example, without deriving a full proposition. On the other hand, I argue that proper logical introduction rules do require fully truth evaluable elements as premises (just as is the case in standard logical systems) and thus, they cannot be mimicked in terms of relations between sets.[5]

This section explained why introduction rules are not applicable in enrichment. The next section deals with the alleged 'infinite inference' problem.

4 ALLEGED INFINITY PROBLEM CAUSED BY INTRODUCTION RULES

This section briefly addresses the claim that if one's pragmatic inference system were equipped with logical introduction rules, one would run infinite or non-terminating inferences. Because such non-terminating inferences are not attested in interpretation data, it must be the case that the pragmatic inference system does not have access to introduction rules. Arguing against such claims, I show that this problem is caused independently of the use of introduction rules and should be solved independently.

Johnson-Laird (1997: 391) claims that introduction rules, if they are used in spontaneous inferences, may lead to infinite inference steps, as schematized in (10).

(10)   (a). $P, Q \vdash_{\&I} P\&Q \vdash_{\&I} P\&Q\&P \vdash_{\&I} \ldots$
        (b). $P \vdash_{\lor I} P\lor Q \vdash_{\lor I} P\lor Q\lor R \vdash_{\lor I} \ldots$

However, the alleged infinity in (10a) is because of the expansion of 'P' to '$P, P,$' and 'Q' to '$Q, Q.$' It is not because of &I per se. Also, with regard to this structural expansion rule, note that one occurrence and more than one occurrence of the same formula have the same interpretation in truth-based inferences. Thus, the alleged infinity might be just a matter of an imperfect representation system, rather than some imperfection of the inference system. In fact, even at the level of represented deductions, logicians have tried to eliminate un-decidability introduced by structural rule applications. Without going into the details, the idea is that one may apply a structural rule only when the consequence of that rule application is required by the next step of the inference. In (10b), $\lor$I presupposes weakening on the succedent side. But this weakening is only required to make the syntactic system complete with regard to the truth-based interpretations. In other words, though Q and R are introduced as disjuncts on the succedent side, Q and R on their own are not usable as a premise at a later stage of derivation. In that sense, P, $P\lor Q$ and $P\lor Q\lor R$ have the same interpretation in this inference and could well be recognized as the same in the truth-based inference.

Some might argue that recursive applications of &Introduction followed by &Elimination would produce infinite inference steps, but this infinity does not arise in standard proof representations without a 'Cut', such as Gentzen sequent presentation without a Cut. Some proofs are listed in the Appendix (see (16)~(19)).

(11) schematically shows a more sophisticated infinity argument.

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[4] Such propositional interactions are not necessary, even when the literal meanings of (9a, b) are recognized as informative enough and are accepted as propositions expressed. Contextual premises, plus the linguistic meanings of the relevant expressions, will provide enough clues without such interactions.

[5] I regard generalized conjunction as in Partee and Rooth (1983) only as a rule of PF-LF mapping and it does not influence the fully truth-functional status of &, $\lor$, $\rightarrow$, etc. at the level of logical forms.

(11)   (Non-) Frame problem.
   (a).   Antecedent Set ⊢ $_\Delta$ Succedent Set
   (b). $P \vdash _{\{Q\}\&I} P\&Q$
   (c).   cf. $P, Q \vdash _{\&I} P\&Q$

(11a) represents a spontaneous on-line inference step. Though the logical inference rules are the same as in classical logic, (11a) distinguishes between two kinds of databases that are used as premises. The antecedent embodies the set of premise propositions that are active in the context, including the proposition expressed by the utterance. To draw a conclusion in the Succedent Set, one can also use premise propositions in the 'dormant database' set Δ, which contains all of one's (propositional) knowledge.

   With these assumptions, some might argue that the inference system would wrongly predict the existence of an infinite inference as in (12).

(12) $P \vdash _{\{Q, R, S...\}\&I} P\&Q \vdash _{\{R, S,,...\}\&I} P\&Q\&R \vdash _{\{S,...\}\&I} P\&Q\&R\&S \vdash _{\{...\}} ...$

In (12), one may extract one proposition after another from the dormant database set and conjoin them with the proposition P in the active premise set. If it is assumed that the amount of knowledge that one has (or can access) is almost infinite, this model wrongly predicts that one may actually run an almost infinite inference.[6]

   However, note that this alleged infinity is not a matter of &I per se. As I have already pointed out, in the antecedent set, P and Q as separate propositions on the one hand, and $P\&Q$ as a single complex proposition on the other, play the same role in the classical logic. Thus, the above infinity problem will arise independently of the use of &I. What is problematic then is the introduction of $Q, R. S$ into the active data-base, not the conjunction of those newly introduced propositions with a proposition that is already in the active database. Thus, what one needs is a systematic way of constraining the introduction of propositions from the dormant database to the active database.

   This section has shown that use of introduction rules in the inference system is not the cause of the alleged non-terminating inferences, and that the elimination of introduction rules does not solve the problem.

5 APPENDIX: SOME GENTZEN SEQUENT PROOFS

In this section, I show that successive applications of &I (or &R in this section) and &E (or &L) do not lead to undecidability. I also show that $(p\&q)\rightarrow r$ and $p\rightarrow(q\rightarrow r)$ are inter-derivable. The proofs here are elementary, and are a simple application of the Gentzen sequent presentation of classical logic as in Girard (1987) or Takeuti (1987).

(13)   Sequent to prove (e.g.) $p, q, (p\&q)\rightarrow r \vdash r$

The Gentzen sequent proof representation places the sequent to prove at the bottom of the derivation. Then, one logical connective after another is eliminated upwards along the chain, as is shown in below examples. If the proof is successful, the sequents at the top of the proof are all identity axioms in the form of (14).

(14)   Axiom: $A \vdash A$

---

[6] Also, in a spontaneous inference, one does not typically access all of one's available pieces of knowledge, even if the pieces of knowledge are relevant to the argument being made.

By convention, *p, q, r...*represent atomic propositional letters, *A, B, C* represent any (propositional) formulas, and *X, Y, Z* represent sets of such formulas. I omit the set notations both in the antecedent (i.e. the left-hand) side of each turnstile and the succedent (i.e. the right-hand) side. (15) shows the axioms for the connectives & and $\rightarrow$. I omit rules for other connectives. Cut in (15c) is an admissible rule[7] which is not necessary for the proof system, but is useful for improving the efficiency of the proof.

(15)   Logical rules:

$$
\text{(a).}\quad \frac{A,\ B \vdash\ X}{A \wedge B \vdash\ X}\ _{\wedge L}
\qquad\qquad
\frac{X \vdash\ A\ \ Y \vdash\ B}{X, Y\ \vdash\ A \wedge B}\ _{\wedge R}
$$

$$
\text{(b)}\quad \frac{X \vdash\ A\quad Y, B\ \vdash\ Z}{X,\ Y,\ A \rightarrow B \vdash\ Z}\ _{\rightarrow L}
\qquad
\frac{X, A, Y\ \vdash\ B}{X, Y\ \vdash\ A \rightarrow B}\ _{\rightarrow R}
$$

$$
\text{(c).}\qquad\qquad \frac{X \vdash\ A\qquad A\ \vdash\ Z}{X\ \vdash\ Y}\ _{Cut}
$$

I have omitted some of the 'contextual' structural variables (i.e. *X, Y, …*). Except for the Cut rule, the number of the connectives decreases by one along each consecutive step upwards. Because there are only a finite number of connectives in each sequent that is to be proven, each proof is decidable in a finite number of steps, unless Cut is used.

Remember the successive use of &I (= $\wedge$R here) and &E(=$\wedge$L), which may allegedly lead to an infinite inference. With Cut, this claim is substantiated, as in (16).

(16)   *Proof 1*

$$
\frac{\dfrac{p \vdash p \quad q \vdash q}{p, q \vdash p \wedge q}\ \wedge R \quad \dfrac{\dfrac{\dfrac{p \vdash p \quad q \vdash q}{p, q \vdash p \wedge q}\ \wedge R}{p \wedge q \vdash p \wedge q}\ \wedge L \quad r \vdash r}{(p \wedge q), (p \wedge q) \rightarrow r \vdash r}\ \rightarrow L}{p, q, (p \wedge q) \rightarrow r \vdash r}\ Cut
$$

(17), in which Γ and Δ represent the two sub-proofs of (16), represents the proof in (16) in brief. If the Cut rule is used, then this proof might not terminate in a finite step, given the sequent to prove, *p, q, (p∧q)→r* $\vdash$ *r*.

(17)   *Proof 1 (with abbreviation)*

$$
\frac{\Gamma \qquad\qquad \Delta}{p, q, (p \wedge q) \rightarrow r \vdash r}\ Cut
$$

In the position of the sub-proof Γ in proof 1, one could insert a larger sub-proof, e.g., the whole of the proof 2 in (18).

---

[7] That is, any sequent that can be proved with Cut is provable without Cut.

(18) *(Sub)-proof 2*

$$
\cfrac{
  \cfrac{p \vdash p \quad q \vdash q}{p, q \vdash p \wedge q} \wedge R
  \qquad
  \cfrac{
    \cfrac{
      \cfrac{p \vdash p \quad q \vdash q}{p, q \vdash p \wedge q} \wedge R
    }{p \wedge q \vdash p \wedge q} \wedge L
  }{}
}{p, q \vdash p \wedge q} \; Cut
$$

Note that the left premise and the conclusion of Cut in (18) are both *p, q* $\vdash$ *p∧q*. Thus, this conclusion sequent can be used as a left premise of another Cut, whereas the whole of the right premise of the original Cut in (18) is repeated as the right premise of the additional Cut. Thus, there is no maximal limit to the size of the sub-proof in (18), leading to the infinity (or undecidability) problem.

However, as Girard (1987) and others showed, Cut is an admissible rule in Gentzen sequent presentation. Without Cut, Proof 1 is represented as Proof 3.

(19) *Proof 3* (*Without Cut*)

$$
\cfrac{
  \cfrac{p \vdash p \quad q \vdash q}{p, q \vdash p \wedge q} \wedge R
  \qquad
  r \vdash r
}{p, q, (p \wedge q) \rightarrow r \vdash r} \rightarrow L
$$

Other than Cut, all the rules in (14)~(15) reduce the number of connectives by one along each consecutive step upwards, and thus, all the proofs are decidable in finite steps. Consequently, successive use of ∧L and ∧R does not lead to an infinite inference.

Finally, (21) shows that the equivalence in (7), repeated here as (20), is provable only with &I (or ∧R here) as a rule of the logic. The proof in (21a) requires ∧R in the top left sub-proof.

(20)   (*p∧q*)→*r* ⊣ ⊢ *p*→(*q*→*r*)

(21)   (a). ⊢

$$
\cfrac{
  \cfrac{
    \cfrac{
      \cfrac{p \vdash p \quad q \vdash q}{p, q \vdash (p \wedge q)} \wedge R
      \qquad r \vdash r
    }{p, q, (p \wedge q) \rightarrow r \vdash r} \rightarrow L
  }{p, (p \wedge q) \rightarrow r \vdash q \rightarrow r} \rightarrow R
}{(p \wedge q) \rightarrow r \vdash p \rightarrow (q \rightarrow r)} \rightarrow R
$$

(b). ⊣

$$
\cfrac{
  \cfrac{
    \cfrac{
      p \vdash p \quad
      \cfrac{q \vdash q \quad r \vdash r}{q, q \rightarrow r \vdash r} \rightarrow L
    }{p, q, p \rightarrow (q \rightarrow r) \vdash r} \rightarrow L
  }{p \wedge q, p \rightarrow (q \rightarrow r) \vdash r} \wedge L
}{p \rightarrow (q \rightarrow r) \vdash (p \wedge q) \rightarrow r} \rightarrow R
$$

In this section, I showed that successive use of &I(=∧R) and &E(=∧L) does not lead to an infinite inference in Gentzen sequent presentation without Cut. I also showed that &I is a necessary inference rule to support CMPP as an application rule in spontaneous inference. I did not show how one can prevent infinity which could be induced by the use of structural

rules (such as expansion and weakening) in the proof presentations, but for some rough ideas (in the context of Modal logic), see Hudelmaier (1996).

6 CONCLUSION

If a pragmatic inference system is to explain the truth-based inference (possibly among other kinds of inference), it is not desirable to eliminate logical introduction rules completely from the inference system, assuming that the inference system needs to be consistent as a whole. Use of introduction rules in the inference system as a whole does not lead to overgeneration via enrichment. Introduction rules can apply only with fully propositional elements as premises, and thus, such rules cannot be applied before the recovery of the proposition expressed. The alleged infinite inference steps are not caused by introduction rules per se, and the problem must be solved independently.

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