Reading Comprehension and Specialized Vocabulary: Does tourism vocabulary predict reading comprehension better than general vocabulary?

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Abstract

Vocabulary knowledge is one of the most important factors that contribute to reading comprehension (Laufer, 1997; Grabe and Stoller, 2002; Stahl, 2003; Nassaji, 2003; Bernhardt, 2005; Zhang and Anual, 2008). Some researchers suggest that general high frequency words have more effect on reading comprehension (Coady, Magoto, Hubbard, Graney, and Mokhatari, 1993) while some others suggest that low frequency words (e.g. specialized vocabulary) that carry important information in texts could impair the reading process (Freebody and Anderson, 1983; Arnaud and Savignon, 1997). In this article I report the results obtained in research carried out in order to investigate the relationship between distinctively frequent vocabulary in the field of tourism, general English high frequency words and reading comprehension of texts of tourism. The subjects were 135 Mexican students enrolled in the tourism BA at the State University of Nayarit, Mexico. Three data collection instruments were employed: a reading comprehension test, the Vocabulary Levels Test (Schmitt, 2000) and our own tourism vocabulary test. The results show that the distinctively frequent words of tourism predict reading comprehension of tourism texts better than the general English high frequency words. The level that predicts reading comprehension of tourism texts better from the VLT is the 3,000 level.

1 Introduction

Vocabulary knowledge is one of the most important factors contributing to reading comprehension. Several researchers have suggested that vocabulary is a good predictor of reading comprehension (Koda, 1994; Laufer, 1997, Zhang and Anual, 2008); they stress the importance of a high level of word knowledge in order to comprehend texts. Freebody and Anderson (1983) obtained reliable correlations between vocabulary and comprehension. Stahl (2003) suggests that according to the readability indexes vocabulary is one of the major components, and that word difficulty affects comprehension. Grabe and Stoller (2002), Nassaji (2003) and Bernhardt (2005) affirm that less skilled readers have inefficient, slower lexical access and semantic processing than the skilled ones.

Despite the number of studies suggesting there is a significant relationship between vocabulary and reading, few have investigated the relationship between vocabulary knowledge of English for Specific Purposes (ESP) and reading or vocabulary for English for Occupational Purposes (EOP) and reading. To our knowledge, the distinctive effect of general and specialist vocabulary has not been studied before for reading comprehension of tourism texts, which is why this research seeks to obtain information relevant for this field of study. Hence, in order to advance an understanding of the precise nature of vocabulary knowledge in this relationship, the present work sets out to investigate the correlation between distinctively frequent vocabulary in the field of tourism and reading comprehension of texts of tourism separately from the correlation between general high frequency English words and reading comprehension of tourism texts. The present research will provide new

information for the area of tourism; it will specifically find the vocabulary that addresses the EOP needs of tourism students.

2 The study

2.1 Subjects

The subjects who participated in the pilot study were 135 students of Tourism at the State University of Nayarit (UAN). Forty-six of the subjects were men and eighty-nine were women. Their ages ranged between 18 and 21 years old. All of them spoke Spanish as their first language and were Mexicans living in the state of Nayarit, Mexico. All the subjects were studying for their BA in Tourism at UAN.

The 135 tourism students belonged to eight different English levels at the university, according to ability. All 135 students had at least read the texts contained in the American Headway series, along with other supplementary reading material provided by their teachers. All had the opportunity to read authentic tourism texts in other subjects (design and evaluation of tourism projects, or the tourism environment in Nayarit, for example) which are mainstream readings at other subjects within the tourism program.

2.2 Instruments

2.2.1 Reading Comprehension Tests

The texts needed for the Reading Comprehension Test had to match the purpose of the test. The purpose was to measure the reading comprehension of tourism texts (particularly the kind of texts people working in the area of tourism read) in order to correlate the reading scores of the subjects with the subjects' knowledge of two types of vocabulary (general and tourism vocabulary). Firstly they had to be texts that subjects were likely to read in the workplace. Mainly they had to be texts that graduates of tourism (interviewed in a preliminary study) reported reading at work (Alcantar, 2007), not the kind of texts the subjects were currently reading on the English course. Secondly, they had to be as authentic as possible, since the kind of material graduates of tourism read at work are authentic not simplified texts and, thirdly, they had to be suitable for designing the reading task and/or reading comprehension questions. After analyzing the different plausible texts to be included in the reading comprehension test, two texts were chosen (see appendix A).

Test 1:
This text was taken from the Tourism Corpus compiled in a preliminary study (Alcantar, 2007). The text was chosen randomly from a collection of 137 texts the subjects are likely to read in a real life job. It contains 518 words, the [1]Flesch-Kincaid Grade Level is 11 and the [2]Flesch Reading Ease 38.3 per cent (Flesch, 1948; Stahl, 2003). From the 518 words 54.38 per cent belong to the K1 words (1 to 1000 most frequent words), 12.63 per cent belong to the K2 words (1001 to 2000 most frequent words), 4.68 per cent belong to the AWL (Academic Word List) and 28.31 per cent to the off-list words (words that do not belong to the 1,000/2,000 bands or the AWL). Most of the words in the text belong to the most frequent words in English. As we can observe the off-list words are the second group with the biggest percentage in the text, which is consistent with a specialist text.

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[1] Formula that indicates a grade-school level in USA from 3-4 to 12
[2] Readability formula

For the design of the questions related to this text we decided to design a task where the subjects performed the type of activities expected in relation to a similar text in real life. The interview conducted with the Tourism graduates in the preliminary study (Alcantar, 2007) included questions about the kind of reading they need to do at work; the responses showed that the subjects interviewed usually need to scan the texts to look for specific information in order to provide the customer with this information or to transfer it to a different form. This is the reason we decided to use the information transfer technique in which the student's task is to identify in the target text the required information and then to transfer it, often in some transposed form, or into a table/map. (See Appendix A)

Test 2:
This text was taken from the IELTS general training test (Jakeman and McDowell, 1996:96-97). It is a text about tourism containing information that graduates of tourism are likely to read when performing activities at work. The information contained in this text is related to a coach tour: luggage, seat allocation, travel documents, special diet, accommodation, and entertainment.
The text contains 382 words, the Flesch-Kincaid Grade Level is 11 and the Flesch Reading Ease is 56.5 per cent. From the 382 words, the 77.34 per cent belong to the K1 Words, 5.99 per cent to the K2 Words, 7.29 per cent to the AWL, and 9.38 per cent to the off-List words. As with Text 1, most of the words belong to the most frequent words (K1, K2), and the second biggest group is the off-list with 9.38 per cent. Both texts contain high frequency words as well as words belonging to the off-list words.

The questions related to the text from the IELTS were already professionally designed along with the text; therefore they were taken as they were. They were multiple choice questions, and according to the IELTS training test they aimed to test the following skills: skimming/scanning for specific information, understanding paraphrase and distinguishing between main and supporting points (Jakeman and McDowell 1996:146).

2.2.2 The Vocabulary Levels Test (Schmitt, 2000).

The VLT has been used in many countries and it has been a useful tool for diagnostic vocabulary testing. Also *"in the absence of any more sophisticated measure, it has been used by researchers who needed an estimate of the vocabulary size of their non-native speaking subjects"* (Read, 2000: 118). The VLT was validated by Read in 1988, showing a consistent declining score across frequency bands which means the test-takers knew most of the words at the 2,000 level, but little more than a third of those at the 10,000 level. The statistics showed a high degree of implicational scaling which means that test-takers who did well at lower-frequency levels also did well in the preceding higher frequency levels (Read, 2000).

The test has five parts, each one representing by random selection a different word frequency level: The first 2000 words level, the 3000 words level, the 5000 words level, the University word level (AWL in Schmitt's version) and the 10,000 word level. The format involves matching words with definitions. The knowledge of the meaning of words is being tested and the definitions are chosen to be a lower vocabulary level than that of the list of 6 words. In the early version each level consists of 36 words and 18 definitions, grouped in clusters of six words and three definitions respectively. This format involves little reading and minimizes the chances of guessing. For the present study we used the VLT version 2 empirically validated in 2001 by Schmitt, Schmitt and Clapham. This version contains 30 test items at each level or 10 clusters per level instead of 6 clusters or 18 test items as the original version.

2.2.3 Tourism Vocabulary Test

This test was designed by the researcher since there is not any test for tourism vocabulary available. The words used to design the Tourism Vocabulary Test belong to the list of 421 most distinctively frequent words obtained from a specialized tourism corpus crated in a preliminary study (Alcantar, 2007). For the construction of the test, we decided to follow the criteria of Schmitt at al., considered for the design of the two new versions for Nation's test doing some adaptations when necessary (See the test in appendix A):

1) The options in this format are words instead of definitions
2) The definitions are kept short
3) The option in each cluster have very different meaning
4) The clusters are designed to minimize aids to guessing
5) The words used in the definitions are always more frequent than the target words
6) The word counts from which the target words were sampled typically give base forms
7) Target words in each cluster begin with different letters and do not have similar orthographic forms.

(Schmitt, Schmitt and Clapham, 2001)

2.3 Data Collection procedure and analysis.

The data was collected in November 2006 by the researcher alone, and all the instruments were administered within the time scheduled for the English class, which is 105 minutes. Tests were distributed in the following way: 30 minutes for the reading comprehension test, 30 minutes for the Tourism vocabulary Test, and 30 minutes for the VLT. Subjects were given 5 minutes rest between tests. The time for the first two tests was decided from the observations in the pilot study, the time for the VLT according to guidelines by Marin (2005) who found that 30 minutes was sufficient. Subjects were not allowed to use a dictionary or to talk to each other while answering the test.

Once the tests were marked the data was analysed using the SPSS 11.5 (Statistical Package for Social Sciences). The scores for every question were entered numerically: we assigned 0 for those questions answered wrong and 1 for those questions answered right. The 135 subjects were entered as cases; their course level was entered as well. The statistics used for the analysis of the data were mainly Regression by enter method and Regression by stepwise method.

2.5 Results and discussion

2.5.1 What type of vocabulary predicts reading comprehension of authentic tourism occupational texts, the vocabulary knowledge of general English words (in Schmitt's test) or the knowledge of distinctively frequent words in the field of tourism as occupation?

According to the regression (table 1) the relationship between the two types of vocabulary and reading comprehension of the tourism texts, the knowledge of the tourism Vocabulary predicts reading comprehension of tourism texts better than all the levels of the Vocabulary Levels Test. According to the regression the Tourism Vocabulary knowledge is significant while VLT is not significant. Therefore we can suggest that the 421 most distinctively frequent lexical items in the field of tourism predict reading comprehension of tourism text in a significant way.

It is noteworthy to signal that there are no previous studies in the literature that show the results obtained in the present study. Although some studies have studied the correlation between reading

and specialized vocabulary or between reading and high frequency general vocabulary they have not studied the three elements together in relation to reading comprehension of EOP texts or Tourism occupational texts. Most of the studies done previously reported the amount of general English words needed for the comprehension of texts of different sources. Researchers like Laufer, (1989); Laufer, (1992); Hirsh and Nation, (1992); Coady et al. (1993); Hazenberg and Hulstijn, (1996); Nation and Waring, (1997); Nation, (2001) studied the relationship between reading comprehension of different kinds of texts like academic texts, novels, and university textbooks and vocabulary knowledge and they all found that general English vocabulary knowledge is related to reading comprehension as we also found in the present study, but in our study the tourism vocabulary predicts reading better as shown in the regression.

Table 1: Regression results for two types of vocabulary and reading comprehension.

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	*Sig.*
		B	Std. Error	Beta		
1	(Constant)	25.617	3.032		8.449	*.000*
	TV	.975	.224	.498	4.346	*.000*
	VLT	*.075*	*.066*	*.131*	*1.145*	.254

a Dependent Variable: Reading comprehension

2.5.2 Within general English words, which frequency predicts reading comprehension of occupational tourism texts better?

In order to determine which of the levels best predict the reading comprehension of tourism texts from all the levels in the VLT (L2000, L3000, AV, L5000, and L10000) we performed a regression where all the levels were entered together with the two bands of the Tourism Vocabulary Test (table 2). We obtained highly significant results as shown in table 3; the three variables that have the most impact in the dependent variable are the correct answers for the first half of the Tourism Vocabulary Test, the correct answers for the second half of the Tourism Vocabulary Test and the L3000 (from the VLT). The results show us that from all the frequency levels the 3000 level is a better predictor of reading comprehension of tourism texts than the rest of the levels of the Vocabulary Levels Tests. The frequency level that may influence more the reading comprehension of tourism texts from all the levels in the VLT is the L3000. However the L3000 is only the third in predictive power, after both halves of the Tourism Vocabulary Test.

Table 2 Types of Vocabulary Knowledge that predict reading comprehension.

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.035	.871		12.664	.000
	Correct answers for the first half of the test	.646	.076	.596	8.554	.000
2	(Constant)	11.136	.847		13.145	.000

	Correct answers for the first half of the test	.401	.110	.370	3.641	.000
	Correct answers for the second half of the test	.262	.088	.303	2.987	.003
3	(Constant)	11.495	.857		13.415	.000
	Correct answers for the first half of the test	.301	.120	.278	2.515	.013
	Correct answers for the second half of the test	.195	.093	.226	2.096	.038
	L3000	.136	.068	.207	1.995	.048

a Dependent Variable: READING

This study concurs with other studies. For instance Hirsh and Nation's (1992) study shows that between 2,000 and 3,000 words are a good basis for learners to read unsimplified texts, Nation and Waring (1997) and Francis and Kucera (1982) suggest that knowledge of between 3,000 and 5,000 high frequency word families are essential for reading comprehension of texts of diverse topics. Laufer (1992) found in a regression analysis that the minimal vocabulary level for reading comprehension of academic texts was 3,000 words for both the Vocabulary levels test (chi square = 4.08, $p<0.05$) and for the Eurocentres Vocabulary test (chi square = 4.20,$p<0.05$), although the texts of her study were academic and the ones for this study were those that graduates of tourism read in the work field (occupational).

3 Conclusions

The present study was based on the assumption that the relationship between reading and vocabulary is strong, therefore it aimed to obtain new information about the relationship between reading comprehension and specialized vocabulary. The concern of the present research was to determine the correlation between knowledge of the most distinctively frequent words in the field of tourism and reading comprehension of tourism texts as well as the correlation between the knowledge of general English high frequency words and the comprehension of tourism texts. The information we were most interested in was about the relationship between distinctively frequent words in the field of tourism and reading comprehension of occupational tourism texts.

In contrast to what the literature on the relationship between reading and vocabulary suggests, the distinctively more frequent words in the field of tourism predict reading in a more significant way, which is a new result in this domain. Therefore we can suggest that for the comprehension of reading texts of tourism in Mexico, it is more essential to know the most distinctively frequent words of the field of tourism, than the general high frequency words.
However, it is inappropriate to assert that the results of a single research study are definitive. In order to describe the relationship between reading comprehension and vocabulary a lot of investigations have taken place. The present research aimed to describe one of the aspects of this phenomenon, but it is just one of the many investigations carried out to answer the questions about this issue. This research constitutes a point of departure for further research about the relationship between reading comprehension and specialized vocabulary or vocabulary that belongs to a specific field of study; therefore it is advisable to carry out further research in order to corroborate the findings obtained in the present study.

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APPENDIX A: READING COMPREHENSION TEST AND TOURISM VOCABULARY TEST

READING COMPREHENSION TEST
NAME:_____**GROUP**_____

TEXT 1

A)
All-inclusive!
INCLUDES ROOM, MEALS, ACTIVITIES. The All-Inclusive Meliá Puerto Vallarta is located in the Banderas Bay, on the Mexican Pacific coast, surrounded by spectacular mountains and moments away from the magical Mexican town of Puerto Vallarta. The resort is located in the exclusive Marina Vallarta area, right alongside the beach, surrounded by colourful tropical gardens, an artificial lake and an excellent beach, where fun and entertainment are unlimited. 5 minutes from airport; 15 minutes from downtown.
B)
Amenities
18-Hole Golf Course (walking distance), Swim-up bar, 2 Bars, 2 Tennis courts, Mini club, 3 Restaurants, Health spa, nearby Fitness centre, Basketball, Volleyball, Activities desk, Aerobics classes, Water polo, Currency exchange*, Laundry service*, Baby-sitting*, Shops*, Meeting facilities*, Water sports centre, Children's mini club, Ping pong tournament, Playground, Massage*, Largest pool in Puerto Vallarta, Professional shows every night performed by a Venezuelan ballet. *denotes activities/services available for an additional cost. Amenities and inclusions are subject to change at any time.
C)
Room Categories and Descriptions
Deluxe Garden view - Two double or two twin beds.
Deluxe Ocean view - Two double or two twin beds
Junior Suite - Ocean view with two double beds.
Spacious rooms in marble and with refurbished upholstery and amenities. 1 king bed or 2 doubles, private terrace facing the ocean or to the beautiful gardens, full bathroom with shower, bathtub and hairdryer, air-conditioning, TV, minibar with soft drinks, re-stocked everyday, phone and safety box.
D)
Dining:
Quetzal Restaurant - Open daily serving buffet breakfast and themed buffet dinners
La Palapa Grill Restaurant - Open daily for buffet lunch
Los Vitrales - Specialty restaurant, open daily for dinner only with a la carte service. Formal attire required, no shorts
E)
Children's Programs:
Club 4 - Kids up to 4 years old, Indoor play area, cartoons, cribs, strollers, certified nannies, outdoor play area, baby food, puzzles, costume parties, sing along
Mini Club - Kids 5 to 11 years old, Playground, climbing walls, trampoline, batting cage, camping in hotel area, basketball court, videos, face painting, pool table, air hockey, supervised games and BBQ area
Teen Club - Kids 12 to 15 years old, Teens game room, video arcade (tokens extra charge), climbing walls, batting cage, supervised water activities, tennis clinics, organized games
Notes: A maximum of 2 children can stay, play and eat free.
F)
Honeymoon guests receive a fruit basket and bottle of wine or champagne upon arrival. Room upgrade upon availability. Guests must show proof of marriage upon registration. Minimum 3 nights stay required. Guests celebrating a birthday will receive a surprise gift. Guest must show proof of date of birth upon registration.
G)
Resort Rating Key
Exceptional (Premier property with finest services,
Amenities and exquisite surroundings)
Deluxe (Prime location with outstanding service, elegant accommodations and a wide array of amenities)
Good (Tastefully furnished accommodations with
Assortment of amenities and services)

Moderate (Comfortable accommodations with limited
Amenities and services)
Fair (Clean, basic, budget property)
Very limited appeal
Open Mon-Fri 7:30am-10pm, Sat 9am-8pm, Sun 9am-10pm, CST

Questions 1-6 READ THE TEXT AND COMPLETE THE INFORMATION. THE FIRST ONE IS DONE FOR YOU.
1-Hotel:_____*Melia Puerto Vallarta*_____
2-Place:_____
3-Country:_____
4-Distance from airport:_____
5-Distance from city center_____
6- Two services provided with additional payment:_____

Questions 7-15 WRITE THREE EXAMPLES OF THE AMENITIES UNDER THE HEADINGS.

SPORTS	SPORT FACILITIES	SERVICES/ENTERTAINMENT

Questions 16-23 WRITE THE LETTER OF THE PARAGRAPH WHERE YOU FIND THE INFORMATION IN THE SPACE. NUMBER ONE IS DONE FOR YOU.

16- Is Melia Puerto Vallarta near the beach?   ____*A*____
17-How many clubs are there for kids?   _____
18-How many types of bedrooms are there?   _____
19-When do the restaurants open?   _____
20-Do guests receive gifts?   _____
21-Are the amenities always the same?   _____
22-What are the room facilities?   _____
23-How are resorts classified?   _____

TEXT 2 (IELTS 1,1996: 96-97)
CLASSIC TOURS-COACH BREAK INFORMATION
LUGGAGE
We ask you to keep luggage down to one medium-sized suitcase per person, but a small holdall can also be taken on board the coach.
SEAT ALLOCATION
Request for particular seats can be made on most coach breaks when booking, but since allocations are made on a first come first served basis, early booking is advisable. When bookings are made with us you will be offered the best seats that are available on the coach at that time.
TRAVEL DOCUMENTS
When you have paid your deposit we will send to you all the necessary documents and labels, so that you receive them in good time before the coach break departure date. Certain documents, for example air or boat tickets, may have to be retained and your driver or courier will then issue them to you at the relevant point.
SPECIAL DIET
If you require a special diet you must inform us at the time of booking with a copy of the diet. This will be notified to the hotel or hotels on your coach break, but on certain coach breaks the hotel used are tourist class and whilst offering value for money within the price range, they may not have the full facilities to cope with special diets. Any extra costs incurred must be paid to the hotel by yourself before departure from the hotel.
ACCOMMODATION
Many of our coach breaks now include, within the price, accommodation with private facilities, and this will be indicated on the coach break page. Other coach breaks have a limited number of rooms with private facilities which, subject to availability, can be reserved and guaranteed at the time of booking the supplementary charge shown in the price panel will be added to your account.
On any coach break there is only limited number of single rooms. When a single room is available it may be subject to a supplementary charge and this will be shown on the brochure page.
ENTERTAINMENT

Some of our hotels arrange additional entertainment which could include music, dancing, film shows, etc. The nature and frequency of the entertainment presented is at the discretion of the hotel and therefore not guaranteed and could be withdrawn if there is a lack of demand or insufficient numbers in the hotel.

Questions 24-29 CIRCLE THE APPROPRIATE ANSWER A-D
24-If you want to sit at the front of the coach
A-ask when you get on the coach
B-arrive early on the departure day
C-book your seat well in advance
D-avoid travelling at peak times
25-Your air tickets
A-will be sent to your departure point
B-must be collected before leaving
C-will be enclosed with other documents
D-may be held by your coach driver

26-If you need a special diet you should
A-inform the hotel when you arrive
B-pay extra with the booking
C-tell the coach company
D-book tourist class

27-It may be necessary to pay extra for
A-a bathroom
B-boat tickets
C-additional luggage
D-entertainment
28-Entertainment is available
A-at all hotels
B-if there is demand
C-upon request
D-for an additional cost
29-With every booking Classic Tours guarantee you will be able to
A-request high quality meals
B-take hand luggage on the coach
C-use your personal bathroom
D-see a film if you want.

TOURISM VOCABULARY TEST

NAME: _____
GROUP_____E-MAIL ADDRESS:_____

This is a vocabulary test. Please choose the right word or phrase on the left to go with each meaning on the right. Write the number of that word next to its meaning.

1-AIR INCLUSIVE
2-FARE BASIS   ___ *Prices may raise*
3-GREAT DEAL   ___*Children are received*
4-KIDS WELCOME   ___ *Price also covers plane tickets*
5-PLACE OF ISSUE
6-SUBJECT TO INCREASE

1-AGENCY SERVICE
2- BEACH   ___*Cost of travel*
3-FARE CALCULATION   ___*A person who visits a place for a holiday*
4-SPA   ___ *A place where people go for their health*

5-TOURIST
6-TRAVELER

1-BAGGAGE
2-BANNER   ___ *Personal belongings*
3-E-MAIL   ___ *Computer communication*
4-ITINERARY   ___ *Trip done exclusively by bus, car or train*
5-LAND ONLY
6-NOT VALID

1-CITY
2-DOWNTOWN   ___*A building to stay in*
3-FACILITIES   ___*A large and important town*
4-HOTEL   ___*Ownership may change*
5-PERSONALIZED
6-TRANSFERABLE

1-ENJOY
2-EXPLORE   ___ *Journey in an airplane*
3-FLIGHT   ___*Take pleasure in doing something*
4-ISLAND   ___*Improve, change to a higher standard*
5-PROMOTE
6-UPGRADE

1-AIRPORT
2-BAY   ___ *Hot*
3-CHARGE   ___*Place where planes arrive*
4-SANDY   ___ *Money paid to the government*
5-TAX
6-TROPICAL

1-BUS
2-CARRIER   ___ *Limit*
3-DIVE   ___*Swim under water*
4-PRIVACY   ___*Company that transports people*
5-RESTRICTION
6-SITE

1-DISPLAYED
2-FREE   ___*Main road*
3-HIGHWAY   ___ *Put where people can see*
4-HILLSIDE   ___ *Travel on the back of an animal*
5-RIDE
6-UNCHECKED

1-AVAILABILITY
2-BLANKET   ___*User*
3-CUSTOMER   ___ *Cover put on beds*
4-MENU   ___ *Ability to move freely*
5-MOBILITY
6-PRESENTER

1-AIRLINE
2-BOX   ___ *Rectangle*
3-CARD   ___ *Set of connected rooms in a hotel*
4-OFFLINE   ___ *Without connection to the computer network*
5-SUITE
6-ZONE

1-AGENT

2-ARRIVAL	___*Leaving*
3-CASH	___*Buying things and paying later*
4-CREDIT	___*Someone who stays in a place for few days*
5-DEPARTURE	
6-VISITOR	

1-AVIATION	
2-CAPITAL	___*The building and flying of airplanes*
3-MAP	___*Principal city in a country or state*
4-PACKAGE	___*A number of services bought together*
5-REGION	
6-RELAXATION	

1-COUNTRYSIDE	
2-GUEST	___*A person staying in a hotel*
3-INVITES	___*Following what was done in the past*
4-PASSAGE	___ *A place away from cities, with farms and woods*
5-SPECIAL	
6-TRADITIONAL	

1-BUS	
2-CUSTOMS	___*Physical game or activity*
3-ENTERTAINMENT	___*Income received by a government*
4-REVENUE	___ *A place where bags may be checked when you travel*
5-SPORT	
6-TERMINAL	

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"Something Here *What* Made Me Think."
Some New Views on Relative *What* in the Dialects of English.

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Abstract

Drawing on data from EDD, FRED-S and CDLAE, this article describes the non-standard use of what *as a relative marker found in the Southern and Midlands varieties of English. After a brief outline of the relative subordinators used in the history and in the modern dialects of English, we describe the different types of relative clauses, of matrix clauses, and of the antecedents relativised by* what. *The aim of the article is to shed some light on the syntactic nature of relative* what. *For this purpose we assume that any* wh-*word is a matrix—a bundle—of features that determines its semantic content and, partially, its syntactic nature. In the light of this, the matrix of relative* what *has only [+wh;+relative] as its distinctive features while it lacks a specification for [animacy]. This makes relative* what *a complementiser as opposed to the relative* wh-*items of SE that are all pronouns by virtue of the specification for this feature.*

1 Introduction[*]

In this contribution we take into consideration the non-standard use of *what* as a relative that introduces 'headed' or 'definite' relative clauses, as exemplified in (1):

(1)   I've got a poor son what's a cripple.
        (*EDD*, s. v. *what*, 4; n. Yks., Simpson, *Jeanie o'Biggersdale*, 1893, 35)

The phenomenon—known in the linguistic literature as "relative *what*"—characterises the non-standard varieties of English spoken in an area that covers the Midlands and more generally south-eastern England.[1] It has been described by many authors (Poussa 1988, 1991, Hermann 2005, a.o.) who focussed mainly on its sociolinguistic and/or distributional aspects. In this respect, the present paper is aimed at giving a contribution to the linguistic study of relative *what* by giving a syntactic analysis of the phenomenon. More specifically, we intend to identify its syntactic nature, that is, we intend to identify whether this relative *what* is still a proper *wh*-pronoun on a par with the relative *wh*-words of Standard English (SE), or whether it has become a lighter element akin to the relative subordinator *that*.

In order to do this, we first present a very brief overview of the relative systems of both the historical and the modern dialectal varieties of English (Section 2). The next two sections are concerned with a description of the data that we have collected from Joseph Wright's (1905) *English Dialect Dictionary* (*EDD*), the *Freiburg Corpus of English Dialects (Sampler)*, (FRED-S) and *The Computer*

[1] We will consider the use of relative *what* "cross-dialectally", without giving a detailed analysis of the relative-marker system in each individual variety.

Developed Linguistic Atlas of England (Viereck 1997; CDLAE). In particular, in Section 3 we give a description of the phenomenon while in Section 4 we show the syntactic contexts in which relative *what* is used. The core of our analysis is presented in Section 5, in which we assume that *what*—like all the *wh*-items—is associated with a bundle (a matrix) of features, which have been readjusted in the course of time to adapt the original/etymological interrogative nature of the *wh*-word(s) to the relative system of both Standard and non-standard English. Finally, Section 6 presents some conclusions.

2 Relativisation Strategies in the History and Dialects of English

2.1 Some historical notes: *Wh*-pronouns in Old and Middle English

Old English (OE) relative clauses—both headed and headless—were introduced by the following relative elements:

(i)   the indeclinable particle *þe*;
(ii)   the demonstrative/definite article *se*, *seo*, *þæt* (same number/gender as its antecedent, case by the verb of the relative clause);
(iii)   the combination of (i) and (ii), *se*, *seo*, *þæt + þe*.

Etymological *wh*-pronouns introduced only direct and indirect *interrogative* clauses; they were not used to introduce headed relative clauses (Mitchell 1985:§2053:88). However, towards the end of the OE period, they started to introduce headless relative clauses with a generalising meaning (cf. "whoever", "whatever", etc.) in the form *swa hwa/hwæt/hwær/hwelc/hwæþer swa*, (Mustanoja, 1960:191).

In Middle English (ME), the OE relative system collapsed.[2] By the end of the thirteenth century, *þat* was the most commonly used relative marker[3], which appeared in all types of relative clauses (headed, eventive[4] and headless), and relativised all types of antecedents (Mustanoja 1960). However, ME is also the period in which the *wh*-items started to be used as markers of headed relative clauses: *whom* and *whose* entered in the twelfth century, generally for animate antecedents, while *(the) which (that)* entered a bit later and it could relativise both animate and inanimate antecedents. Both *whom/whose* and *which* started to appear in non-restrictive relative clauses and even though they appeared rather early, they were rather infrequent till the Late ME period (*which* for instance supplanted *þat* only in the fifteenth century). The last one to enter the relative system of ME was *who* in the fifteenth century (Fischer et al. 2000).

As far as relative *what* is concerned, it is not attested at all in both OE and ME. In OE, the attested form *eall hwæt* is in fact only an apparent exception since the *hwæt*-clause is in apposition to *eall* rather than being a true relative (Mitchell 1985). Mustanoja (1960:194) states that in ME *what* occurred as a relative marker mainly "after antecedents of less definite character, like *all* and *nothing*"[5], in eventive relatives (replaced by *which* in Late ME), and in headless relatives.

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[2] For the sake of simplicity, we are oversimplifying here a much more complex situation. For a more detailed description see Mustanoja (1960) and Fischer et al. (2000).

[3] The reasons for this general use of *þat* as the only relative marker may be due to the loss of case distinctions in the demonstrative paradigm and the loss of grammatical gender, that affected the language at a very early stage (Early Middle English).

[4] "Eventive" relative clauses take a whole sentence as their antecedent, like in *Paul speaks five languages, which I find amazing.*

[5] It should be noted, moreover, that Modern German, which—like OE—uses the determiners/demonstratives *der/die/das* as headed relative clause markers, has *was* "what" when its antecedent is *alles* "all", or *nichts*, "nothing":

Nevertheless, "*what* [was] not used with a noun antecedent as in the modern nonstandard type: *the man what came*" (Traugott 1972:155).

Before turning to the modern dialects, we would like to spend a couple of words on how the *wh-*words from interrogative elements evolved into relative markers. It is traditionally assumed that the OE and ME interrogative *wh*-pronouns entered the relative system via headless relative clauses (Mustanoja 1960, Romaine 1980). Such a process is found in other Indo-European languages as well as other language families, probably due to the fact that headless relatives "share structural and semantic features with interrogatives", (Benincà, to appear: fn. 1):

(2)   a.   *I will buy what he's selling.*
      b.   *I will inquire what he's selling.*

2.2 Relativisation strategies in the modern dialects of English

Modern English non-standard varieties show different strategies for the formation of relative clauses, some of which overlap with SE, while others do not. Here follows a succinct overview of the major strategies found cross-dialectally (Berizzi 2001):

a)   *Wh*-Elements (*who/whose; which/what).* Unlike SE, the dialects display relative *what* and *which* for both animate and inanimate antecedents.

b)   Complementisers *that*, *as* and *at*. The use of the complementiser *that* is probably the strategy most frequently used both in SE and in the dialects. Some northern non-standard varieties however have also a form for the genitive, i.e. *that's*, as in *A boy that's mother died last week* (A. Radford p. c.; see also below).
      The relative complementisers *a*s and *at* are found only in the dialects: *as* characterises an area covering the Central Midlands, East Anglia and parts of the south-western counties, while *at* is typical of Scotland and Northern England. The fact that *that*, *as* and *at* have the following morpho-syntactic characteristics (Radford 1988):

(3)   - no pied piping, only preposition stranding;
             - insensitivity to the animacy of the antecedent;
             - no case distinction (i. e., invariable).

      is evidence of their complementiser status.[6]

c)   *Wh*-Element + Complementiser. This strategy is considered a violation of the Doubly Filled COMP Filter (Chomsky & Lasnik 1977) since it involves the co-occurrence of a *wh*-word and a complementiser, generally *that*.[7]

(i)   Ich verstehe   alles, was du sagst.
         I   understand   all   what you say-2sg.

(ii)   Es gibt nichts, was mir   gefällt.
         It gives nothing, what to-me likes. (There's nothing I like)

These are indefinite relative clauses in which *was* is a pronoun (Benincà, to appear).

[6] It should moreover be noted that *that*, *as* and *at* also introduce embedded declarative clauses:

(i)   He said *as* he wod. (*EDD*, s. v. *as*, conj.; North-East Lancashire)

(ii)   He said *at* he wou'd. (*EDD*, s. v. *at*, conj; North-East Lancashire; Derbyshire)

A. Radford pointed out to us that there are also cases such as "I reckon *as how* Leeds United will win the championship".

[7] Such a strategy is very well attested in ME; though impossible in SE, it is quantitatively restricted in the modern dialects. Radford (1988:500) and Zwicky (2002) report cases of the co-occurrence of *that* with a *wh*-phrase (i.e., *wh*+NP).

d)   Resumptive Pronoun in co-occurrence with the relative marker. A personal pronoun is inserted in the relative clause in order to display case and person features which are not visible on the relative marker.

e)   Zero Relative, Ø, (or Contact Clause). In SE, the "zero strategy" is restricted exclusively to restrictive relative clauses on the (prepositional) object but the dialects also display zero subject relative clauses, most frequently when the matrix clause contains a copular or presentational structure such as existentials, clefts and pseudo-clefts, and nominal predications of the form NP *be* NP.

3 Description of the phenomenon

In this section we give a descriptive overview of relative *what*. We will consider whether its use has some restrictions concerning the type of antecedent, the type of relative clause and the position it can (or cannot) relativise.

3.1 Types of Antecedents

As already noted by other scholars (Poussa 1988, 1991, Cheshire et al. 1993, Hermann 2005 a. o.), relative *what* relativises both animate (4a) and inanimate (4b) antecedents:

(4)   a.   There was ehm *Mrs Acres* **what** was on Hollow Stone
                (FRED-S, NTT 006; Midlands, Nottinghamshire, Nottingham)

       b.   *the stuff* **what** came from the gas corroded the cables
                (FRED-S, MDX 001; South-East, Middlesex, Pinner)

(4a,b) above show moreover that *what* relativises both proper names and common nouns. Its antecedent can also be a personal pronoun (5) or an indefinite quantifier (6):

(5)   It would be *them* **what** were a bit better off, 'cause there were one or two a bit better off in them days.
       (FRED-S, NTT 009; Midlands, Nottinghamshire, Nottingham)

(6)   she wasn't a trained midwife but she used to look after *anybody* **what** had children,
       (FRED-S, NTT 009; Midlands, Nottinghamshire, Nottingham)

3.2 Types of Relative Clauses

Relative *what* introduces both restrictive (7a) and non restrictive relative clauses (7b):

(7)   a.   I think Drewry and Edwards they was about the only firm **what** was going well
                (FRED-S, NTT 013; Midlands, Nottinghamshire, Nottingham)

       b.   and then you mixed it with a dry leaf, **what** the girls used to strip by hand
                (FRED-S, NTT 004; Midlands, Nottinghamshire, Nottingham)

However, relative *what* is by far more common in what have been defined as "definitorial" relative clauses (Benincà & Cinque, in press), i.e., a type of relative clause that shares some characteristics with both restrictive and non-restrictive relative clauses. Definitorial relative clauses do not strictly refer to the antecedent but to the features possessed by the class to which the antecedent belongs. In

other words, this type of relative clause provides non-redundant information on its nominal head but this nominal head is already identified. Some examples of definitorial relative clauses are:

(8) a. there used to be some lodging houses what they call lodging houses for people **what** 's got nowhere to go you know
(FRED-S, NTT 006; Midlands, Nottinghamshire, Nottingham)

b. we put cows **what** 's giving five gallons a day and over in one field and five gallons and under in another field.
(FRED-S, NTT 015; Midlands, Nottinghamshire, Lambley)

c. If I didn't know what a cowman is, you would tell me: He is the man **what** looks after the cows.
(CDLAE; S 8b: III.3.7 *that*, East Anglia, Midlands)

As for the syntactic characteristics of the definitorial relative clause, much research is still to be done.

3.3 Position Relativised

What relativises the subject (9) and the object position (10) very easily:

(9) so the fellow **what** were learning me, says, I 'm sorry I couldn't get you last night
(FRED-S, NTT 001; Midlands, Nottinghamshire, Nottingham)

(10) I think at one time we used to get eh thirty shillings for every baby **what** we had
(FRED-S, NTT 009; Midlands, Nottinghamshire, Nottingham)

This is rather expected given Keenan & Comrie's (1977) "Accessibility Hierarchy" (AH) that orders the syntactic positions from the most to the least frequently relativised:

(11) Subject ≥ Direct Object ≥ Indirect Object ≥ Oblique ≥ Genitive ≥ Object of Comparison.

As for the positions lower than object, *what* relativises the indirect object position, the oblique position and the genitive position. It is very important to notice that in the case of indirect object/oblique positions, *what* appears with a preposition which is obligatorily stranded. Similarly, in the case of the genitive position, the relative introduced by *what* has an element that expresses the possessive relation, either in the form of possessive pronoun (13), or as the genitive marker *'s* (14):

(12) a. and they used to move that belt every day in that track **what** you 'd took the coal *from*, yeah.
(FRED-S, NTT 004; Midlands, Nottinghamshire, Nottingham)

b. Is that t'hat **what** thoo was wed *in* ?
(*EDD*, sub. *what*, 4; Westmoreland, B. K.)

(13) That man's uncle was drowned last week.
In other words, you might say, that's the chap **what** *his* uncle was drowned.
(CDLAE; S 10: IX.9.6 *whose*; Essex, Cornish Hall End)

(14)   a.   That man's uncle was drowned last week.
              In other words, you might say, that's the chap **what***'s* uncle was drowned.
              (CDLAE; S 10: IX.9.6 *whose*; Essex, Netteswell)

       b.   That's the girl **what***'s* mum loves horror films.
              (Cheshire et al. 1993:69, item 118)

4 The Contexts of Relative *What: definitorial relative clauses.*

As mentioned in §3.2., *what* appears with both restrictive and non restrictive relative clauses. However, the most interesting context in which *what* appears is the definitorial relative clause. In what follows, we present the two contexts that we have identified in which relative *what* typically introduces definitorial relative clauses.

The first context that we identify concerns the structure of the clause that contains the antecedent. Two patterns emerge: either the antecedent relativised by *what* is part of an existential construction or it is the nominal predicate of a copular structure (clefts, pseudo clefts and clauses of the form NP *be* NP). Here are some examples:

(i)   <u>existentials</u>

(15)   a.   And of course there was a lot of clauses **what** you could do and **what** you couldn't do.
              (FRED-S, LAN 001; North, Lancashire, Barrow)

       b.   there used to be factories **what** used to let lace
              (FRED-S, NTT 006; Midlands, Nottinghamshire, Nottingham)

       c.   there was a man **what** used to work on the guillotines cutting boards
              (FRED-S, NTT 006; Midlands, Nottinghamshire, Nottingham)

(ii)   <u>cleft-sentences with focalising force</u> (the focalised element, if any, is in capital letters):

(16)   a.   it was GIRLS **what** run it.
              (FRED-S, KEN 003; South East, Kent, Faversham)

       b.   It's ALL DUKES **what** writes in them.
              (*EDD*, sub. *what*, 4.; s. Lancashire, s. Cheshire, Derbyshire)

       c.   it was THE BUMP **what** done that
              (FRED-S, NTT 005; Midlands, Nottinghamshire, Southwell)

       d.   I said, It weren't US **what** owed you money
              (FRED-S, NTT 013; Midlands, Nottinghamshire, Nottingham)

       e.   That 's ALL PUG EARTH, **what** them houses stand on
              (FRED-S, KEN 003; South-East, Kent, Faversham)

(iii)   <u>nominal predications of the form XP *be* XP.</u>
          See examples (7a) and (8c).

The second context we identify concerns the type of antecedent. *What* can introduce a definitorial relative clause after "generic antecedents", that is, NPs like *people* (17) or *one* (18), and indefinite quantifiers like *anybody* (19) and example (6) above:

(17)   she used to sell corned beef and eh pickled onions or anything like that for *people* **what** was working around there, **what** couldn't get home for dinner
(FRED-S, NTT 006; Midlands, Nottinghamshire, Nottingham)

(18)   it used to be *one* **what** used to come from Shire Hall at oh, somewhere like that
(FRED-S, NTT 009; Midlands, Nottinghamshire, Nottingham)

(19)   she used to look after *anybody* **what** had children
(FRED-S, NTT 009; Midlands, Nottinghamshire, Nottingham)

However, we would like to point out that the two patterns we have identified do not exclude the possibility for the antecedent to be followed by another kind of relative clause. A good example of this is the instance of relative *what* we reported in the title of this contribution, here repeated in (20):

(20)   Aye, see then, it was *something* here, **what**, **what** made me think.
(FRED-S WLN 004; Scottish Lowlands, West Lothian, Falkirk)

In this example, there is even the co-occurrence of the two contexts—an existential construction and a quantifier antecedent—but the relative clause following *something* is not of the definitorial type. Some other similar examples are the following:

(21)   The attraction was there it was *something* **what** only used to come once a week for us kids
(FRED-S, NTT 016; Midlands, Nottinghamshire, Nottingham)

(22)   But t' biggest *thing* **what**, what I used to have, when I was a little girl, were going to the little Blackpool.
(FRED-S, LAN 006; North, Lancashire, Preston)

(23)   sister's husband, he got killed, he was *the only one* **what** got killed.
(FRED-S, NTT 001; Midlands, Nottinghamshire, Nottingham)

As we have just said, the relative clauses involved in the above examples are not of the definitorial type, but they seem to be neither restrictive nor non-restrictive. Even though this is a most interesting question, we will not tackle this topic any further since it will be beyond the scope of this paper.

5 New Perspectives on *What* as a Relativiser

We now turn to the main concern of this paper, that is, to the identification of the syntactic nature of *what* as a relativiser. In order to do this, we need first to look "inside" *what*.

Etymologically, *what* derives from OE *hwæt*, the neuter (nominative/accusative) form of the interrogative *wh*-pronoun *hwa*, "who". From a descriptive point of view, grammars generally label *wh*-words as pronouns. However, not all the uses of the *wh*-items are pronominal (cf. *what* in cases like *What book have you bought?*). In order to give a unitary account of *wh*-words, we need a more abstract level of representation: we assume that each *wh*-word is associated with a matrix of features the combination of which determines its semantic content and—at least partially—its use in the

syntax. These features are hierarchically ordered since some of them are prominent over others. (24) below is a first representation of the matrix we propose for English *wh*-items:

(24)   [WH]
       [Interrogative]
                 [+/- DISTRIBUTIVE]
                 [+/- kind]   ┐ [+/- animacy]
       [Relative]   ├─   [φ-features: case; number; gender]
                 [+/- IDENTIFIED]   ┘

In this matrix, [WH] is intended as a "hyper-feature", that is, it is a feature that is common to all the *wh*-items.[8] This [WH] feature is then to be further specified for [Interrogative] or [Relative].[9] Each of these two has other lower features some of which have to be specified while the specification of the remaining features is not necessary because they are either not relevant or unavailable. Once all the relevant features are specified, we have a matrix that will identify the appropriate *wh*-word to be chosen from the lexicon.

Let us see this more in detail. When an element is specified for [WH] and [Interrogative], the next features that have to be specified are:

- [+/- distributive], which is acquired by a *wh* element when it is linked to a variable that has to be identified in a given set. When this feature is specified for [+distr] the only *wh*-word available in English is *which* as in *I have six apples, Which*[+distr.] *will you have?* or *I wonder which book you bought*.[10]

- [+/- kind], which is acquired by a *wh*-word when it is part of a complex *wh*-phrase in which the *wh*-word modifies an NP thus asking about the type/kind which this NP belongs to. Once this feature is specified for [+kind] the only possible choice in English is *what* as in *What wine will you take?* that can be rephrased as *What kind of wine will you take?*[11]

The positive setting of one of these two features excludes the positive setting of the other, i.e., there is no single interrogative *wh*-word in English that has the features [+distributive, +kind]. On the contrary, the combination [-distributive, -kind] is possible in English, and characterises the matrix of both *who* and *what* in cases like *Who is he?* and *What are you doing?*. What distinguishes between *who* and *what* is the specification of the [animacy] feature: if the feature is specified for [+animate] we have a matrix that identifies *who*, if it is specified for [-animate] we have a matrix that identifies *what*. To complete the picture, once the [animacy] feature is specified, the case feature will determine if the *wh*-element to be chosen is *who*, *whom* or *whose* (*what* would be specified for case too, but this will not show overtly due to the lack of case morphology, recall the etymology above).

Before considering the *wh*-relatives, we would like to spend a couple of words on *what* in cases like *What song is number one in the charts?*. There is an apparent structural similarity with *what* + NP with a [+kind] reading but here *what* conveys no such a reading. We limit ourselves to notice that it

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[8] As such, this [WH] feature gives no specification on the categorial status of the *wh*-elements.

[9] We also assume that the [WH] can be specified for [Exclamative] yet we have not included this specification in (24) since it has no direct bearing on the analysis of relative *what* that we propose here.

[10] An anonymous reviewer points out that *what* can have a distributive reading in colloquial American English. We believe that this is a manifestation of the underspecified nature of *what* along the lines of Munaro & Obenauer (1999). We will deal with this specific topic in future research.

[11] [+/-kind] is not in capital letters like [+/-distributive] since the former can be lexicalised through the NP *kind of*.

is specified for [-distr., -kind] like *who* and *what* (interrogative pronoun), but it is clear that some other specification is needed in order to capture the difference between this adjectival and the above-mentioned pronominal use. We leave this question open for future research.

Turning to the matrix in (24), an element that has a [WH] feature can also be specified for [Relative] in English. In this case, the following feature has to be specified:

• [+/- identified] refers to the presence/absence of a lexicalised antecedent.

More specifically, if the feature is specified for [-identified], the further specification of [+/-animacy] will determine whether the resulting matrix will identify *who* or *what* (notice that this process of specification parallels the one that identifies *who* and *what* as interrogative pronouns). On the other hand, if [+identified] is selected, the specification on the animacy feature will identify *who* or *which*.

In the light of what has been said so far, relative *what* in the above-mentioned dialects is associated with a matrix in which only [WH] and [Relative] are specified. The fact that it is not sensitive to the animacy of its antecedent (cf. 3.1) means that there is no further specification for [animacy] in its matrix. Cardinaletti & Starke (1999) show that the possibility for an element to refer to both human and non-human entities is one piece of evidence—among others—of its deficient syntactic status.[12] In these terms, it follows that relative *what* is a deficient element and its deficient syntactic nature makes it a non-full pronoun unlike relative *who* or *which* in SE.

The syntactic evidence of the non-fully-pronominal status of relative *what* comes from the following examples with a resumptive pronoun in the relative clause that expresses the animacy and φ–features that *what* cannot express:

(25)   a.   and I often wonder if there's *any girls* living today **what** *they* know what banders were
                    (Shorrocks, 1982; Great Manchester County)

            b.   *Lovely horses* **what** *they* come out there
                    (Ihalainen, 1980; Somerset)

            c.   he 's got *a girl* **what** *she* 's twenty-four or five.
                    (FRED-S, NTT 015; Midlands, Nottinghamshire, Lambley)

Moreover, *what* displays the same morpho-syntactic characteristics of the complementisers *that*, *as* and *at* (cf. (3)):

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[12] According to Cardinaletti & Starke (1999), some grammatical categories like pronouns, adverbs and adjectives are divided into three classes of elements: strong, weak and clitic. Weak and clitic elements are defined as "deficient" since they have a restricted syntactic distribution if compared to strong elements, i.e., they cannot be modified, coordinated or used in isolation. As far as *wh*-elements are concerned, this distribution is observable only with interrogative *wh*-items; in the *wh*-relative system, relative *what* can be considered the weakest or the most deficient element if compared to the other *wh*-relativisers that are clearly full (strong) pronouns.

(26)   - only preposition stranding, cf. (10a,b);[13]
        - it is used for both animate and inanimate antecedents, (4a,b);
        - it is indeclinable.[14]

However, unlike these complementisers, it is not found as a declarative subordinator as can be seen by the ungrammaticality of (26):

(26)   *I said what Paul is nice.

In principle, the *wh*-nature of an element does not prevent it from becoming a declarative complementiser: in Italian, for instance, the declarative complementiser *che*, "that", derives from the Latin *wh*-complementiser *quod*. It seems then that *what* is specialised as a relative complementiser, while *that*, *as* and *at* introduce both declarative and relative clauses.

In the light of this, we propose that the relevant feature for the relative *wh*-words are [+/- identified] and then the presence of the specification [+/- animacy] determines whether a *wh*-word is a pronoun or a deficient element:

(27)   [+identified][+animacy]   *who/whom/whose*   pronoun in both SE and dialects
        [+identified][-animacy]   *which*   pronoun only in SE
        [+identified][+/-animacy]   *what*   non-pronoun only in the dialects

        [-identified][-animacy]   *what*   pronoun
        [-identified][+animacy]   *who*   pronoun
        *[-identified][+/-animacy][15]

As a final remark, we would like to point out that there seems to be a similarity between the contexts for relative *what* identified in Sections 3 and 4 and those of the zero subject relative strategy that we illustrate below:

- definitorial relative clauses:
(28)   a.   You might know a friend ø works in a blacksmith('s).
                (Shorrocks 1982; in Berizzi 2001:103, ex. (8a))

        b.   Leck is a young boy ø was coming home from school.
                (Berizzi 2001:103, ex. (11))

- existentials:

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[13] A. Radford (p. c.) suggests that the fact that *what* is found only with preposition stranding may be stylistic since preposition stranding is obligatory in low styles (and relative *what* occurs in this type of styles). There are no instances of relative *what* with pied-piping in the corpora taken into consideration. However, this fact is straightforwardly predicted by the assumption that relative *what* is a deficient element since this type of elements cannot be objects of prepositions (Cardinaletti & Starke 1999).

[14] We assume that the possessive form *what's* is not declined for genitive in the same way *whose* is declined for genitive. *What's* seems to parallel in these dialects the possessive *that's* and *at's* which are attested in other dialectal varieties (cf. .CDLAE; S 10: IX.9.6 *whose*)

[15] This combination is impossible in Standard and non-standard Modern English. ME *þat* is the only element that shows this combination, yet, interestingly enough, it is not a *wh*-pronoun: *Herkeneþ þat loveþ honour* and *He ete and dranc þat was his will* (Mustanoja, 1960:190).

(29)   There's one single house ø stands right against the school gates
        (FRED-S, MDX 001; South-East, Middlesex, Pinner)

- clefts with focalising force;
(30)   It was J. H. ø lived in there.
        (Hermann 2005: 64, ex. (25a))

 "generic antecedents";
(31)   a.   The ones ø was here was all going back to France
                (Hermann 2005: 69, ex. (31b))

        b.   Yet, at them times, anybody ø wanted to learn could learn
                (Hermann 2005: 69, ex. (31a))

The correspondence[16] of contexts between zero and *what* can indicate that the two elements are similar in nature, in that they are not specialised for a number of relevant features (for example, animacy).

6 Conclusions

In this contribution we have claimed that *wh*-words are matrixes of features whose combination determines their semantic content and their syntactic status. Such an assumption has allowed us to capture, in more abstract terms, the syntactic nature of relative *what* revealing thus a certain degree of asymmetry with respect to the other relative *wh*-items. This asymmetry consists in not being specified for [animacy] which determines its syntactic nature: relative *what* is not a full pronoun like its sister *wh*-relative pronouns in SE. Evidence for this comes from cases of *what* with a resumptive pronoun in the relative clause (25) and from the morpho-syntactic properties listed in (26). *That*, *as* and *at* found in many dialectal varieties have these same properties and are considered complementisers. Relative *what* is then a complementiser like *that*, *as* and *at*, with the only difference that it is specialised for relative clauses while the latter introduce both declarative and relative clauses.

Corpora

CDLAE = Viereck, W. in collaboration with H. Ramisch (1997). *The Computer Developed Linguistic Atlas of England*, *2 vols.* Tübingen: Max Niemeyer.

EDD = Wright, J. (1898-1905). *The English Dialect Dictionary*, *6 vols.* Oxford: Henry Frowde.

FRED-S = *The Freiburg Corpus of English Dialects (Sampler).* (2000-2005). English Dialects Research Group. Albert-Ludwigs-Universität Freiburg.

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[16] Notice that another parallelism between *what* and zero comes from the fact that both of them are used in the relativisation strategy with resumptive pronouns, see (26) for *what* and the following for zero:
(i)   There was a father ø *he* had rather a strongish boy.
        (Ihalainen, 1980; in Berizzi, 2001; p. 105, ex. (1))

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A prosodic study of wh-questions in French natural discourse

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Abstract

This paper concentrates on constituent questions in French, a language that exhibits both fronted and in situ wh-phrases. It reports the results of the study of a corpus of constituent questions produced by a female reporter who consistently uses the "non-standard" (and non-radiophonic) variety of this language during around 30 field interviews led between 2005 and 2009. The first part of the paper concentrates on the linguistic factors influencing the choice of wh-structure. The results tend to indicate that the End-Weight principle is not a strong factor favoring the choice of the wh-in situ structure, contrary to what was previously observed by Coveney (1995). They also tend to indicate that the End-Focus principle plays an important role in favoring wh-in situ structures. The second part of the paper presents the results of an acoustic investigation of a subset of the data in terms of absolute duration, articulation rate and pitch profile. The results tend to confirm that the wh-phrase can only be said to be prosodically prominent when it occurs in situ.

1 Introduction

When it comes to wh-questions in languages such as English, German or French, one long standing puzzle is the lack of *systematic* correspondence between the wh-phrase, which is usually considered to be the focus of the sentence, and sentence stress (Ladd 1996/2008, Hedberg & Sosa 2002)[1]. This fact has led researchers to more or less implicitly assume that wh-questions are not subject to the same (pragmatic) contextual appropriateness requirement as declaratives (among others Tomioka 2007). The path taken in recent prosodic studies of French wh-questions is that their prosody is a reflex of some semantic aspects of the question or the wh-phrase. Beyssade et al. (2007) argue that Standard French wh-questions' intonation is consistent with their partition of the semantic content into a function and a restriction, and according to Baunaz & Patin (2009), the wh-phrase's intonation reflects its non-presuppositional, partitive or specific status.

Conversely, Hamlaoui (2009) concentrates on wh-questions' prosodic structure and argues that in Francilian French, the dialect spoken in the Paris metropolitan area, the constraints related to prosody and information structure that are effective in declaratives are also effective in wh-questions: the wh-phrase is treated as an 'information' focus in that it only carries sentence stress when the non-wh portion consists of items that are given and should consequently be destressed. One of the specificities of this language is that the strong requirement for sentence stress to be kept rightmost is responsible for the absence of wh-fronting when the wh-phrase is the only item that can carry sentence stress. The aim of the present study is to test this hypothesis using a homogenous corpus of spoken French.

The structure of this article is as follows: section 2 offers a presentation of the corpus, section 3 concentrates on the linguistic factors influencing the choice of wh-structure as well as on the acoustic

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characteristics of a subset of wh-questions in terms of duration (absolute duration and relative articulation rate) and pitch. Section 4 concludes the paper.

2   The *Là-bas* corpus

2.1 Natural discourse

The present study is based on a corpus of 222 constituent questions. These questions constitute all the genuine requests for information produced between 2005 and 2009 by one of the reporters of the France Inter radio show *Là-bas si j'y suis*, who consistently uses the variety of French called "spoken", "informal", "non-standard" or "demotic" French (Massot 2008, Zribi-Hertz 2006 and references therein). This dialect is the one learnt on "one's mother's lap", on playgrounds and in sandboxes and is the one used in most French speakers' everyday life[2]. It is usually spoken and written in non-monitored contexts. One of the trademarks of the radio show in question is that it aims to provide a different perspective on current social, political or economic events. Its atypical nature is likely partly responsible for the fact that the reporter, a woman in her late twenties/early thirties does not generally activate her Standard French grammar when interacting with her interviewees, contrary to a current practice among reporters on the French radio. Most importantly, all interviews consist of non-read and non-media spontaneous speech, the data are not influenced by the presence of an investigator and all wh-questions come with their context[3].

2.2 Basic quantitative facts

Table 1 displays the different types of wh-questions found in the *Là-bas* corpus.

Table 1 : *Distribution of the different types of wh-questions in the* Là-bas *corpus*

Position	Quoi *what*	Combien (de N) *how much/many of N*	Comment *how*	Quel(le(s)) *which*	Pourquoi *why*	Où *where*	Qui *who*	Quand *when*
Fronted (71)	19	5	20	3	22	0	1	1
In situ (105)	36	22	11	22	0	10	2	2
Other (46)	20	16	0	7	0	0	2	1
Total (222)	75	43	31	32	22	10	5	4

The category "Other" groups together wh-questions that can neither be categorized as exhibiting an "In situ" nor a "Fronted" wh-phrase, namely cleft wh-questions such as the one in (1), specificational wh-questions such as the one in (2) and *combien*-questions of the type in (3).

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2   Some of its grammatical properties may vary depending on the speaker's social and geographic background.
3   Although the interviews are (later) broadcasted on the radio, the interviewer does not use a "radiophonic speaking style". On the specificities of this speaking style, see Goldman et al. (2007).

(1) Mais alors c'est quoi   qui est nouveau maintenant?
     But   then it-is what that is new   now
     'But then what is it that is new now?'

(2) C'était quoi cette odeur?
     It-was what this smell
     `What was this smell?'

(3) Ca fait   combien   de temps que vous êtes dans la   police?
     It makes how-much of time   that you   are in   the police
     'How long have you been in the police?'

The category "Other" also contains wh-questions whose wh-phrase in situ could not be fronted without causing the ungrammaticality of the resulting structure. The following sentence illustrates this type of wh-questions:

(4) Vous êtes prof   de quoi?
     You are professor of what
     'What do you teach?'

It also contains fronted wh-questions which do not have an in situ counterpart, such as subject   wh-questions of the type illustrated below[4].

(5) Qu'est-ce qui vous dérange?
     What-is-it that you bothers
     'What bothers you?'

In the *Là-bas* corpus, wh-questions with a wh-phrase left in situ are in the majority, as they correspond to 47.3% of the data. Fronted wh-questions represent 32% of the data and only 22% when the 22 *pourquoi*-questions are excluded, as *pourquoi* ("why") cannot occur in situ.

Although the *Là-bas* corpus is so far smaller than most of the corpora used in sociolinguistic studies of French wh-questions (see Coveney 1995 and references therein), it contains almost as many in situ wh-questions as the corpus used in Coveney (1995) and I believe that it does provides a valuable overview of the investigated dialect. When compared with a corpus of similar size, it tends to confirm the idea that the use of in situ wh-questions is on the increase, as Ashby's (1977) corpus only exhibits 38.8% (N = 85) of in situ wh-questions.

3   Analysis

3.1 Distribution of fronted/in situ wh-questions according to various linguistic factors

In his study of French wh-questions, Coveney (1995) focuses on the possible factors affecting the choice of interrogative structure. Among the four hypotheses that he proposes to test based on a corpus of 845 wh-questions from the York Child Language Survey corpus (henceforth YCLS corpus), I will only concentrate on the following two:

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4   Subject cleft wh-questions can be considered to be the in situ counterpart of subject fronted wh-questions but due to lack of space, this topic will not be discussed here (see Hamlaoui 2008 for a recent account of French clefts).

- Hypothesis 1: "(...) in accordance with the principle of End-Weight, the longer the QU element [the interrogative pronoun], the greater will be the tendency to use SVQ [a question with an interrogative pronoun in the corresponding argument/adjunct position] rather than a QU-fronted structure."

- Hypothesis 2: "(...) in accordance with the principle End-Focus, the less informative the SVC part of the interrogative ["the non-wh portion" of the question], the greater will be the tendency to use SVQ."

Testing these two hypotheses will also permit to give a global overview of the data. The following table displays the results regarding the choice of structure with respect to the length of the wh-phrase.

Table 2: Relative frequency of fronted/in situ questions according to length of Wh-phrase

Length of wh-phrase (in syllables)	In situ wh-phrase ("SVQ")		Fronted wh-phrase	
	N	%	N	%
1	40	67.8	19	32.2
2	38	60.3	25	39.7
3	18	90	2	10
4	6	100	0	0
5	3	50	3	50
All	105	47.3	49	22

Contrary to what is observed by Coveney in his data from the YCLS corpus, the present data do not allow us to conclude that monosyllabic wh-phrases disfavor the use of the wh-in situ structure, as in 67.8% of the cases in which a wh-phrase is monosyllabic it appears in situ. The categories 3, 4 and 5 syllables contain few tokens and therefore do not allow strong conclusions. However, one can note that the longest wh-phrases (5 syllables) are equitably distributed over the two types of wh-questions. In the present corpus, the tendency to use SVQ is thus not greater for the longest wh-phrases. The 3 fronted wh-questions in which the wh-phrase is made of 5 syllables are given in (6).

(6) a. Dans quelles conditions on   peut porter ces   colliers?
       in   which conditions one can   wear   these necklaces
       `In which conditions can one wear these necklaces?'
    b. Combien   de plans sociaux   vous avez dû   faire?
       how-many of planned redundancy schemes   you have must to-do
       `How many planned redundancy schemes have you had to manage?'
    c. En cinq ans,   vous, combien   de plans sociaux   vous avez fait?
       in five years you   how-many of planned-redundancy schemes you have done
       `In five years, how many planned redundancy schemes have you managed?'

In these 3 sentences, the SVC is either longer than the wh-phrase ((6a)), the same length as the wh-phrase ((6b)) or shorter than the wh-phrase ((6c)). Long wh-phrases can thus be fronted even when they are the same length as or longer than the SVC. This seems to also cast some doubt on the idea that the principle of End-Weight is a strong factor affecting the choice of interrogative structure.

The following table shows the results regarding the choice of wh-structure according to the length of the non-wh portion ("SVC").

***Table 3**: Relative frequency of fronted/in situ questions according to length of SVC*

Length of SVC (in syllables)	In situ wh-phrase ("SVQ")		Fronted wh-phrase	
	N	%	N	%
$1 \leq n \leq 3$	66	85.7	11	14.3
$4 \leq n \leq 6$	29	61.7	18	38.3
$7 \leq n \leq 9$	8	40	12	60
$10 \leq n \leq 12$	2	28.6	5	71.4
$13 \leq n$	0	0	3	100
All	105	47.3	49	22

In order to calculate the length of SVC, all the left and right dislocated items, as well as all the vocatives and the sentence initial conjunctions were excluded. The results indicate that in situ wh-phrases associate with a shorter non-wh portion (SVC) than fronted wh-phrases: 63% of the in situ wh-questions present an SVC of 1 to 3 syllables and the use of a wh-question with an SVC of 1 to 3 syllables corresponds to the use of an in situ wh-question in 85.7% of the cases. In situ wh-questions are also in the majority with respect to SVCs of 4 to 6 syllables (61.7%). Once again, some categories contain too few tokens in order to draw strong conclusions, but there is a tendency for fronted wh-phrases to associate with a longer SVC: fronted wh-questions represent two thirds of the wh-questions whose SVC contains seven syllables or more. Finally, the proportion of questions presenting a periphrastic verbal form is also larger in fronted wh-questions (36.7%) than in in situ wh-questions (20%). So far it can be concluded that the length of SVC seems to play a stronger role than the length of wh-phrase in influencing the choice of wh-structure.

Let us now turn to hypothesis 2. This hypothesis is consistent with the formal account of French wh-questions provided in Hamlaoui (2009), as in this approach in situ wh-questions are predicted to occur only when the non-wh portion is given. If the non-wh portion contains new or focused items, the fronted wh-phrase structure should be preferred. Among the criteria chosen by Coveney in order to test the informational value of the SVC, the relative informativeness of the subject is examined. Subjects are classified as either Noun Phrase or clitic pronoun. Among the 108 SVQ wh-questions taken into account by Coveney, 100 (92.6%) present a clitic pronoun and only 8 (7.4%) present a Noun Phrase, and among the 737 fronted wh-questions, 704 (95.5%) present a clitic pronoun and only 33 (4.5%) present a Noun Phrase. Wh-questions with a Noun Phrase in the subject position are thus marginal. As the proportion of such wh-question is larger among the in situ wh-questions, Coveney has to conclude that Noun Phrase subjects favor the use of SVQ structures. The author however emphasizes that in the eight in situ wh-questions, "the Noun Phrase is encoding a discoursally given, or at least identifiable, referent, as opposed to a 'brand-new' one. In other words, these NPs are not very informative" (p160). In the *Là-bas* corpus, wh-questions with an NP subject are also marginal, as there are only five occurrences of such wh-questions: four are of the in situ type and one is of the fronted type. The in situ wh-questions appear below :

(7) Context: The interviewee is a police officer. The interviewer's previous questions revolve around his professional background.
   R: Vous vos   parents faisaient quoi?
    You   your parents did   what
   'What was your parents' job?'

(8) Context: The interviewee is a construction worker. The interviewer's previous questions revolve around his employment contract.

    R: Et   votre salaire est de de combien   par mois?

      And your income is   of of how-much per month

      'How much do you earn monthly?'

(9) Context: The interviewee is a manager in mass redundancy. The interviewer's previous questions revolve around his exact function within the company Vxxxx.

    R: Et   votre rémunération chez Vxxxx était de combien   à peu près?

      And your income   at   Vxxxx was of how-much approximately

      'Approximately how much money did you earn at Vxxxx?'

(10) Context: The interviewee is a "concierge", his job consists in running errands for wealthy people. He is in a jewelry shop, looking for a 500 000 euros gift for his employer's wife. He, the interviewer and the jeweler are discussing prices. The jeweler has just explained that he never suggests items that cost less money than what his clients intend to spend because he would not want to risk offending them.

    R: Et   les sommes des ventes en moyenne atteignent quel   prix?

      And the sum   of sales   in average   reach   which price

      'How much money do people usually spend?'

The subject DP in example (10) can straightforwardly be said to be given (Tancredi 1992, Krifka 2007), as its denotation already appears in the immediate discourse context. The subject DPs in examples (8) and (9) can also be said to be given if one agrees that discussing one's job or one's employment contract renders the salary topic prominent. The subject DP in example (7) constitutes an exception as, as far as I know, the DP subject "vos parents" does not occur in the immediate discourse context.

The next criterion used for testing the informativeness of the SVC is the nature of the verb. In order to account for the data from the *Là-bas* corpus, two categories were distinguished: the first category groups together the wh-questions containing a "light" verb such as *être* ("be"), *avoir* ("have", "get") and *faire* ("do") and the second category groups together all the remaining wh-questions. Table 4 displays the results. The use of a light verb, which is considered to be less informative than a lexical verb, favors the choice of the SVQ form. This tendency is similar to the one observed by Coveney in his data from the YCLS corpus.

Table 4: *Relative frequency of fronted/in situ questions according to the verb*

Verb	In situ wh-phrase ("SVQ")		Fronted wh-phrase	
	N	%	N	%
Light verb	60	87	9	13
Lexical verb	45	53	40	47
Total	105	47.3	49	22

What about the 45 occurrences of a wh-in situ phrase with a lexical verb? Most of the verbs are given, either because they previously appear in the discourse context, such as in the discourse fragment in (11), because they are situationally given, as in (12) or because they are pragmatically inferred, as in (13).

(11) Context: Interviewee 1 (a woman in her sixties) and interviewee 2 (a man in his sixties) are discussing with the reporter about what they used to do on their way to primary school. Interviewee 1 (I1) speaks about interviewee 2.

I1: Moi ce que j'me souviens c'est que vous étiez toujours très bien habillés toujours des chemises blanches vous n'aviez pas grand-chose mais vous étiez toujours
   habillés de façon impeccable.
   `What I remember is that you were always very well dressed, in white shirts. You
    didn't have much but you were always dressed impeccably.'
R (later): Et   à cette époque-là vous vous étiez habillé comment Régine?
           And at this time   you you were dressed how   Régine
           `What about you Régine, how were you dressed at that time?'

(12) Context: the interviewee is a man who has just been served by the Saint-Eustache soup kitchen in Paris.

R: William alors expliquez moi [766ms silent pause] là   vous allez manger quoi?
   William then explain   me   now you go   eat   what
   `Tell me. What are you going to eat?'

(13) Context: the interviewee is one of the collaborators of a wealthy Francilian mayor who is used to making cash donations to some of his young citizens.

I: On lui avait demandé à diverses reprises d'arrêter ce système de dons fin de dons de
   donations plutôt de sommes d'argents à des jeunes (...)
   `We repeatedly asked him to stop this system of gifts or "donations" to some young
    citizens.'
R: Il vous a   répondu quoi à maintes reprises quand vous lui   disiez euh d'arrêter ce
   he you has replied what at several times   when you him told EUH to-stop this
   système?
   system
   `What was his reply when you repeatedly told him to stop this system?'

Finally, it is worth noting that 14.3% of the fronted wh-questions contain an adverb, whereas only 2.9% of the in situ wh-questions contain one. This tends to indicate that the presence of an adverb favors the use of the fronted wh-phrase structure. The data from the *Là-bas* corpus overall tend to confirm hypothesis 2, according to which in situ wh-phrases tend to occur with a less informative SVC than fronted wh-phrases. They consequently support the analysis of French wh-questions offered in Hamlaoui (2009). Let us now turn to some of the acoustic aspects of the wh-questions.

3.2 An acoustic investigation of *how* and *what* wh-questions

The last part of this paper concentrates on a subset of the *Là-bas* corpus. An acoustic analysis was performed on 24 of the *qu'est-ce que/quoi*-questions and 19 of the *comment*-questions. All the other questions in these two categories were not suitable for an acoustic analysis because of too much background noise and/or overlapping sounds, which are frequent phenomena in non-laboratory speech. Again, there are too few tokens in order to draw strong conclusions, but the results are consistent enough to indicate tendencies.

All the questions were extracted using PRAAT (Boersma & Weenink 2008) and each file thus created was semi-automatically aligned using the EasyAligner program (Goldman 2007) and was manually annotated within PRAAT. Using a script developed by C. Gendrot, F0 and duration of each phone were measured. We first concentrate on duration.

Following Wunderli's (1983) study of in situ wh-questions, in each wh-question, the mean duration of all the vowels preceding an in situ wh-phrase or following a fronted wh-phrase was compared to the duration of the wh-phrase's last vowel. The results are displayed in figure 1 for *comment*-questions and figure 2 for *qu'est-ce que/quoi*-questions. In both categories there is a tendency for the wh-phrase's final vowel to be longer than the mean duration of the SVC's vowels when the wh-phrase appears in situ and shorter when it is fronted. Only question 9 in the fronted *comment*-questions, question 14 in the in situ *comment*-questions, and questions 22 and 29 in the *quoi*-questions constitute exceptions to this pattern. In 10 fronted wh-questions out of 23 and in 12 in situ wh-questions out of 20, the difference between the two values is above the differential threshold (20% according to Fry 1966).

Figure 1 : Length of wh-phrase final vowel compared to mean duration of SVC vowels for "how"-questions
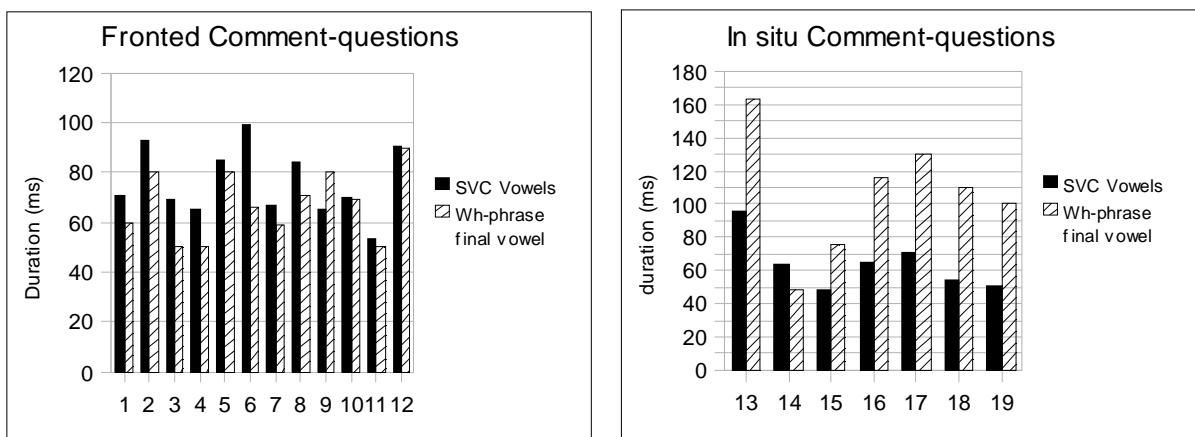
Figure 2 : Length of wh-phrase final vowel compared to mean duration of SVC vowels for "what"-questions
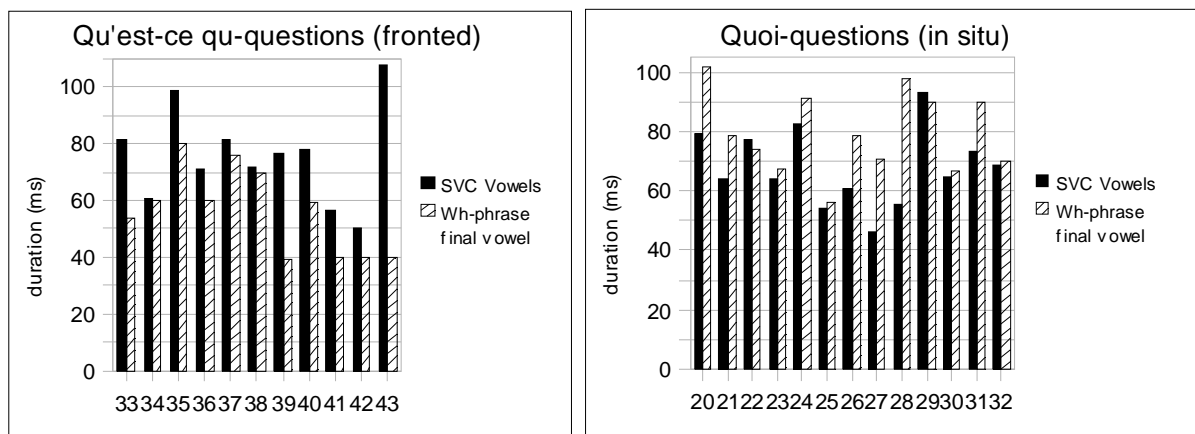
The wh-questions' articulation rate was also investigated, using an intra-corpus normalization procedure close to the one offered in Hakokari et al. (2007): each phone's duration was compared against the mean duration of all the instances of the same phone in the present subset of the corpus (a total of 1428 phones). For each wh-question, a factor (actual realization/prototypical realization) was given to the intonational phrase, the SVC and the wh-phrase based on their component phones. A factor superior to 1 is associated with an item whose actual realization is slower than its prototypical realization and a factor inferior to 1 is associated with an item whose actual realization is faster than

its prototypical realization. In order to further normalize the results, the factor associated with each wh-phrase and to each non-wh portion was divided by the factor of the intonational phrase to which it belongs. The results are displayed in figures 3 and 4. In order to facilitate the representation of the results, I substracted 1 to each obtained factor. As a consequence, a faster relative articulation rate is associated with a negative value and a slower relative articulation rate to a positive value.

Figure 3: Relative articulation rate for "how"-questions
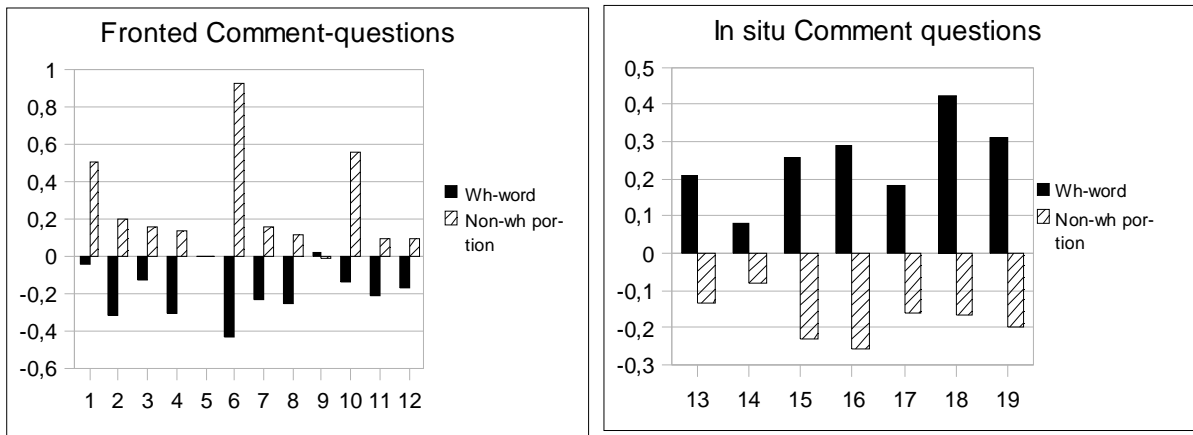
Figure 4: Relative articulation rate for "what"-questions
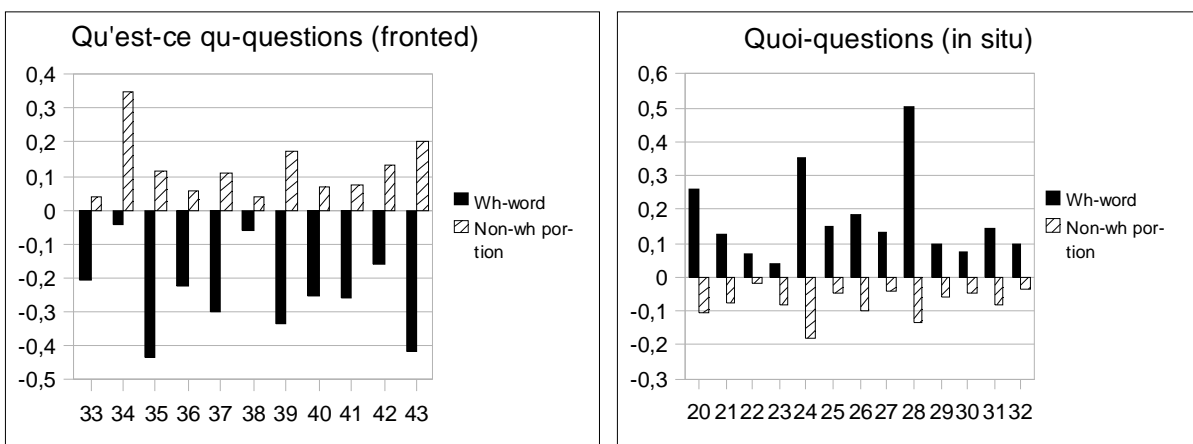
Compared to the immediately preceding items, the in situ wh-phrase is prominent from a durational perspective, as it tends to be associated with a slower relative articulation rate. The fronted wh-phrase tends to be associated with a faster articulation rate than the non-wh portion and is consequently not prominent from a durational perspective. The results represented in figures 1 to 4 tend to confirm that the fronting of the wh-phrase is *not* associated with an "inversion of the prosodic structure", namely a lengthening of the leftmost focus (the wh-phrase) and a reduction of the following items.

Before closing this paper, let now briefly turn to the wh-questions' intonation. Only the three following questions will be addressed here:

– What is the intonation associated with the interrogative particle *est-ce que* in fronted wh-questions?
– Can the wh-phrase be said to be prominent?
– Do wh-in situ questions show a rising intonation?

Within the present subset of the *Là-bas* corpus, the tendency is for the maximum pitch within

the intonation phrase containing the wh-phrase to be realized either on *est* (3/11) or on *que* (8/11). This tendency is consistent with what was observed by Wunderli (1983) and goes against Rooryck's (1994) claim that the interrogative particle *est-ce que* does not bear any intonation.

Following Goldman & Avanzi's (2007) study on the detection of prosodic prominence in spoken French, I take it that for a syllable to be considered to be prominent in its context it has to be at least 3 semi-tones higher than one of its neighboring syllables. Each wh-phrase's vowel was compared to the two preceding and the two following vowels (whenever possible). The investigated wh-questions show a great variety of patterns, to such a point that no clear pattern seems to emerge. In the *qu'est-ce que*-type of wh-questions, there are five cases in which no syllable can be considered to be prominent. There is only one out of four cases in which a wh-phrase's vowel can be considered to be prominent with respect to a preceding vowel and six cases out of eleven in which a wh-phrase's vowel can be considered to be prominent with respect to one of the two following vowels. Among the *quoi*-type of wh-questions (N=12), there are six cases in which no syllable can be considered prominent and only three cases in which the wh-phrase's vowel can be considered to be prominent with respect to a preceding vowel. In four cases out of five, the wh-phrase's vowel is prominent with respect to one of the following vowels. As for the *comment*-type of questions, there are three fronted-*comment* questions out of twelve in which no syllable can be considered to be prominent. There are seven cases in which a wh-phrase's vowel is prominent with repect to the following vowels and four cases out of six in which one of the wh-phrase's vowels is prominent with respect to the preceding vowels. Finally, among the in situ *comment*-questions (N=7), there are five questions with no prominent syllable and two questions in which a wh-phrase's vowel is prominent with respect to the following vowels. To sum-up, in 44% of the investigated wh-questions, no syllable could be said to be prominent, 56% of the fronted wh-questions were questions in which one of the wh-phrase's syllables could be considered to be prominent with respect to the following syllables and 15% of the in situ wh-questions were questions in which one of the wh-phrase's syllables could be said to be prominent with respect to the preceding syllables.

According to Cheng & Rooryck (2000) wh-in situ questions are necessarily associated with a rising intonation. Within the *Là-bas* corpus, in situ wh-questions are not necessarily associated with a rising intonation: only seven out of nineteen questions show this pattern.

4. Summary and concluding remarks

I have reported the results of the study of a corpus of spontaneously produced constituent questions. These questions were extracted from the interviews led between 2005 and 2009 by a female reporter who consistently uses (non-radiophonic) demotic French. The *Là-bas* corpus is distinct from the corpora investigated in previous studies in that it exhibits a majority of wh-in situ structures. Contrary to what was observed by Coveney (1995), the present corpus does not allow us to conclude that the End-Weight principle is a strong factor in favoring the use of the wh-in situ structure, as the wh-phrases occurring in situ are frequently monosyllabic. In situ wh-phrases are however frequently associated with a short non-wh portion, characterized by its low informational value. This tends to confirm some of the observations made by Coveney based on data from the York Child Language Survey corpus as well as Hamlaoui's (2009) formal analysis of French wh-questions. The acoustic investigation of a subset of the data confirmed Wunderli's (1983) observation that the interrogative particle *est-ce que* tends to be associated with the maximum pitch within the intonation phrase containing the wh-phrase. No clear pattern however emerged in terms of pitch prominence. From a durational perspective, the results showed rather clear tendencies: whereas the fronted wh-phrase's last vowel tends to be shorter than the mean duration of the following vowels, the in situ wh-phrase's last vowel tends to be longer than the mean duration of the preceding vowels, and whereas the

fronted wh-phrase's articulation rate tends to be faster than the non-wh portion's articulation rate, the in situ wh-phrase's articulation rate tends to be slower than the non-wh portion's articulation rate. In spite of its limited number of tokens, this study nonetheless provides us with interesting tendencies, which tend to invalidate some of the previous claims and tend to confirm some others.

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The Acquisition of Null Objects in Chinese: Effect of Proficiency

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Abstract

Embedded null objects in Chinese can be interpreted either as variables or pro (Huang, 1984; Xu, 1986), whereas null objects in English can only be interpreted as variables (Rizzi, 1986; Cummins & Roberge, 2004). Hsieh (2009) identified two types of matrix verbs – say-type and assume-type, and discovered that embedded null objects tend to be interpreted as variables with say-type matrix verbs, either as pro or variables with assume-type matrix verbs. This paper brings quantitative data to examine how L1-English-speaking learners of Chinese interpret embedded null objects in Chinese with say-type and assume-type matrix verbs. A reference resolution task was conducted, whereby 3 proficiency groups of L1-English-speaking learners judged sentences in which embedded null objects were either with say-type or with assume-type verbs. The results revealed that all the 3 proficiency groups had a preference for interpreting embedded null objects as pro and variables with both say-type and assume-type matrix verbs. Nevertheless, the advanced group did show the say-type and assume-type distinction. The findings suggest that (i) the semantic use of null objects with assume-type verbs needs to be learned, and (ii) the L2 learners acquire the subtle grammar that does not exist in their L1 with proficiency.

1 Introduction

Chinese is a language that displays the freedom for the use of null arguments in its grammar. It allows not only a subject or an object to be dropped, but also allows both of them to be dropped at the same time without leaving any grammatical ambiguity, assuming that the context unambiguously provides antecedents (Huang, 1984, 1987, 1989; Xu, 1986; Li, 1990; He, 1996; Huang Y., 2000). In English, however, pronouns cannot be dropped from grammatical sentences generally. Consider the example below cited from Huang (1984: 533).

(1)   A: Zhangsan kanjian Lisi le ma?
            Zhangsan see   Lisi Asp Q
         "Did Zhangsan see Lisi?"

     B: (a) null subject
            e kanjian Lisi le.
                 see   Lisi Asp
         "(He) saw Lisi."

        (b) null object
            ta kanjian *e* le.
            he see   Asp
         "He saw (him)."

(c) null subject and null object

    e kanjian *e* le

        see   Asp

     "(He) saw (him)."

As can be seen, Chinese not only can drop the subject, e.g., (1Ba), or the object, e.g., (1Bb), but also can drop both of them at the same time, e.g., (1Bc). Looking at the translation counterparts, however, English allows none of the corresponding positions to be dropped.

In spite of the free use of null arguments in Chinese, the interpretation of embedded null objects in Chinese is in debate (Huang, 1984, 1987, 1989; Xu, 1986). Also, even though English does not allow arguments to be dropped, English does have null objects (Rizzi, 1986, 1997; Goldberg, 2001; Cummins & Roberge, 2004).

2   Previous Research

2.1   English

Cummins & Roberge (2004) indicate three types of null objects in English that are associated with the definiteness of overt topics. In the first, it is bound type: a definite null object coreferential with an overt topic. A null object in this type is bound by an overt topic which is definite, and thus, this bound null object is definite. Cummins & Roberge (2004) interpret this type of null object as bound variables or null constants. Consider the example below cited from Cummins & Roberge (2004:133).

(2)   The book$_i$, I hated e_i.

In (2), the NP *the book* is moved from the object position of the verb *hate* to the topic position, leaving a trace behind. Accordingly, this null object is a null constant licensed by the anaphoric operator, i.e., the overt topic, *the book*, and thus, it is interpreted as a variable.

In the second, it is discourse-linked type: a definite null object coreferential with a referent mentioned in the discourse. A null object in this type refers to an entity that is mentioned in the discourse; as a result, this discourse-linked null object is definite. Cummins & Roberge (2004) construe this type of null object as null pronominals, as shown below cited from Cummins & Roberge (2004:133).

(3)   A: What do you think of my cake$_i$?

       B: *I like e_i.

Cummins & Roberge (2004) indicate that in English when a referential interpretation is forced, the occurrence of null objects is not possible. The null object in (3) is coreferential with *cake* mentioned in the discourse; that is, the interpretation of this null object is forced. As a consequence, this type of null object is not available in English.

In the third, it is internally-licensed type: an indefinite null object coreferential with an overt topic. A null object in this type is co-indexed with an overt topic which is indefinite or generic; therefore, this internally-licensed null object is indefinite. Cummins & Roberge (2004) describe this type of null object as null cognate objects, deriving from the fact that an overt cognate object, if unmodified, provides no semantic information beyond that contained in the verb itself. This account is expected to operate in the same way as null cognate objects. It suggests that a sentence with a null cognate

object mainly focuses on the action or on the verb. Consider the examples below cited from Cummins & Roberge (2004:133).

(4)   Wine$_i$, I bought e$_i$.

Sentence (4) operates in the same manner as (2): the NP *wine* is moved from the object position of the verb *bought* to the topic position. Accordingly, this null object (i.e., the trace) is licensed by the overt topic, *wine*, and is interpreted as a variable. The difference between (2) and (4) is that the former is coreferential with a definite antecedent, while the latter is linked to an indefinite/generic antecedent.

Overall, we can conclude that in English a null object is coreferential with an overt topic (i.e., A'-bound), either definite or indefinite, and is interpreted as a variable.

2.2   Chinese

2.2.1   Huang (1984)

Huang (1984) claims that there is a subject-object asymmetry in Chinese with respect to the distribution of null pronominals: only a null subject but not a null object in an embedded clause can refer to the matrix subject. To be more specific, embedded null subjects can be coindexed with matrix subjects and be interpreted as *pro,* whereas embedded null objects can not. Consider the examples below, cited from Huang (1984:537).

(5)   a. Embedded null subject
         Zhangsan$_i$ shuo [e$_i$ bu renshi Lisi].
         Zhangsan say   not know Lisi
         "Zhangsan$_i$ said that (he$_i$) did not know Lisi."

        b. Embedded null object
         Zhangsan$_i$ shuo [Lisi   bu   renshi e$_{*i}$]
         Zhangsan say Lisi not   know
         "Zhangsan$_i$ said that Lisi did not know (him$_{*i}$)."

The embedded null subject in (5a) can take the matrix subject *Zhangsan* as its antecedent, whereas the embedded null object in (5b) cannot. Huang (1984:552) proposes the 'Generalized Control Rule' (GCR) which states that 'an empty pronominal (i.e., PRO or *pro*) is coreferential with the closest nominal element and is controlled in its control domain.' The matrix subject, which is outside of the governing category, is the closest potential NP to the embedded null subject and is able to recover the content of it. Therefore, the embedded null subject in (5a) can be co-indexed with the matrix subject and be interpreted as a pronominal (i.e., *pro*). In (5b), by contrast, the matrix subject *Zhangsan* is not the closest nominal element to the embedded null object; thus, the embedded null object cannot refer to the matrix subject and be interpreted as *pro*.

Huang (1984) adds that both an embedded null subject and an embedded null object can refer to a (zero) topic and be interpreted as a variable. Huang (1984) asserts that a null argument is left because of the movement to the topic position and where the topic position is null is because of the 'Topic-NP Deletion.' Tsao (1977) claims that Chinese-type languages have a rule called 'Topic-NP Deletion,' which operates across sentences to delete the topic of a sentence having an identical referent in the preceding sentence. Note that the null argument is topicalized first before the topic is

deleted from the topic position. Accordingly, sentences in (5) can be interpreted as (6) below.

(6)   a. Embedded null subject
          Discourse Topic$_i$ …[topic $\underline{e}_i$], [Zhangsan shuo [e_i bu renshi Lisi]].
                             Zhangsan say   not know Lisi
             "Zhangsan said that (he) did not know Lisi."

        b. Embedded null object
          Discourse Topic$_i$ …[topic $\underline{e}_i$], [Zhangsan shuo [Lisi bu renshi $\underline{e}_i$]].
                             Zhangsan say Lisi not know
             "Zhangsan said that Lisi did not know (him)."

What (6) shows is that the embedded null subject in (6a) and the embedded null object in (6b) are moved from their initial position to the topic position where the topic is deleted through the process of topic NP deletion. This suggests that the embedded null subject and the embedded null object are coreferential with their null topics and interpreted as variables.

To summarize, in terms of Huang (1984), an embedded null subject in Chinese can be interpreted either as *pro* if it is A-bound by a matrix subject, or as a variable if it is A'-bound by a (zero) topic. An embedded null object, on the other hand, can only be A'-bound by a (zero) topic and be interpreted as a variable. This phenomenon is known as the subject-object asymmetry and is held by Huang (1984, 1989) to lend support for the claim that *pro* is only available to subject position rather than to object position except in a language which has a rich verb-object agreement marking system. This assumption, however, has been challenged by Xu (1986).

2.2.2   Xu (1986)

Contrary to Huang, Xu (1986) argues that embedded null objects in Chinese can also be co-indexed with matrix subjects and be interpreted as *pro*. Xu (1986) states that without additional context, it is true that native speakers of Chinese would not refer embedded null objects to matrix subjects in the examples Huang (1984) illustrated. Xu (1986), however, contends that there are many other sentences capable of allowing embedded null objects coreferential with matrix subjects, unless context has led the readers or hearers to construe otherwise. We have the example below, cited from Xu (1986:78).

(7)   haizi$_i$ yiwei [mama   yao   zeguai e_i le]
        child assume mother will reprimand   Asp
         "The child assumes his mother is going to reprimand (him)."

In (7), it is beyond dispute that native speakers of Chinese would take the matrix subject *haizi* 'child' as the controller of the embedded null object. Accordingly, the embedded null object in (7) is coreferential with the matrix subject, and is interpreted as *pro*.

Xu (1986) asserts that the so-called subject-object asymmetry is more apparent than real, because grammar is sometimes dominated by semantic and pragmatic factors. Indeed, the issue with respect to the influence of semantic and pragmatic factors in the interpretation of a sentence has been discussed (Comrie 1988, LaPolla 1993). Xu (1986) claims that without considering semantic and pragmatic factors, the syntactic constraints should not be the first choice of reading a sentence. It suggests that the interpretation of embedded null objects in Chinese should consider the complex interplay of semantic and pragmatic factors rather than rely on syntactic functions only.

2.2.3 Hsieh (2009)

Despite highlighting the relevance and importance of semantic and pragmatic factors, Xu (1986) did not give any concrete indication of what exactly those are that lead to the different interpretations of embedded null objects in Chinese. In an attempt to resolve the question, examining the sentences illustrated in Huang (1984) and Xu (1986), Hsieh (2009a) discovered that matrix verbs play a key role in determining the different interpretations of embedded null objects in Chinese. Two types of matrix verb were identified, namely, *say*-type and *assume*-type. Importantly, the two sets of verbs can be differentiated in terms of their semantic and syntactic differences. The distinction will not be discussed here. See Hsieh (2009a, 2009b) for details.

Hsieh (2009a) carried out a study investigating the interpretation of embedded null objects in Chinese with *say*-type and *assume*-type matrix verbs by native speakers of Chinese. Significantly, Hsieh (2009a) found that embedded null objects in Chinese tended to be interpreted as variables with *say*-type matrix verbs, either as *pro* or as variables with *assume*-type matrix verbs. *Assume*-type matrix verbs, specifically, are subject to semantic constraint, and the interpretation of embedded null objects with this type of matrix verbs needs to be learned. Consulting with Chinese teachers, the distinction between *say*-type and *assume*-type is not taught in the classroom. Accordingly, it may be difficult for L2 learners of Chinese to recognize the difference between *say*-type and *assume*-type verbs from the input if they have not explicitly been told about the distinction.

3 The Study

In terms of what we have seen above – (i) the syntactic differences between English and Chinese in empty category distribution, and (ii) the findings of Hsieh (2009a) with respect to the interpretation of embedded null objects in Chinese, this study aims to bring quantitative data to examine how L1-English-speaking learners of Chinese interpret embedded null objects in Chinese with *say*-type and *assume*-type matrix verbs. In order to determine the extent of L1 transfer in L2 acquisition, in this study, the Full Transfer model (Schwartz & Sprouse 1994, 1996) is adopted. Schwartz & Sprouse (1994, 1996) propose Full Transfer as follows: the entire L1 grammar (all abstract properties except specific lexical items) composes the L2 initial state; in other words, L2 learners use the grammar that they already have (i.e., the steady-state grammar of their first language) to analyze the L2 input at the initial state. Furthermore, changes of the initial grammar can happen; that is, L2 learners will not stay at the stage based on their L1 grammar in their whole L2 learning process. When the L1 grammar is unable to reconcile properties of the L2 input, L2 learners will restructure their current L1-based interlanguage grammar in response to the L2 input.

This section is organized as follows: section 3.1 specifies the hypothesis on which this study is based; section 3.2 presents the test items; section 3.3 describes the participants; finally, section 3.4 details the procedure.

3.1 Hypothesis

Wang et al (1992) discovered that Chinese-speaking children did not show the kind of long-distance use of null arguments coreferential with discourse topics that Chinese-speaking adults did. Wang et al (1992) attribute this to the fact that the control of semantic and pragmatic use of null arguments needs to be learned by Chinese-speaking children. Based on this account, it is presumed that the semantic use of null arguments in Chinese, especially with *assume*-type matrix verbs, needs to be

learned by the L2 participants in the present study as well.[1] In other words, the L2 participants are predicted to be unable to distinguish between *say*-type and *assume*-type matrix verbs with respect to null object interpretation. Hypothesis for the present study is made under this presupposition, as shown below.

Hypothesis: Assuming Full L1 Transfer, and that the L2 participants' interlanguage grammar is at the initial state with respect to null object interpretation, the L2 participants will interpret embedded null objects as variables with both *say*-type and *assume*-type matrix verbs.

3.2   Test Items

A reference resolution task was conducted, whereby participants judged sentences in which embedded null objects were either with *say*-type or with *assume*-type matrix verbs. Two test types are examined:

(i)   *Say*EC: Sentences with a main clause *say*-type verb and an embedded null object.

(ii)   *Assume*EC: Sentences with a man clause *assume*-type verb and an embedded null object.

Participants were asked to indicate whether the embedded null object refers to (A) the matrix subject, (B) someone else, or (C) either. An example of a test item is given below.

(8)   a. *Say*EC
          Adam <u>shuo</u> Andy wen *e*   le
          Adam say   Andy ask   Asp
          'Adam said Andy asked (him).'

          Andy wen shei?
          Andy ask   who
          Whom did Andy ask?

      (A) Adam   (B) someone else   (C) either

       b. *Assume*EC
          Mandy <u>yiwei</u> Lea buhui daying *e*
          Mandy assume Lea will not promise
          'Mandy assumed Lea will not promise (her).'
          Lea buhui daying   shei?
          Lea will not promise   who
          Whom will not Lea promise?

      (A) Mandy   (B) someone else   (C) either

---

[1] Note that this is not assuming that adult L2 learners are like children acquiring their L1. Here it merely suggests that the L2 participants in the present study have not acquired the semantic use of null arguments in Chinese, especially with *assume*-type matrix verbs.

3.3 Participants

24 L1-English-speaking learners of Chinese participated in the experiment. None of the L2 participants was bilingual from birth or early childhood. Among them, 15 participants were enrolled on BA degree courses in Chinese at U.K. universities, 6 participants were enrolled in Chinese courses at Taiwan universities, 1 participant was enrolled on MA degree courses in Chinese at a Taiwan university, 1 participant worked in Britain, and 1 participant worked in Taiwan. All of the L2 participants had learned Chinese for over a year and most of them had experience of living and studying in a Chinese-speaking country. Furthermore, the L2 participants were divided into 3 subgroups in terms of their proficiency: preliminary, intermediate, and advanced. Meanwhile, 8 native speakers of Chinese also participated in the study as a control group.

3.4 Procedure

The L2 participants, before doing the questionnaire, were asked to take the Chinese proficiency test. The material of the proficiency test was from the Chinese Language Testing Centre in the National Taiwan Normal University. The L2 participants could take their time to do the proficiency test, but were not allowed to use any dictionary, text books or to have any other kind of help. For the actual test, it was conducted in the same way for the L1 and the L2 participants. Participants were asked to read the instructions (that were written in their native language) carefully with the investigator: (i) a sentence is followed by a question in each test item, and (ii) please circle ONE answer that they think most appropriate for the question. Moreover, participants were not allowed to return to the previous test items to change answers, or to attempt to the following test items. Participants were also reminded not to worry about the errors relating to spelling and punctuation. The test was conducted individually with participants or in a group. Basically, there was no time limitation for participants to complete the questionnaire. Generally, it took about 20 minutes to finish.

4 Results

This section reports the results. An ANOVA (4 group type x 2 verb type x 3 response type) was run on the data to find out about the main effects. Then paired samples *t*-tests were run to identify the source of any significant effects revealed by the ANOVA. Table 1 below presents the raw numbers and percentages of responses in null object interpretation by participants.

Table 1: Results of Null Object Interpretation by Participants

Group	*Say*EC			*Assume*EC		
	A	B	C	A	B	C
Preliminary (n=8)	4/32 (13%)	11/32 (34%)	17/32 (53%)	5/32 (16%)	11/32 (34%)	16/32 (50%)
Intermediate (n=8)	4/32 (12%)	6/32 (19%)	22/32 (69%)	5/32 (16%)	3/32 (9%)	24/32 (75%)
Advanced (n=8)	2/32 (6%)	15/32 (47%)	15/32 (47%)	13/32 (41%)	2/32 (6%)	17/32 (53%)
Native (n=8)	6/32 (19%)	20/32 (62%)	6/32 (19%)	15/32 (47%)	13/32 (41%)	4/32 (12%)

Note:
- Response A: coreference with matrix subjects
- Response B: coreference with someone else, i.e., sentence-external referents
- Response C: coreference with matrix subjects and sentence-external referents (subject/topic)

A repeated measure ANOVA (group type x verb type x response type) run on the whole data set yields a number of significant effects. The main effect of response type was significant ($F_{(2,56)}$=7.518, p=0.001). Interactions of the variables were also significant: group type x response type, ($F_{(6,56)}$=4.722, p=0.001); group type x verb type x response type, ($F_{(6,56)}$=3.066, p=0.012).

Let us turn now to look at the results in terms of each group. For the native control group, Table 1 showed that 62% of the answers indicated response B in *Say*EC, while answers were split between response A and response B in *Assume*EC. Paired samples *t*-tests were run for comparing responses A and B, and responses B and C in *Say*EC, and responses A and B in *Assume*EC. Results revealed that the differences were significant between responses A and B (t=10.693, df=7, p<0.00025, one-tailed) and responses B and C (t=3.564, df=7, p=0.0045, one-tailed) in *Say*EC; while it was not significant between responses A and B (t=0.424, df=7, p=0.3425, one-tailed) in *Assume*EC. It suggests that the L1 group interpreted embedded null objects differently between *Say*EC and *Assume*EC: sentence-external referent (variable interpretation) was preferred with *say*-type matrix verbs, whereas either matrix subject (*pro* interpretation) or sentence-external referent (variable interpretation) was preferred with *assume*-type matrix verbs. This result, importantly, is compatible with Hsieh (2009a).

For the L2 groups, Table 1 showed that all the 3 proficiency groups, especially the intermediate group, displayed a preference for response C in both *Say*EC and *Assume*EC. The intermediate group had 69% of the answers indicating response C in *Say*EC and 75% in *Assume*EC. Paired samples *t*-tests were run for comparing responses A and C, and responses B and C in both *Say*EC and *Assume*EC. Results revealed that the differences were all significant: responses A and C (t=4.965, df=7, p=0.001, one-tailed) and responses B and C (t=3.742, df=7, p=0.0035, one-tailed) in *Say*EC; responses A and C (t=3.987, df=7, p=0.0025, one-tailed) and responses B and C (t=3.192, df=7, p=0.0075, one-tailed) in *Assume*EC. For the preliminary group, besides response C (53% of the answers in *Say*EC and 50% in *Assume*EC), the participants also selected response B to a certain degree in both *Say*EC (with 34% of the answers) and *Assume*EC (with 34% of the answers). Paired samples *t*-tests were run for comparing responses B and C in both *Say*EC and *Assume*EC, and the results showed that the differences were not significant: responses B and C in *Say*EC (t=0.942, df=7, p=0.189, one-tailed); responses B and C in *Assume*EC (t=0.828, df=7, p=0.2175, one-tailed). As to the advanced group, besides response C (47% of the answers in *Say*EC and 53% in *Assume*EC), the participants also showed a favor of response B in *Say*EC (with 47% of the answers) and response A in *Assume*EC (with 41% of the answers). A paired samples *t*-test was run for comparing responses A and C in *Assume*EC, and the result revealed that the difference was not significant (t=0.441, df=7, p=0.3365, one-tailed).[2]

The results appear to suggest that there is a minor difference between the 3 proficiency groups in the interpretation of embedded null objects in *Say*EC and *Assume*EC. For the preliminary group, besides coreference with subject/topic (i.e., response C), coreference with sentence-external referent (i.e., response B) was also preferred in both *Say*EC and *Assume*EC. For the intermediate group, coreference with subject/topic (i.e., response C) was preferred in both *Say*EC and *Assume*EC. For the advanced group, besides coreference with subject/topic (i.e., response C), coreference with sentence-external referent (i.e., response B) was also preferred in *Say*EC, while coreference with matrix

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[2] The percentages of Response B and Response C in *Say*EC were both 47%, and the difference was clearly not significant; thus, its *t*-test was not run.

subject (i.e., response A) in *Assume*EC.

5   Discussion

In section 3.1, it was presumed that the L2 participants were unable to distinguish between *say*-type and *assume*-type matrix verbs with respect to null object interpretation. Therefore, hypothesis predicts that assuming Full L1 Transfer, and that the L2 participants' interlanguage grammar is at the initial state with respect to null object interpretation, the L2 participants will interpret embedded null objects as variables with both *say*-type and *assume*-type matrix verbs. The results above revealed that coreference with subject/topic (i.e., response C) was preferred by all 3 proficiency groups, especially the intermediate group, in both *Say*EC and *Assume*EC. As response C contains the acceptability of response A and response B. It suggests that the L2 participants accepted the matrix subject as well as a sentence-external referent as the antecedent of embedded null objects in both *Say*EC and *Assume*EC. That is, the L2 participants tended to interpret embedded null objects as *pro*/variable with both *say*-type and *assume*-type matrix verbs. This means that the L2 participants had knowledge of *pro* and variable interpretation in embedded null objects in Chinese. In other words, the L2 participants were no longer at the initial state of L2 acquisition, and had restructured their L1-based interlanguage grammar in response to the L2 input. Accordingly, hypothesis is not supported by the data.

Moreover, as indicated above, besides response C, the preliminary group also selected response B (i.e., sentence-external referent) to a certain degree in both *Say*EC and *Assume*EC, while the advanced group also selected response B (i.e., sentence-external referent) in *Say*EC and response A (i.e., matrix subject) in *Assume*EC. For the preliminary group, the selection of response B (i.e., sentence-external referent, variable interpretation) may be due to L1 influence, since null objects in English can only be interpreted as variables (Rizzi, 1986, 1997; Cummins & Roberge, 2004). For the advanced group, it is surprising that they selected response B (i.e., sentence-external referent, variable interpretation) in *Say*EC, but response A (i.e., matrix subject, *pro* interpretation) in *Assume*EC. It appears that the advanced group, as the L1 group, showed the distinction between *say*-type and *assume*-type matrix verbs in null object interpretation.

Overall, the results showed that the preliminary and intermediate groups were unable to distinguish between *say*-type and *assume*-type matrix verbs with respect to null object interpretation, as presupposed, while the advanced group displayed the distinction. This suggests that, with proficiency growth, the L2 participants acquired the semantic use of null objects in Chinese with *assume*-type matrix verbs (relevant to the correct use of *pro* interpretation, a grammar that does not exist in their L1).

6   Conclusion

This study investigates the interpretation of embedded null objects in Chinese with *say*-type and *assume*-type matrix verbs by L1-English-speaking learners of Chinese. The results showed that all 3 proficiency groups, especially the intermediate group, had a preference for coreference with subject/topic (*pro*/variable interpretation) in the interpretation of embedded null objects with both *say*-type and *assume*-type matrix verbs. Having knowledge of *pro* interpretation suggests that the L2 participants had moved beyond the initial state of L2 acquisition. Furthermore, the results also revealed that the preliminary group had L1 influence in null object interpretation, while the advanced group showed the *say*-type and *assume*-type distinction. This finding can be attributed to the effect of proficiency.

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Conventionalization and Literality:
Evidence from conventionalized ironic expressions[1]

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Abstract
The aim of this paper is to examine the characteristics of conventionalized nonliteral expressions (ironies in particular), in order to accommodate these into a theory of literal meaning. The main hypothesis is that conventionalized nonliteral expressions are much closer to literal rather than nonliteral language, which is something that bears direct repercussions on the definition of literality, on the one hand, and on the method of approaching nonliteral phenomena on the other. At first, the notion of conventionalization is defined through comparison and contrast with notions such as salience (Giora 2003) and standardization (Bach 1995). Subsequently, I focus on data from conventionalized ironies (in Greek and English), on which some tests for literality are applied. The concluding remarks underline the importance of the recognition and treatment of conventionalized and non conventionalized ironies as two distinct phenomena.

1 Introduction

One very crucial question to be asked, regarding the interface between semantics and pragmatics, concerns the definition of literality (often related to the notions of the *said* or the *explicated*). Answering the question of "what is literal?" is considered a key for the detection of the boundaries between the two levels (see Recanati 2004: 68-82).

The notion of literality can be approached in – at least – two ways: on the one hand, there are some shared and generally well defined folk-theoretic intuitions, which provide some clear-cut distinctions between the literal and the nonliteral use of language (i.e. language is expected to be used either "literally" or "figuratively", the latter being attributed to any linguistic trope, such as metaphor, metonymy, irony etc.). On the other hand, there are linguistic theories which are trying to detect "literality" as the product of semantics (or of the interface between semantics and pragmatics). Although, here, the discussed notion is approached from the point of view of linguistic theory, the very fact that "folk" intuitions and theoretic approaches do not converge is not to be left unnoticed, as it suggests some inherent discrepancies in the notion of literality (the nontrivial importance of the folk-theoretic view is also pointed out by Recanati 2004:81).

2 Conventionalization: definition and functions

2.1 Conventionalization, standardization and salience

First of all, it is important to refine the definition of the notion of conventionalization, by comparing it with affined notions, such as *salience* and *standardization*. The aim of this comparison is to highlight different possible degrees of conventionalization, which determine the encoding of expressions in the mental lexicon.

Standardization is a term that mainly applies to indirect speech acts. When a specific expression or speech act is normally employed in order to convey a specific indirect speech act, then its use is standardized. For example, expressions of politeness, such as *"why don't you sit down?",* are consistently used and recognised as such, without being treated as actual questions. A standardized use is not conventionalized and certainly not a part of the encoded meaning, given that the inferential stages needed for the extraction of the final meaning are still transparent.
As Kent Bach notes,

"[C]onventionalization entails that an utterance of a certain form of words would not have the force it has but for the existence of a general mutual belief that it counts as such. Standardization entails no such thing. It merely short circuits the steps of the required inference pattern, both as intended by the speaker and as carried through by the audience." (Bach 1995: 683)

On the other hand, salience, as defined by Giora, is a graded notion, which depends on *prototypicality*, *experiential frequency*, *conventionality* and *familiarity* (Giora 2003: 75-6, 13-38). A salient meaning, which is the most prominent of a word's various possible meanings (consider, for example, cases of polysemy such as "bank$_1$- river side, bank$_2$- financial establishment) must be stored/coded in the mental lexicon. This usually happens through a process called *consolidation*, while there is always the chance that the salient meaning of a word changes through time. This consolidation process mentioned by Giora is not far from the notion of conventionalization; although salience is a synchronic term, conventionalization may also play a role in diachrony.

2.2 Conventionalization and semantic change

As Traugott and Dasher (2002) describe, two of the most common ways of semantic change is metaphorisation and metonymisation. These processes have to do with conventionalization of previously nonce/novel nonliteral meanings.

As far as the phenomenon of verbal irony is concerned, it is worth pointing out the existence of processes of semantic change through conventionalization of ironic expressions. This is something that has not been particularly stressed in the literature. Traugott and Dasher (2002) only restrict their description in metaphorisation and metonymisation. However, there is also evidence of conventionalized ironic expressions which have turned into literal meaning. An example from Greek is the word "*kalopeδo*" which is a compound of the words "*kalo* = good" and "*peδi* = child": this had been used ironically to denote a rather suspicious/deceptive person, but it seems that the ironic meaning gradually gained ground and it is the only meaning the word has nowadays. Likewise, the English idiom "*fat chance*" should be traced back to an original ironic use (Seto 1998; for further examples from Spanish see Ruiz Gurillo 2009).

Of course, among the mentioned notions, we should imagine a continuum, with degrees of conventionalization and formulaic uses of language which vary from standardized and salient uses to highly conventionalized and finally lexicalized ones (result of semantic change).

3 Conventionalization and the problem of literality

Since not even the very existence of literality can be recognized and agreed on by all theoretical approaches (e.g. Gibbs 1989, Sperber and Wilson 1995) we have to begin by seeking what would count as a necessary condition for the existence of literal meaning.

In a very abstract sense, and disregarding, for the moment, the different possible levels where literality can be manifested, it can be argued that a precondition for literality is stability: there must be something stable (encoded, acquired, generally agreed, produced by specific rules etc.) in meaning, so that any occurrence reproducing this stable component without deviations could be considered as literal.

As far as conventionality is concerned, it is inherently linked to the notion of *stability* (or stabilization). With language itself, and word meaning in particular, being a convention by nature, it is easy to observe that whatever is conventionalized forms part of a system. Being part of a system implies being used in a stable, consistent way, hence deserving the characteristic of literal.

Taking one step further, and given the proposed precondition of stability, we need to determine a number of *conditions*, which could be considered as necessary for the existence of literality and could function as tests for detecting it.

(a) Context dependence (or context sensitivity). When witnessing linguistic communication we often come across incongruities between the contextual and the encoded or salient meaning of an expression. Apart from the obvious cases of nonliteral use, such as metaphors, there are cases in which the context is mainly responsible for determining the meaning of a word or expression. Let us consider, for instance, cases of vagueness and underdeterminacy: verbs such as "*cut*" or "*open*", adjectives such as "*easy*" or "*strong*" have a wide range of possible meanings, which are relative to the specific context of use (Carston 2002: 21-30). On the other hand, there are words and expressions with clearly determined meaning, such as single referent words ("the sun"), which are minimally or not at all influenced by the context. It is, therefore, justifiable to suggest that the literal use of context (in)dependent meanings is the most easily detectable case of literality.

(b) Another very important notion when testing for literality is the Gricean notion of *cancellability* (Grice 1975:57-58). Being considered as one of the main characteristics of implicatures (i.e. nonliteral meaning at the propositional level – see Recanati 2004 for distinctions), what the ability of being cancelled normally implies for a meaning is that it is not eligible to be counted as literal. One problem that occurs if this criterion is applied at the lexical level is that, as Grice also pointed out, the meaning of a "loose use" of a word can be cancelled, without it being necessarily nonliteral (Grice 1989:44). For example, a phrase such as *"France is hexagonal but it is not really hexagonal"* is perfectly acceptable (it would be difficult to claim that because France is not a perfect geometrical hexagon, its shape being characterized as a hexagon is a nonliteral use of the term). Nevertheless, because cancellability is a clearly defined and easily testable feature, it still is a highly functional test for literality, at least at the sentence level.

Although both context (in)dependence and cancellability provide a good ground for exposing the clear-cut distinctions between literal and nonliteral, their testing ability is proved weaker when applied to borderline cases of context-sensitive or loosely used meanings. This is why we need to introduce at least one more criterion which would be able to "filter" and categorize (as literal or nonliteral) those uncertain cases.

(c) Conventionality. It can be reasonably argued, at this point, that the notion of conventionality which, of course, is mirrored by the combination of stability and frequency of use, is able to successfully complete this set of criteria. Stability in both form and function and –most importantly - in the relation between them is a decisive factor for literality. Stability in form is almost obvious for mono-lexical expressions but what happens with multiple word expressions? A multiple word expression is lexicalized when it is not possible for its syntactic structure to be altered and when no other word can intervene between its components. Moreover, the function of an expression is stable when it is consistently used to denote the same meaning or –better said in

terms of language use – when it is used to perform the same speech act, as it happens with conventionalized ironies.

Going back to the problematic case of context-dependent meanings, we notice that the conventionality of use of a word for a set of different meanings establishes all these meanings as literal: although the use of "*cut*" in "*cut the cake*", "*cut the grass*", "*cut a picture*" has a different truth-conditional meaning in each case, it can be recognised as literal in all of them, thanks to the criterion of conventionality. In conclusion, conventionality can be seen as a decisive criterion for literality, when considered in tandem with context dependence and cancellability.

4 Applying literality criteria to conventionalized and non conventionalized ironies

4.1 Definition of irony and basic distinctions

Setting aside any traditional/literary definitions given to irony ("a mode of speech in which the meaning is contrary to the words" - Dr.Johnson, as reproduced in Wilson and Sperber 1992:296) there are numerous accounts in the field of linguistics, which differ in that each chooses a different characteristic as being the central, defining characteristic of irony. The most prominent of these theories treat irony as negation (Grice 1975/ Giora 1995), echoic mention (Wilson and Sperber 1992), pretence (Clark and Gerrig 1984) and inappropriateness (Attardo 2000). The evident disadvantage of these linguistic theories is that each refers to a different set of ironic examples, capturing a particular ironic device and not the phenomenon in its entirety. Therefore, when trying to define our object of study we have to overcome the obstacles of "conflicting" theories and try to establish the necessary conditions for the existence of the phenomenon.

In order to reach a definition for the phenomenon we first need to examine the circumstances under which it arises. This requires viewing irony not only in its verbal instantiation, but on its whole (comprising situational irony, tragic irony etc.) Secondly, we need to cross-check the speakers' judgments and intuitions with theoretically plausible arguments. Following the aforementioned guidelines, the collection and examination of a large number of examples in Greek and English[2] revealed two main elements that all ironies seemed to have in common.

The first element is contrast. This is a prerequisite for the whole natural class of ironic phenomena (dramatic/situational and verbal). It can be manifested either as conflict between the goals/beliefs of the ironist and those of his target (victim) or as discrepancy between hopes/expectations (of the ironist or, most commonly, of his target) and the reality.

The second element is unexpectedness. The ironic utterance is not what a competent speaker would be expected to say in the given situation, as it does not conform to the assumptions and the expectations created by the context. Unexpectedness can be detected in different cases of ironic performance: there are cases where the ironist clearly pretends (when saying for example "*what nice weather*", during a storm), there are cases when the ironist uses a phrase which would fit into a totally different situation and, finally there are cases when the ironist neither pretends nor is being irrelevant, as for example when a mother says to her child who has left his room in a complete mess "*I like children who tidy up their rooms*".

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[2] As far as irony is concerned, there are no considerable differences between the two languages that should be pointed out as relevant to the present study. Both languages are rich in conventionalized ironic expressions, with various degrees of idiomaticity. Examples in both languages come from the corpus that I have compiled for the purposes of my study. This bilingual corpus comprises 180 dialogues and 20 narratives containing irony and coming from all sorts of contexts (TV and radio talk shows, recorded dialogues, comedy series, comics, novels and plays)

At this point, it is necessary to proceed to a more detailed look at the general devices used to express irony. It must be noted that these "techniques" are general devices for verbal irony – either it is conventionalized or not:

(a) Stating the opposite: this is the most obvious and common type of irony, where what is said is the exact opposite of what is meant. There are all kinds of ironic examples, both novel (eg. at a boring lecture someone saying "*what an interesting lecture!*") and conventionalized such as the Greek "*tora malista*!" ("now, great!", meaning "it is not good at all") or the English "*big deal*" (meaning "not important at all").

(b) Moving along scales: it is not only the exact opposite of what is meant that can be expressed in an ironic way. Whenever a logical "scale" is available/possible the intended term is substituted by a term higher/lower at the same scale. For example: "*It is raining a little bit*" (uttered when it is raining really heavily) – with an assumed scale of [no rain – a little rain – some rain – heavy rain]. When moving down a scale (like in this example), we have an understatement, when moving up the scale, we have an overstatement/hyperbole

(c) Irrelevant -shifting contexts: this is the third major irony device and it consists of examples like the following (from Greek):

(1)   *sistisu*
        Introduce yourself
        na sistiθo?
        (Shall I) introduce myself?
        oxi na mas traγuδisis mia aria apo tus γamus tu Figaro
        No, you shall sing us an aria from "the marriage of Figaro"

In that example "singing an aria" is totally irrelevant to the given context and extracted from a totally different context (opera singers). It is a device most commonly found in ironic idiomatic – conventionalized expressions. For example – from Greek again:

(2)   *mi fas exume γlarosupa*
        Don't eat, we are having gull soup

This, of course, is an unrealistic and, one could say, *surrealistic* comment, which is extracted from an imaginary context (where people invite each other to taste such a - nonexistent in reality – food) but in the actual case it is used ironically to denote that someone is having false hopes.

Moving on to our main focus, which falls on conventionalized ironies, it is necessary to detect some common characteristics that distinguish this class of ironies from the rest. One particular characteristic, as seen in the "gull soup" example, is the high degree of idiomaticity and nonsense/absurdity. Usually, novel ironies do not sound so nonsense and irrelevant, precisely because it is not given that the addressee will understand the irony. This is why the speaker's goal is to make the ironic remark as transparent as possible. Therefore, one distinguishing feature of many conventionalized expressions is their *opaque* character. To provide an additional example, from English this time, the phrase "*a pretty kettle of fish*", is an idiom that refers to an awkward/undesirable situation, although it is not evident why there could be any analogies between a situation and a kettle of fish.

A final characteristic of conventionalized ironies is that they very often have the character of exclamation. The exaggerated exclamation appears with both syntactic and intonational features.

There is an apparent difference, for instance, between the conventionalized ironic phrase: "A fine friend you are!" and its less "marked" counterpart "You are a fine friend", the first being clearly ironic, while the second being interpretable in both ironic and non ironic ways, depending on the context

4.2 Testing Literality criteria

4.2.1 Context dependence

It is almost impossible for a non conventionalized irony to be recognizable out of context. Here, we must allow for a degree of context dependence even in the case of some conventionalized ironies (the ones that mean the exact opposite of what they say and are used as exclamations –such as "*now, that's great!*"). The only ironies that can be recognized as arising context independently are the idiomatic expressions (such as example 2 above, the "gull soup" example).

4.2.2 Cancellability

Ironies that express the exact opposite of what they actually mean are the most easily cancellable, as in the following example:

(3) A. *How was the party?*
  B. *Oh, it was great!*
  A. *Was it that bad?* [A derives ironic meaning]
  B. *No, really it was great!* [B cancels possible ironic meaning]

Here, again, even if an ironic type tends to be conventionalized ("*oh, great!*") it can be cancelled. Again, the only expressions that cannot be explicitly cancelled are the fully conventionalized idiomatic ones (example 2).

4.2.3 Stability of form and function / frequency of use

A characteristic of all conventionalized ironies is *stability in form*. The term *form* may also include some extra-linguistic intonational characteristics, especially for the "exclamation"-like type of irony. This means that expressions such as "*ha ha! very funny*" or "yeah right!" are always followed by specific intonation when used ironically. On the other hand, fully conventionalized idiomatic expressions do not need the help of intonation because their form is too stable to cause any ambiguity (like the "*a fine kettle of fish*" example). In these, any possible micro-variation in intonation does not affect the ironic result (see Padilla Garcia 2009).

This criterion, of course, does not apply at all to novel ironies, which by definition, cannot have anything stable, as their ironic meaning is a meaning created ad hoc (on-line) just for the purpose of the particular utterance. For example, when a student says "*I got the best marks ever*" meaning that he got very bad marks there is nothing in the form of that expression that would predict the particular ironic function.

Taking everything into consideration, we witness a *split* among conventionalized ironies: the fully idiomatic ones are totally consistent with all the proposed literality criteria, while those that are conventionalized to a certain degree may not always be classified as literal by the first two criteria (context dependence and cancellability). In all, non conventionalized ironies have more possibilities

of "failing" the literality tests, clearly being categorized differently from their conventionalized counterparts.

5. Conclusions

The notion of literality is a very crucial but ill-defined one. In this analysis, I proposed some criteria that function as tests for the literal use of an expression. I found that conventionalized (either fully or up to a certain degree) expressions satisfy these criteria, therefore falling in the category of *literal* (with various respective degrees of literality).

There are some important repercussions stemming from the above observation. First of all, it is highlighted that *literal* is not defined as the use of a word with its purely logical/semantic content, but it can also be the functionally consistent, context independent use of an expression, which may not necessarily be lexicalized. The result is "loosening" the notion of literality, which is not necessarily restricted to the folk theoretic intuition that whatever is "figurative" is also nonliteral. Secondly, irony (and, in extension, similar "figurative" phenomena) is divided into two distinct categories (conventionalized and non conventionalized), which exhibit different properties. Therefore, conventionalized and non conventionalized ironies belong to two different classes of phenomena. Although they serve the same conversational goal, their meanings are derived differently (*ad hoc* versus *encoded*).

Finally, it is worth concluding with a methodological comment: in many cases (Gibbs 1986, Kreuz and Glucksberg 1989) experimental work done on irony uses its more conventionalized forms, mainly because these are examples that can easily be collected and categorized. A result of this, especially when measuring effects such as processing/reaction times, may be the extraction of misleading results, since the object of study is not genuinely nonliteral. It is, therefore, important that there is a solid distinction between the conventionalized and the non conventionalized types of the figurative phenomena (irony in particular, but also metaphor and metonymy) in theoretical discussions as well as experimental treatments.

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An apparent dissociation between input and outcome in L2 acquisition: L2 English-accent acquisition in Hong Kong

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Abstract

This paper reports on a preliminary, small-scale study of Hong Kong English learners whose initial pre-school and on-going exposure to their L2 was primarily from Filipino housekeepers. The study focuses on Hong Kong Chinese English speakers' pronunciation of /f/ and /v/, which are realised as [p] and [b] in Filipino English, as well as /p/, /t/, /k/ which are often not aspirated in this variety of English. Data come from spontaneous oral production and paragraph reading by five speakers aged 12-23 at the time of testing, three of whom had grown up with Filipino housekeepers and two of whom had not. No Filipino influence was found. The fact that Filipino input exerts no apparent influence on these speakers' variety at the ages at which they were tested is perplexing given that learners normally acquire the variety they are exposed to. These results point to the need to scrutinise social factors in determining the variant an L2 speaker adopts, where divergence in this case marks non-inclusion in the Filipino group. They also point to the need of looking at younger learners when their primary exposure is indeed to Filipino English

1 Introduction/ Rationale

The idea that drives this study originates from anecdotal observations and the author's personal experience: speakers who grew up receiving Filipino-accented English input in Hong Kong do not seem to 'acquire' this variety. This seems to be quite a puzzling fact given that (at least pre-puberty when it comes to phonology) learners normally acquire a given language (or dialect) when they receive input in that language (Archibald 2009; Krashen 1985; 2003; Moyer 2009; Piske and Young-Scholten 2009; Young-Scholten 1995; 1994).

The scenario of foreign domestic helpers (FDHs) interacting with their employers' young children is common in Hong Kong (HK), where both parents are out at work during the daytime. These domestic helpers are often regarded as auxiliary English teachers of the children (McArthur 2003; Poon 2006). Such a situation provides an interesting area for examination. However, the phenomenon that concerns language contact and child SLA has been under-researched despite the flourishing of bilingualism and child SLA studies with other foci (e.g. Carr 2008; Yip and Matthews 2007; Young-Scholten to appear).

Through investigating speakers' oral production, this study intends to fill the gap in the literature by examining the relationship between input from Filipino domestic helpers and children's L2 acquisition of phonology.

2 Background

The employment of FDHs is common in many Asian and Middle Eastern countries and Hong Kong is one of these. FDHs comprise approximately three percent of Hong Kong's population (Visa and Policies 2007) with 53% from the Philippines (ibid.). The second and third largest groups of FDHs are Indonesian and Thai. This study focuses on Filipino FDHs, not only because it is the largest

group, but because Indonesian and Thai workers tend not to speak English with children in their care as most receive training in spoken Cantonese prior to their arrival in HK.

FDHs are hired "to relieve many families of household chores" (ibid.). In such households, both husband and wife are often away for work during the day. In families with pre- school children, their major exposure to English is from the FDHs with whom they interact (McArthur 2002; Poon 2006). Since these FDHs are those who interact most often with the children during their initial exposure to English, they would hence logically play a significant role in shaping children's language development, including the phonological system. Under such circumstances, many of the children, nonetheless, have not grown up 'acquiring' a foreign accent.

This study focuses on English segmental phonology because relevant comparable studies of Hong Kong and Filipino English are more readily available than suprasegmental ones. By comparing the differences between the general Filipino accent and Hong Kong accent, the sounds /p/, /t/, /k/, /f/, and /v/ are chosen to be the subject of scrutiny. These sounds are chosen because they are represented distinctively in the respective accents (cf. table 1); hence they can be used to shed light on learners' phonological system. It is therefore useful to look at the different relevant characteristics of these accents, which are described in section 2.1 and 2.2.

2.1   The Filipino accent

The target taught in Philippine English curriculum is the Standard Filipino English (Llamzon 1969) which contains its own unique features regarding both segmental and suprasegmental phonology (Tayao 2008).[1] Although there might be subtle alternants depending on people's profession and education level, the general patterns observed for Filipino English are, with respect to consonants, described as follows (Bautista 2000, Tayao 2008):

1. The degree of aspiration varies; very often the /p/, /t/, /k/ are not aspirated in syllable-initial position (where aspiration is strongest in American and British English (Carr 1999: 106; Davenport and Hannahs 2005:22)).
2. Consonant substitutions are common:
    i.   Labiodental fricatives are problematic, voiceless /f/ is often realised as voiceless bilabial stop [p], and voiced /v/ is realised as voiced bilabial stop [b].
    ii. Interdental fricatives /ɵ/ (voiceless), /ð/ (voiced) are often replaced by alveolar stops [t] (voiceless), [d] (voiced).
    iii. Confusion exists between sibilants (alveolar and postalveolar fricatives) /s/, /z/, /ʃ/, and /ʒ/.
    iv. Affricates /ʧ/ (voiceless), /ʤ/ (voiced) are realised as [ts] and [dj] respectively in word-initial position.
3. It is rhotic, but the /ɹ/ which is a retroflex in General American English (GAE) is rendered as a flap [ɾ].

These generalisations accord with those constructed from the data available in the International Dialect English Archive (Meier 1997). In addition to that, the distinction between long and short vowel pairs are not often made (McArthur 1998).

2.2   The Hong Kong accent

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[1] English is one of the official languages in the Philippines.

Bolton (2000) has argued for Hong Kong English to be recognised as a variety of English alongside Malaysian, Singaporean and Filipino English as it displays its own unique and systematic grammatical and phonological features. Others advocate a similar position on the grounds of linguistic creativity and the emergence of localised lexis (Benson 2000). Assuming an official language status (Legislative Council, H.K., 1974; 1997) or outer-circle variety status, HK English manifests distinctive phonological features as follows (Bolton and Kwok 1990; Deterding et al. 2008; Hung 2000; Luke and Richards 1982; Sewell 2009):

1. Common substitutions of consonants:
   i. Interdental fricatives /θ/ (voiceless), /ð/ (voiced) are often replaced by alveolar stops [t] (voiceless), [d] (voiced). The voiceless interdental fricative /θ/ is sometimes realised as [f] as well.
   ii. Alveolar nasal /n/ and alveolar lateral /l/ are used interchangeably.
   iii. Voiced labial-velar approximant [w] is substituted for voiced labiodental fricative /v/.
   iv. Voiceless alveolar fricative [s] is used for voiceless postalveolar fricative /ʃ/.
   v. Dipthong /oʊ/ is used as a substitute for medial and final alveolar lateral /l/.
2. Deletion of final consonants: e.g. [kwaɪ] for [kwaɪt] in "quite" and as a strategy for simplifying consonant clusters, e.g. [moʊs] for [moʊst] in "most".
3. Addition of devoiced alveolar stop /d̥/ before regular past tense suffix, e.g. [ʧeɪnʧd̥ʌd̥] for [ʧeɪnʤd] in "changed"
4. Devoicing of voiced consonants, e.g. [d̥ɪd̥] for [dɪd] in "did".
5. Vowel shortening, e.g. [fʊd] for [fuːd] in the word "food"

Table 1: *Comparable contrasts between Filipino and HK English*

	Filipino English	**Hong Kong English**
.#_ (/p/, /t/, /k/)	not aspirated	aspirated
/f/, /v/	/f/ realised as [p], /v/ as [b]	/f/ realised as [f], /v/ as [v]/ [w]
/θ/, /ð/	/θ/ realised as [t], /ð/ as [d]	/θ/ realised as [t]/ [f], /ð/as [d]
sibilants /s/, /z/, /ʃ/ /ʒ/	confusion among them	/ʃ/ realised as [s]
rhoticity	rhotic	non-rhotic

3   The study – speech production

Though it has been observed anecdotally that children in Hong Kong growing up receiving Filipino-accented English input do not acquire this particular variety of English, this seeming dissociation between input and acquisition has not been systematically studied (Leung 2009a, b). The present study is one of the first attempts to do so.[2]

The preliminary study looked at HK English learners whose initial pre-school and on-going exposure to their L2 was from Filipino housekeepers. The study focused on Hong Kong-Chinese English speakers' pronunciation of labio-dental fricatives /f/ and /v/ and plosive onsets /p/, /t/, /k/ (c.f. table 1).

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[2] The study reported in this paper is part of a larger, on-going PhD study of the author.

Through two separate tasks, English production data were elicited from five HK and two Filipino speakers. The findings of this small scale study highlight the seeming dissociation conundrum between input and acquisition alluded to above.

Participants

Informants, aged from 12 to 23 at the time of data collection, were divided into two groups according to their exposure to Filipino-accented English input. Group A comprises three participants who had been exposed to FDH input from birth, while group B is made up of two informants who had not received such input. The informants have quite different language profiles, with varying degrees of English proficiency; (Level 3-5 in stages of Organic Grammar (Vainikka and Young-Scholten 2007; Young-Scholten and Ijuin 2006 or from B1-C2 of the Common European Framework))[3]; years of English instruction (6-12 years)[4]; and level of education (primary – tertiary). In addition to Groups A and B, a FDH group of two informants was included as a native speaking Filipino English group; both (LR and NI) were the actual housekeepers of AL, and CH, NH, respectively.
Due to the above varying factors, participants differ in terms of their quality and quantity of English exposure. Those in Group A received quite intensive English input from Filipinos. At the same time they also received institutional input from schooling (table 2; fig. 1).

Table 2: *Amount of English input that informants get from different sources*

	Filipinos	**Institutional means**
Pre-school	7-9 hours / day	rare
Kindergarten	6 hours / day	4 hours / week
Primary school	4-6 hours / day	4.5-6 hours/ week
Secondary school	around 3-5 hours / day (informants AL & CH)	4.5-26 hours / week (depending on EMI/ CMI cf. f.t. 2)
Tertiary education	< 3 hours / day (informants AL & CH)	4-6 hours /week (informant BN)

On the other hand, the English input that informants in group B received was limited to mainly institutional (i.e. the right-most column of table 2; the institutional line in fig.1). This not only means that they had less exposure to varieties of English but, at the same time, received a lower amount of English input over the years.[5] Table 3 provides a summary of participants' profiles.

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[3] Only participants who had taken benchmark tests such as IELTS are included in this scale.
[4] The quantity of English input participants had received varies according to whether they were in an English as a medium of instruction (EMI) or Chinese as a medium of instruction (CMI) school. All academic subjects are taught in English in EMI schools while they are taught in Chinese in CMI schools.
[5] For details about confounding issues with respect to input please refer to Flege (2009).

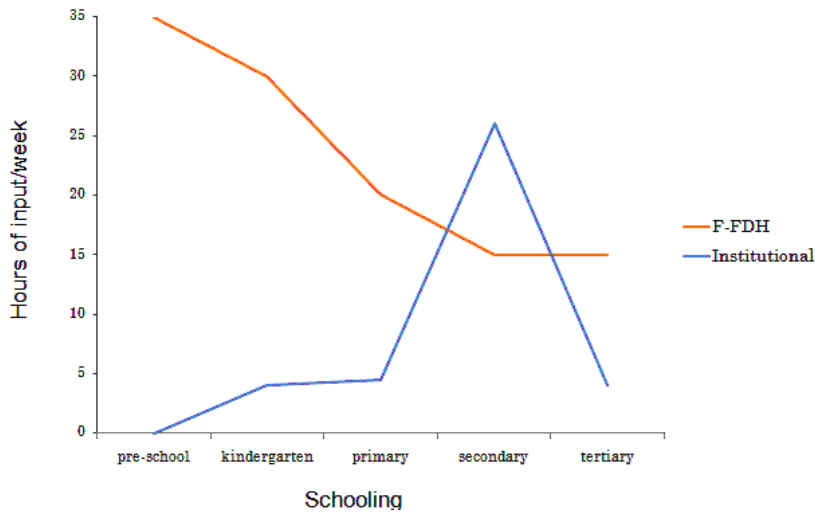**Figure 1**: *Amount of English input that informants got from different sources*

Table 3: *Participants' profiles*

Groups	Subjects	Age	English proficiency		Years of English instruction	Level of education
			Stages in OG	CEF		
A	AL	22	5	C2	12	Tertiary (Undergrad)
	CH	18	3-4	B1-B2	12	Tertiary (Higher Diploma)
	NH	12	3	N/A	6	Primary (sixth-year)
B	BN	23	5	C2	12	Tertiary (Postgrad)
	TC	15	4	N/A	9	Secondary (third-year)
Control	LR	55	5	N/A	N/A	Secondary (equivalent to AL)
	NI	52	5	N/A	N/A	Secondary (equivalent to AL)

* OG = Organic Grammar; CEF = Common European Framework

3.2   Tasks

The data were collected using two tasks, the first of which was a paragraph reading task, and the second a spontaneous oral production task.

3.2.1 Task 1

The paragraph chosen for the reading task was a 106-word passage (see appendix). This elicitation instrument targets the pronunciation of phones that are attested to be problematic for Filipinos, including distinctions in onsets between labiodental fricatives (/f/ /v/) and bilabial stops (/p/ /b/). For instance, *Filipino* is pronounced as [pɪlɪpɪno], *very* is realised as [bɛɹɪ]. Furthermore, /p/, /t/, /k/ in syllable onsets are analysed in order to track the degree of aspiration. The test passage, which is about Filipino domestic helpers in Hong Kong, was constructed in a way that participants could relate to and feel engaged with it and not monitor their output to yield their actual pronunciation. The

paragraph contained 12 tokens of /f/, /v/ and 26 tokens of /p/, /t/, /k/ in syllable-initial position. In total, these form 36% of the passage, giving approximately 1 token in every 3 words.[6]

3.2.2 Results

Results for the Filipino group will first be presented since the key question under investigation is whether learners are influenced by the Filipino FDHs in any way. It is hence more appropriate to first look at the results of the Filipino group before proceeding to discuss the results of the other groups.

By and large the Filipino group performed in accordance with what is reported in the literature as a Filipino accent (Bautista 2000, Tayao 2008). For participant LR, out of the 26 tokens of onsets /p/, /t/, /k/, only 5 (approximately 19%) are aspirated fully, the other 8 (31 %) are partially aspirated and 13 (50%) are not aspirated at all. This agrees with the "lack of aspiration" characteristics of the Filipino accent stated in the literature, as stated above. Onsets /f/ and /v/ are rendered as [f] and [v], respectively, in only 1 instance (8% of the time) out of 12 tokens. The rest are pronounced as [p] and [b]. NI, on the other hand, only aspirated 4 of the 28 /p/, /t/, /k/ onsets (14%).[7] It is worth noting that NI substituted /f/ and /v/ with [p] and[b] in fewer instances than LR did; they are pronounced as [f] and [v] in 6 out of 10 times (60%). The pronunciation of individual phones by the Filipino speakers is shown in table 4a.

Table 4a: *The total number of fully (FA), partially (PA), non (NA), -aspirated p, t, k and substituted, normally-rendered, f, v in task 1.*

Groups	Subjects		Plosive onsets					Labio-dental fricative onsets		
			$[\alpha^h]$ (FA)	$[\alpha^h]$ (PA)	$[\alpha]$ (NA)	total tokens of p, t, k		f rendered as [p]; v rendered as [b]	rendered normally	total tokens of f, v
Control	LR	p	1/9	3/9	5/9	26	f	9/10	1/10	12
		t	3/6	1/6	2/6		v	2/2	0/2	
		k	1/11	4/11	6/11					
		total	5/26 (19%)	8/26 (31%)	13/26 (50%)		total	11/12	1/12 (8%)	
	NI	p	1/9	1/9	7/9	28	f	2/8	6/8	10
		t	2/8	0/8	6/8		v	2/2	0/2	
		k	1/11	1/11	9/11					
		total	4/28 (14%)	2/28 (7%)	22/28 (79%)		total	4/10	6/10 (60%)	

Results obtained from group A and B are comparatively straightforward. All of the /p/, /t/, /k/ tokens are pronounced as $[p^h]$, $[t^h]$, $[k^h]$, while all of the /f/, /v/ are pronounced as [f] and [v] regardless of differences in their level of education, years of English instruction and English proficiency. A summary of the results of these two groups is shown in table 4b.

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[6] All numbers are rounded up to the closest digit unless otherwise stated.

[7] The difference in the number of tokens is due to the fact that one of the target words *often* can either be pronounced as [ɒfən] or [ɒftən]. Hence depending on the pronunciation one adopts, there can be two more tokens in the plosive set or two fewer in the labio-dental set.

Table 4b: *The total number of fully aspirated p,t,k and appropriately rendered f, v in task 1.*

Groups	Subjects	Plosive onsets				Labio-dental fricative onsets		
		p [pʰ / pʰ]	t [tʰ / tʰ]	k [kʰ / kʰ]	total	f [f]	v [v]	total
A	AL	9/9	6/6	11/11	26/26 (100%)	10/10	2/2	12/12 (100%)
	CH	9/9	5/5	10/10	24/24* (100%)	10/10	2/2	12/12 (100%)
	NH	9/9	8/8	11/11	28/28 (100%)	8/8	2/2	10/10 (100%)
B	BN	9/9	6/6	11/11	26/26 (100%)	10/10	2/2	12/12 (100%)
	TC	9/9	8/8	11/11	28/28 (100%)	8/8	2/2	10/10 (100%)

*The sum of the plosives of CH differs from others because 2 tokens had to be discarded as the participant produced "Chinese" for the word "Cantonese"

3.2.3 Task 2

Although paragraph reading is agreed to be a better task than reading words in isolation (Labov 1972; 2001), as it is less likely to result in pronunciation of citation forms, it is still a task that is partly controlled and speakers are inevitably conscious of their production when reading. In view of that, the study included as a second task a spontaneous production task for participants in both group A and B. This task, set up in the form of a semi-structured interview, aimed to elicit production resembling natural speech, where speakers were not monitoring their output as much as on the reading task. For this task, interviewees were asked to respond to questions concerning their personal experiences; and the questions included swine flu (a threat at time data were collected), study/ work life and favourite foods, e.g. *Can you tell me a bit about yourself? How did you feel about the swine flu pandemic?* Such questions are thought to be able to elicit more natural responses (see Labov 1972; 2001; Meyerhoff 2006).

Conversations between the interviewer and informants were recorded. 15 minutes of the data obtained were examined. The production of /f, v/, /p, t, k/ onsets was tabulated and analysed.[8]

3.2.4 Results

The number of tokens collected differs with each individual as it was a free-speech exercise, though the questions asked indirectly prompted informants to produce /p/, /t/, /k/, /f/, /v/. The number of onsets /p/, /t/, /k/ produced ranges from 50 – 256, while the sum of onsets /f/, /v/ ranges from 13 – 64. All plosive onsets, /p/, /t/, /k/, are pronounced with aspiration, while all fricatives, /f/ and /v/, are rendered as [f] and [v] (table 4.c).

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[8] It has to be pointed out that data obtained from speakers who are less eloquent might be less than 15 minutes.

Table 4c: *The total number of fully aspirated p,t,k and appropriately rendered f, v in task 2.*

Groups	Subjects	Plosive onsets				Labio-dental fricative onsets		
		p [pʰ / pʰ]	t [tʰ / tʰ]	k [kʰ / kʰ]	total	f [f]	v [v]	total
A	AL	71/71	117/117	68/68	256/256 (100%)	37/37	18/18	55/55 (100%)
	CH	10/10	20/20	20/20	50/50 (100%)	10/10	3/3	13/13 (100%)
	NH	19/19	55/55	21/21	95/95 (100%)	30/30	4/4	34/34 (100%)
B	BN	43/43	66/66	48/48	157/157 (100%)	50/50	14/14	64/64 (100%)
	TC	14/14	35/35	29/29	78/78 (100%)	20/20	8/8	28/28 (100%)

4   Discussion

Task 1 reveals that the pronunciation of participants differs from Filipinos. The differences are striking with regard to both the aspiration of /p/, /t/, /k/ (aspiration for group A and B: 100% vs Filipino Group: 17%) and the rendering of /f/, /v/ (group A and B: 100% vs Filipino Group: 50%). In other words, group A and B contrast starkly with the Filipino group. The findings from task 1 are reinforced by that of the second task where relevant sounds analysed display no Filipino influence. It is also interesting to note, despite receiving on-going input from Filipino FDHs none of the informants in group A shows signs of Filipino accent in their English production.[9] This result accords with the anecdotal observation of the purported dissociation conundrum between input and acquisition in this unique Hong Kong context.

The results seem to indicate that learners are not influenced by the Filipino accented input to which they had been constantly exposed from an early age. This appears to be at odds with a range of L2 phonology findings (Moyer 2009; Sumdangdej 2007; Young-Scholten 1994). One might therefore be led to think that learners do not acquire this variety, therefore, challenging the role that input plays in (second) language acquisition, at least for pre-puberty learners (see Piske and Young-Scholten 2009). However, for one to claim that these learners have not acquired this particular variety of English, one has to demonstrate their insensitivity towards this accent as well. These speakers could have built an implicit knowledge (perception) of this type of English through on-going exposure (Wode 1994; 1995; 1997), but they could nonetheless fail to display this in production. Findings obtained from a related speech perception study (Leung to appear), which included informants who had also taken part in this study, point in fact to the conclusion that learners who are exposed to Filipino-accented English input are able to perceive relevant phones better than those who have not had such input. This applies even to the youngest subject who was barely 2 years and 7 month old. This indicates that learners' acquisition indeed proceeds as predicted by the literature; hence the next step is to look for factors that might have led to speakers' non-production of Filipino accented English. Moreover, it will be interesting to see if these observations hold true when younger participants whose exposure to English is predominantly from FDHs are included (cf. fig. 1).

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[9] One anonymous reviewer has pointed out the possibility of L1 influence leading to the obtained results. This issue, though worth investigating, falls outside the scope of the present paper; however, under current Optimality Theory (OT) framework, L2 phonology acquisition involves constraints re-ranking triggered by the input available, hence it is inadequate to account for learners' phonological system solely by L1 influence (see Hancin-Bhatt 2008).

On the other hand, from a sociolinguistic perspective, it is possible to hypothesise that the results obtained were influenced by the fact that the researcher is not a speaker of Filipino English. That is, informants have accommodated to the researcher's (Hong Kong English) accent (Beebe and Giles 1984), or they have designed their speech according to whom they perceived the interlocutor to be (Bell 1984; 1990). Therefore, future research should include researchers with Filipino accents to test for the possibility of such accommodation.

5   Conclusion

The reported study demonstrates that speakers do not produce Filipino-accented English speech despite growing up with such input. On the face of it, these findings seem to go against the traditional views in language acquisition, since one would typically acquire the language one is exposed to, at least within the critical period. The non-production of Filipino accented English by informants suggests that learners had somehow avoided acquiring the Filipino variety despite continuous input. However, such a conclusion drawn without considering speakers' ability to perceive the variety is dubious at best. In line with Leung's (to appear) findings, it is possible that participants have indeed acquired implicit knowledge of this variety, even though they do not use it in their production. Furthermore, results obtained from the current study can be associated to performance variations where speaker accommodates to or diverges from particular norms, including accents, to mark their position in relation to a group.

Although the limited sample size hampers the generalising power of the study (i.e. results must be interpreted with caution), the study raises a number of interesting questions pertaining to SLA. Investigating issues related to factors affecting the linguistic choice of multi-lectals, attitude and identity would potentially shed light on how various features may come into play in shaping children's SLA.

Appendix: Task 1: Paragraph reading

Hong Kong is a place with many foreign domestic helpers. Indonesian, Thai, and Filipinos are three of the major groups among them. Many of those foreign domestic helpers are staying there for a long time, very often up to ten years. They are one of the groups of people who help keeping Hong Kong's economy running smoothly. Foreign domestic helpers often acculturate into Hong Kong's culture and become a part of the family of the household; some of them can even cook local Cantonese food very well. They might also be able to give you some tips about the best places to go and have fun.

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Presupposition accommodation in local contexts: why global accommodation is not enough[1]

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Abstract

It is a somewhat vexed question whether presuppositions are always accommodated into the global context of utterance of the sentence, or whether they may sometimes be accommodated into a local context - the context of some subsentential constituent. Von Fintel (2008) argues that there is no local accommodation. He shows that presuppositions in the scope of universally quantified sentences, which have traditionally been handled via local accommodation (eg Heim 1983), can be accounted for by assuming that conversational participants select a domain of quantification such that every relevant element of it has the property required by the presupposition in the scope. It is shown that this domain selection mechanism cannot account for a related set of data involving presupposition triggers in the restrictor rather than scope of the universal. We also discuss the relationship between quantified sentences and conditionals, and general consequences for the theory of presupposition accommodation.

1.   Introduction

Theories of dynamic semantics (Heim 1982, 1983a, 1983b) raise interesting questions about presupposition accommodation - the process by which a context is adjusted to entail the presupposition of some asserted sentence S, in order that the context can be updated with S. Such theories model contexts as sets of possible worlds - the worlds in which everything that is presupposed by the participants in a conversation at a particular stage in that conversation is true. The meaning of a sentence is its context change potential (CCP) - a function from contexts to contexts. The CCP of 'John loves his king' can be stated as

1) c + John loves his king = $\{w \in c$: John loves his king in $w\}$.

where (i) c is an arbitrary context, and (ii) for any sentence S, '$c + S$' is the operation of updating a context c with S - intuitively, the addition of the content of S to c; the operation is equivalent to intersection of the set of worlds in c with the set of worlds such that S.

Within this framework, presuppositions are modeled as definedness conditions on the update of a context with the sentence bearing the presupposition. Hence the presupposition that John has a king, triggered by the definite description in 'John loves his king', is rendered as the proviso that the CCP of 'John loves his king' is defined only for contexts that entail that John has a king[2]. Following Heim (1983a) we shall say that if a context c *admits* S then the CCP of S is defined for c. Presupposition accommodation can then be defined as follows.

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[2] A context c entails that P iff every world in c is a world such that P.

2) For any sentence S with presupposition P uttered in a context c that does not admit S, the accommodation of P is the updating of c with P, creating a new context c' such that c' admits S.

One of the things that a dynamic semantic theory must do is to account for how the meaning of a sentence depends on the meanings of its parts. For instance, given a sentence 'Not S', what is the contribution of the semantic value of 'S' to the determining of the semantic value of 'Not S'? According to Heim (1983), such a sentence is an instruction to update c with S, and subtract the result from c:

3) c + John does not love his king = c \ c + John loves his king
   = c \ {w ∈ c: John loves his king in w}   [by (1)]
   = {w ∈ c: John does not love his king in w}   [by meaning of /]

Now contexts are being pressed into service for a new role: they are no longer simply the objects which are changed as a consequence of acts of uttering sentences, they are also key players in the computation of the semantic values of constituents of sentences. Let us say that for any sentence S, the context c in which S is uttered is the global context of S. We shall use the term 'non-global context' for any context which is the argument of the CCP of a sub-constituent of S[3]. Sometimes, the non-global context and the global context will happen to be the same, as with negation (exemplified in (3)). But the two may also part ways, as we can show by stating the CCP for the conditional (Heim (1992)).

4) c + If A, B = {w ∈ c: Sim_w(c + A) + B = same}

where (i) for any p, Sim_w(p) is the set of worlds maximally similar to w in which p holds[4]; and (ii) Sim_w(c + A) + B = same iff Sim_w(c + A) = Sim_w(c + A) + B.

Here, c is the global context for 'If A then B', and is also the non-global context for A. Ignoring the function *Sim* for the moment, the non-global context for B is (c + A). Now, suppose B carries a presupposition P that is not entailed by (c + A). If P is uncontroversial and unsurprising, then the context will be adjusted to entail P. But in fact, given that information is accumulated and retained in successive contexts according to this model, the accommodation need not take place in the local context for B, but instead in the global context. In fact, von Fintel (2008) argues that accommodation into any context other than the global one is impossible. Hence if I say, 'If John is married, then his children are happy', then you will accommodate the presupposition that John has children into the global context, and not simply into (a particular subset of the worlds in) the global context incremented with 'John is married'. But sometimes the global context is such that the presuppositions of the consequent cannot be accommodated into it:

5) I don't know whether John has children. But if John is married, then his children are happy.

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[3] The more common term used in the literature is 'local context'. The local context of a constituent of a sentence is the context on which the CCP of that constituent is executed. We use 'non-global context' to refer to a context that is a local context for some constituent of a sentence. We talk about the local context *for Q* (Q = a constituent of a sentence), but non-global contexts *simpliciter*. An advantage of introducing this distinction is that it enables us to talk about the corresponding classes of presupposition accommodation - local and non-global, the former being a proper subset of the latter as we shall see.

[4] Use of this function is intended to avoid well-known puzzles about conditionals by introducing a *ceteris paribus* condition on the updating of the context with the content of the antecedent.

Given the felicity of (5), the presupposition that John has children must be accommodated somewhere. The most likely candidate is into the context of the constituent carrying the trigger, yielding an interpretation that can be paraphrased as, 'If John is married, then he has children and his children are happy'. This looks like a case of non-global accommodation. It is easy to show, however, that there is a way of accommodating into the global context that is equivalent to the non-global accommodation. To adjust a context c' = c + 'John is married' to entail that John has children is just to adjust c so that it entails that c updated with 'John is married' entails that John has children, that is, to accommodate into c that if John is married then he has children.

So there are at least some cases of apparent non-global accommodation of a presupposition P that are in fact equivalent to global accommodation of a presupposition Q that is related to P in a systematic way. Now, von Fintel (2008) claims that there is nothing other than global accommodation - accommodation is always into the global context. If it could be shown of every putative instance of non-global accommodation that there is some instance of global accommodation to which it is equivalent, then this hypothesis would be uninteresting. I take it, therefore, that what is in contention is not that class of accommodation that, as in (5), could be construed as global or non-global, depending on how one looks at it. Instead, we shall ask whether it ever happens that a presupposition is accommodated into a non-global context, leaving the global context unaffected. If so, then we would have found a compelling counterexample to von Fintel's claim that there is no accommodation other than global accommodation.

One candidate instance of accommodation of this latter type concerns negation. Heim (1983) argues that non-global accommodation explains why negation does not behave like a 'hole' in the following example.

6) The King of France didn't come. France doesn't have a king.

She argues that given a global context c for the first assertion that entails neither that France does nor does not have a king, then the existential presupposition of the definite description need not be accommodated into the global context c, but rather is accommodated into the non-global context which serves as the argument of the CCP of 'The King of France came' (which happens also to be c). The result of updating this non-global context with 'The King of France came' would be a context that entails that there is a King of France, but since this context is subtracted from the global context, the existential presupposition is not entailed by the global context. Heim calls this 'local accommodation', and characterizes this as 'rather like adjusting the context only for the immediate purpose of evaluating the constituent sentence…' (Heim 1983:401). It is this species of accommodation that we shall be most interested in in this paper[5]. There has I think been some inconsistency in the literature as to the use of the term 'local accommodation' - one finds applications of it not only to cases of the negation kind, but also to the kind of cases exemplified by our conditional example, where the non-global accommodation is equivalent to global accommodation of a related presupposition. In what follows I shall to some extent depart from Heim's terminology, using 'non-global accommodation' (as defined above) to pick out a class which bifurcates into 'local accommodation' (accommodation into the local context of the trigger), and 'intermediate accommodation' (accommodation into a context that lies somewhere in between the local and global context). Each term will be applied without prejudice as to whether the accommodation has consequences for the global context.

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[5] We discuss the case of negation no further. See von Fintel (2008) for persuasive counterarguments to the view that presuppositions of constituents of negated sentences may be accommodated into their local context.

2.   Quantified sentences.

Sentences employing the universal quantifier have traditionally served as the test case for non-global accommodation. It is on the basis of these that von Fintel (1993, 2007) and von Fintel and Iatridou (2008) have claimed that all accommodation is global. We begin with a classic example discussed in Heim (1983a).

7) Every nation loves its king.

Intuitively, the sentence presupposes that every relevant nation has a king. One might model this by invoking local accommodation into the scope of the universal (8a) or intermediate accommodation into the restrictor (8b).

(8a) [Every] [nation] [*has a king* and loves its king].
(8b) [Every] [nation *that has a king*] [loves its king][6].

We shall suppose, with Heim, that the relevant constituents of (7) are (i) 'every x_i', (ii) 'x_i is a nation' and (iii) 'x_i loves x_i's king'. (iii) contains a presupposition trigger in the form of a definite description, yielding the presupposition, 'x_i has a king'. A compositional dynamic semantics for (7) will therefore require reference to the CCPs of these constituents. This raises the question of how to state CCPs of non-propositional sentences (sentences with free variables), which Heim resolves by giving up the assumption that a context models only propositional information, in favor of thinking of contexts as files - sets of cards on which is written information that need not be propositional in nature. A file may nonetheless be mapped to true or false - true, if there is a set of individuals satisfying the property described on the relevant card(s), and false otherwise. Variables are modeled by creating a new card numbered with the number given in the variable's index, so that the information given by 'x_i is a nation' is represented as 'is a nation' on card i. Values of variables can then be fixed via an assignment function that maps the number given by the variable's index to an individual. Such a function is called a sequence; contexts then are no longer sets of worlds, but rather sets of sequence-world pairs, <g,w>. By providing a means of supplying values to variables, the addition of g to the formal apparatus makes it possible to dispense with the notion that the updating of a context is always the addition of a propositional content, in turn enabling the theorist to state CCPs for the restrictor and scope of a quantificational determiner. With these preliminaries in place, Heim gives the following semantics for universally quantified sentences

(9) *The CCP of 'every'.*
c + Every x_i, A, B = {<g,w> $\in$ c: for every a, if <$g_{i/a}$,w> is an element of c + A, then <$g_{i/a}$,w> is an element of c + A + B}.   [Heim 1983a: 402, (21)]

Let's think about the conditional in (9). Recall Heim's semantics for conditionals, stated in (4). Since quantified sentences have motivated us to think of contexts as sets of sequence-world pairs, rather than simply worlds, (4) becomes (10):

(10) c + If A, B = {<g,w> $\in$ c: Sim$_{<g,w>}$(c + A) + B = same}
where Sim$_{<g,w>}$(p) is the set of sequence-world pairs maximally similar to <g,w> such that p.

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[6] We assume that what Beaver and Zeevat (2007) term 'The Principle of Explicit Addition' holds - that is, that 'accommodation is only possible in contexts where explicit addition of the accommodated material would (i) produce a felicitous discourse and (ii) result in a text which lacked the original presupposition' (p.510).

So we can restate (9) as follows:

(11) $c + $ Every x_i, A, B $= \{<g,w> \in$ c: for every a, $(c^a + A) + B =$ same$\}^7$
where for any a, $c^a = \{<g,w> \in$ c: $g(i) = a\}$

So a sentence of form Every x_i, A, B is defined for a context c just in case for every a, $c^a + A$ is defined, and $(c^a + A) + B$ is defined. In the sentence we are considering, B $= x_i$ loves x_i's king, which we assume, following Heim, is defined only for contexts c such that for every $<g,w>$ in c, $g(i)$ has a king in w. Now, we know that every $<g,w>$ in c^a is such that $g(i) = a$. So $g(i) = a$ in every $<g,w>$ in $(c^a + A)$. $(c^a + A)$ is defined for B iff every $<g,w>$ in $(c^a + A)$ is such that $g(i)$ has a king in w. Hence $(c^a + A)$ is defined for B iff for every $<g,w>$ in $(c^a + A)$, a has a king in w. So 'Every nation loves its king' is defined just in case it is true of every a that for every $<g,w>$ in $(c^a + A)$, a has a king in w; that is, just in case every nation has a king.

Our amended version of Heim's semantics for 'every' seems to predict the correct presupposition for sentences with a presupposition in the quantifier's scope. But our interest is in the presuppositions of quantified sentences only insofar as we would like to understand how conversational participants adjust the context in order to ensure that they are satisfied - we want to know what gets accommodated, and where. In fact, we can identify five potential strategies that are in principle available to the addressee of (7) to ensure that the context is suitable for update with its content.

(i)   For every a, accommodation into the local context of B (= accommodation into $(c^a + A)$) of the presupposition that x_i has a king.
(ii) For every a, accommodation into the local context of A (= accommodation into c^a) of the presupposition that x_i has a king.
(iii) Accommodation into the global context c of the presupposition that for every a, $(c^a + A)$ entails that x_i has a king.
(iv) Accommodation into the global context c of the presupposition that for every a, c^a entails that x_i has a king.
(v)   Selection of a domain that is such that every relevant individual in that domain (every individual with the property picked out by the restrictor) has the property required by the presupposition.

The last option does not in fact instantiate presupposition accommodation at all. Rather, it exploits the fact that quantifiers are associated with a free variable whose value is contextually determined by the domain that the speaker has in mind (von Fintel 1993, 2008); the presupposition in the scope is satisfied by selecting a domain (or crediting the speaker with having selected a domain) that has the right properties, guaranteeing that the scope is admitted by its local context. To the extent that any 'accommodation' takes place, then, it is accommodation into the global context of the presupposition that a particular domain was intended by the speaker.

(iii) can be set aside on the grounds that it is equivalent to (i). (iv) however is not equivalent to (ii); it should be set aside, but for different reasons. Consider the details. We grounded our semantics for a universally quantified statement S = 'Every x_i A, B' in the structure of a conditional; to be precise, we associated S with the CCP of a sentence of form 'If A then B', which we stated as '$\{<g,w> \in$ c: $(c + A) + B =$ same$\}$', where A and B are sentences with free variables with index i. $c + S$ is then the set of pairs $<g,w>$ in c such that for every a, $(c^a + A) + B =$ same, where c^a is that subset of c such

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[7] The semantics for the conditional incorporated into (12) differs only from Heim's in that it does not include *Sim*. Since classical material implication is adequate for stating the semantics of universal quantification, unlike for natural language *if...then...*, the similarity function would be redundant here (Daniel Rothschild, p.c.).

that $g(i) = a$ throughout. This is simply a dynamic semantic treatment of the familiar view that to assert a universally quantified statement is to give a conditional with free variables, and claim that that conditional holds for every assignment of values to the variables. Now, conditionals are not proposals to update the common ground with either their antecedent or their consequent. Rather, they are a means of supposing that some state of affairs obtains, and considering what consequences follow. So while the CCP of a sentence of form 'If A, B' uttered in a context c involves updating c with A, it is not a proposal to eliminate all the not-A worlds from c for good; it is as though c is updated with A temporarily, for the sake of argument. We might therefore ask whether accommodation of some presupposition into c can take place in order to render c suitable for update with an antecedent A; like the updating of c with A, this adjustment would not constitute a permanent change to the global context.

(12)   provides evidence that this does indeed happen for garden-variety conditionals:

12)   I don't know whether John is married. But if John's wife came to the party, then he enjoyed it.

(12) is a little strange, maybe, but it is not infelicitous. We can imagine a context where the speaker is completing a logic puzzle, piecing together information about various characters. On the basis of the clues, she has learned that John may or may not be married, and that if his wife came to the party, then he enjoyed it. If on further investigation she discovers that John's wife did indeed come to the party, she will conclude that John is married, and that John enjoyed the party. Normally, of course, when we utter conditionals we are well-informed as to whether the presuppositions of the antecedent are satisfied - otherwise why would we be interested in supposing that the content of the antecedent were true? - so that these presuppositions have the appearance of projecting globally. But (12) shows that this is not always the case. Instead, the second sentence is understood as, 'If John is married and his wife came to the party, then…' The presupposition is accommodated into c, but only provisionally - only for the purposes of (temporary) update of c with A. Crucially, the accommodated presupposition does not survive as an entailment of the global context.

Accommodation into the local context of the antecedent of a conditional is precisely what (ii) is intended to model. In (iv), unlike (ii), the accommodated content survives as an entailment of the global context - indeed, we take this to be a hallmark of global accommodation. Moreover, the result would be too strong: for (7), it would yield a context in which a king is had by every element of the domain - nation or otherwise.

We are left with (i) and (ii) - local and intermediate accommodation respectively - and (v), the domain selection view. The question is which of the three happens in practice. Intermediate accommodation and the domain selection theory seem to have some shared characteristics: both involve adjustment of the set of individuals which are claimed to have the property denoted by the scope - one by, in effect, accommodating an implicit restrictor, the other by ensuring that the domain has the right properties to begin with. Local accommodation, on the other hand, involves no adjustment of the domain; information is accommodated about what the domain is like (ie, that every nation in it has a king), but no adjustment is made to the domain itself in order to make this true. The first question, then, is how can we choose between the domain selection theory and intermediate accommodation?

If the presupposition of (7) can be satisfied by intermediate accommodation, then (7) should be compatible with a domain in which not every nation has a king: it will not matter that the domain selected does not have the right properties to ensure that the presupposition is satisfied; intermediate accommodation will ensure that the domain is restricted appropriately. After all, when I say that

every book in this room is about philosophy, I do not presuppose that every book *simpliciter* is about philosophy. This prediction is tested in the following example, from von Fintel (2008).

13) Not every player on the team is married.   # But everyone loves their spouse.

Following von Fintel, we take this as adequate evidence against intermediate accommodation and in favour of the domain selection view. Where does this leave local accommodation? Well, for (7), this would simply amount to accommodation of the information that every nation in the intended domain has a king. Now, suppose that I don't know anything about which of the world's nations have kings. I do know, however, which nations we are talking about - the European ones, say. I'm pretty sure about this, because you have just said, 'The nations in Europe all have a lot in common'. If you then follow this up with, 'Every nation loves its king', then there will be no question of me choosing a domain in which every nation has a king, firstly because I don't know which nations have this property, and secondly because even if I did, in your previous utterance you have already settled the question of which domain you have in mind. But still the context will not admit (7), because it does not entail that every European nation has a king. So I will adjust the context to make it so, in effect an act of accommodation in the local context of the trigger.

Minimally, then, local accommodation is needed. Do we need the domain selection view too? We do, as we can see by considering the reverse situation. Suppose that for each of the world's nations, I am well-informed about whether it has a king. What I am uncertain about is what the domain of quantification is. If at this point you say, 'Every nation loves its king', then I will infer that you are presupposing that every nation in the domain has a king, and select a domain that has this property. But then the domain selection view simply amounts to the truism that an addressee does not have direct access to information about which domain is intended by a speaker and that in cases of uncertainty, she will use what the speaker says as a basis on which to reduce the set of candidate domains; one aspect of the utterance that can be pressed into service for this purpose is its presuppositions.

We seem to have learned, then, that intermediate accommodation of the presuppositions of quantified statements does not occur. Here we are inclined to side with von Fintel, and indeed his example in (13) is one of the things that convinced us. But at this point von Fintel makes the following rather strong claim: 'There is no local accommodation, just presupposition projection plus possible global accommodation of information about C' (p.159). In fact, von Fintel has not shown that this is the case, and I believe that it turns out to be wrong. There are two possible explanations for the failure of intermediate accommodation in (13). One is that there is no local accommodation, as von Fintel claims. The other is that there is no constraint against local accommodation in principle, but rather local accommodation may only take place in the local context of the trigger.

Let's pause and consider what is at stake here. I doubt that von Fintel would be perturbed by our contention that in case selection of a suitable domain is not an option, then accommodation into the local context of the scope must be invoked in order to satisfy the presupposition of (7). We have already seen that this instance of local accommodation is equivalent to global accommodation of a related presupposition, and I have argued that it is not these cases that are in contention. The interesting arguments are to be had over whether there is ever accommodation in a non-global context that has no consequences for the global context. I read von Fintel as claiming that there is not. But (13) alone will not prove his point. To do so, one would have to consider a case that he does not: non-global accommodation which has no consequences for the global context, and which occurs in the local context of the trigger, and not in some intermediate context between the two. Since we

are interested in accommodation into the restrictor, we must consider a case where the presupposition trigger is in the restrictor too.

14) Every nation that loves its king is peaceful.

We assume that the relevant constituents of (14) are (i) every x_i (ii) x_i is a nation and x_i loves x_i's king and (iii) x_i is peaceful. (ii) is in turn composed of 'x_i is a nation' and 'x_i loves x_i's king'. Adopting standard dynamic semantic assumptions about conjunction, we take it that the non-global context of 'x_i loves x_i's king' is the context of the whole conjunction incremented with the first conjunct, that is, ($c^a + x_i$ is a nation), for every a, where c is the global context as usual. Accommodation of the presupposition triggered by the definite description into the context of the (minimal) constituent containing the trigger would therefore yield, for every a, ($c^a + x_i$ is a nation + x_i has a king), a suitable context for updating with the second conjunct. However, this accommodation would have no consequences for the global context: it does not yield a context in which every nation has a king. That is, since the CCPs of universally quantified statements are underpinned by a conditional semantics, accommodation into the non-global context of the restrictor amounts to a temporary updating of that context in order to make it suitable for updating with the presupposition carrying constituent - an update which is itself temporary insofar as it serves the purpose of making a claim about what the resulting context is like (that it is one which would not be changed by updating with the scope), and is not intended as an update of the global context. Now, this is not to rule out that one could respond to (14) by accommodating into the global context that every nation has a king; indeed, doing so would make local accommodation redundant. The question is whether local accommodation is also an option; if so, then we would have refuted the claim that all accommodation has consequences for the global context.

15a) Not every nation has a king. But every nation that loves its king is peaceful.
15b) Some nations have kings and some don't. But every nation that loves its king is peaceful.
15c) I don't know whether every nation has a king. But every nation that loves its king is peaceful.

(15a) is perhaps a little odd, but it is not an incoherent discourse. One does not have the sense that because the context yielded by update with the first sentence entails that not every nation has a king, it cannot be updated with the second sentence, or that the question of the truth or falsity of the second sentence does not arise. The variants in (15b-c) are even better. So global accommodation is not necessary in this case.

The other alternative to local accommodation might be to invoke the domain selection account. Perhaps the addressee of (14) infers that the speaker has in mind a domain in which every nation has a king. But (15) shows that this cannot be right either. If we assume that the domain is the same for any two occurrences of 'Every N' in successive sentences, then this inference is unavailable for (15a) and (15c). So local accommodation in the restrictor must be a possible strategy for the addressee of (14). A final consideration in favor of this conclusion comes from von Fintel's own arguments about the role of domain selection. He observes that uncertainty about the domain over which the quantifier ranges can be removed by means of a relative clause in the restrictor - hence 'every man in this room' and 'every nation in Europe' concern the totality of men in this room, and the totality of nations in Europe, nothing more or less. He rightly points out that a sentence like 'Every nation in Europe loves its king' presupposes that every nation in Europe has a king - the relative clause makes it impossible to adjust the domain to ensure that the presupposition is satisfied. By parity of reasoning, we expect that if there is no local accommodation in the restrictor of a universal, then 'Every nation in Europe that loves its king is peaceful' ought to require global accommodation of the

presupposition that every nation in Europe has a king. In fact it does not, as shown by the felicity of (16).

16) Not every nation in Europe has a king. But every nation in Europe that loves its king is peaceful.

We have learned then that non-global accommodation into the restrictor of a universal is possible. That this does not happen when the presupposition trigger is in the scope is not a symptom of a general constraint prohibiting accommodation unless it has consequences for the global context. A more likely explanation is that non-global accommodation is always into the context that serves as the argument of the CCP of the constituent in which the presupposition trigger occurs.

3   Conclusion.

A compositional dynamic semantic theory of natural language must make reference to what we called non-global contexts - contexts that are updated with constituents of sentences. We asked whether presuppositions are ever accommodated into such contexts. We argued that from a theoretical point of view, the interesting potential cases of non-global accommodation are those which have no counterpart in the realm of global accommodation - those which survive only insofar as they are needed for the computation of the CCP of the sentence, and then disappear. We have of course glossed over all sorts of interesting questions: can we distinguish empirically between equivalent instances of non-global and global accommodation, say by investigating the processing of presupposition-carrying sentences? How literally can we take the dynamic semantic vocabulary, with its appeal to notions such as 'updating' and 'incrementation' of contexts? Does it correspond to a procedure that is actually followed by language users, and whose workings can be revealed under the lens of experimental investigation? We have little to say about these questions: our claim was simply that wherever a putative case of non-global accommodation is equivalent to some instance of global accommodation, the linguistic data alone is not sufficient to show that accommodation into a non-global context has taken place, and one might as well call the accommodation global and avoid positing more than one class of things unnecessarily. Hence if it were the case that every instance of non-global accommodation had consequences for the global context, then the claim that there is non-global accommodation would be uninteresting at best, or at worst easily refuted.

Fortunately for us, then, we learned something rather more consequential. There is no intermediate accommodation in quantified statements, but not because there is no non-global accommodation of the interesting kind, but because non-global accommodation must be into the local context of the trigger - a hypothesis which one would however like to test against other environments such as propositional attitude reports, modals and conditionals, or combinations thereof. Where the presupposition trigger is in the restrictor, non-global accommodation is available, of a flavor that has no consequences for the global context.

The reader will have noticed that it is not strictly speaking true that local accommodation into the restrictor has no consequences for the global context. 'Every nation that loves its king is peaceful' can of course only be uttered in a context in which there is at least one nation that has a king. But this is simply a consequence of the presupposition that the domain over which a quantifier ranges is non-empty, akin to the presupposition that the antecedent of an indicative conditional is not known to be false - one does not like to say things that are trivially true. By 'consequences for the global context', we have in mind the case where accommodation into a local context results in an adjustment of the global context such that it entails some proposition that is necessary and sufficient to ensure that update with the presupposition carrying constituent can take place. Presupposing that there is a nation in the domain that has a king is not sufficient to guarantee that the local context of 'x_i loves

x_i's king is one in which g(i) has a king, it only ensures there is a way of accommodating the presupposition that does not conflict with what is known about the domain.

Given the evidence that non-global accommodation of an interesting kind happens, why might one be invested in the idea that it does not? Accommodation is supposed to be something that people do: the adjusting of their assumptions to render the common ground suitable for incrementation with what a speaker just said. It seems that it ought to be a property of pragmatics, therefore, and not of compositional semantics. Non-global accommodation would seem to require not only that people keep track of contexts *qua* bodies of information that change with successive conversational moves, but also that people are willing to make adjustments to contexts whose only role is to serve as the arguments of the CCPs of expressions below the utterance level. As Beaver and Zeevat (2007) have noted, this amounts to an interspersing of semantics and pragmatics, and in a manner that might require a redrawing of the boundary which some might be uncomfortable with. What has taken us to this position is not only the data, but also the move that dynamic semantics initiated to treat the context changing effects of acts of assertion to which Stalnaker drew our attention, not solely as pragmatic facts, but as a reflection of the nature of natural language semantics: semantic values simply are context change potentials. If one remains committed to compositionality, the move to give contexts a role below the level of the utterance follows. The resulting compositional semantics is not supposed to be the sort of thing that conversational participants have conscious access to. If, as we have argued, they are able to accommodate into contexts *qua* devices of the compositional semantics, that is a surprising fact. We are reminded of Recanati's (1989) claim that conversational implicatures, as inferences operating at the utterance-level, should be consciously available. But there too, there is mounting evidence that these aspects of meaning can be derived at the sub-sentential level (Chierchia 2004, 2006). One response to that evidence has been a total reassessment of the nature of scalar implicatures and the mechanisms underlying their derivation. One might conjecture that the evidence for non-global accommodation calls for a similar reevaluation in the domain of presupposition accommodation. But that is a matter for another day.

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Exploring intonational change: Could a final rise be derived from a final fall?

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Abstract

How do we attempt to study intonational change, when (unlike vowels and consonants) intonation is not preserved historically through writing? I have considered this problem in the context of the conundrum of final rises found on statements in Belfast English. Historically, these 'rises' may have been final falls, which have now become realised as rises (cf. Dalton & Ni Chasaide 2005). This paper includes empirical work using rising and falling data from the IViE corpus (Grabe et al 2001). I have separately tried to develop theoretical proposals on how an intonational fall could change into a rise. In fact, it was difficult to reconcile my theoretical proposals with the actual data. This suggests that a different account of the origin of the Belfast statement rises and/or more data analysis is needed.

1   Introduction

Intonation refers primarily to a speaker's use of pitch (or fundamental frequency (f0)) at the *utterance* level, around the most prominent stressed syllables and at Intonational phrase (IP) boundaries (Ladd 2008). A basic example of an utterance level contrast is that between a statement and a question. Traditionally, people have expected statements to feature intonational falls and questions to feature intonational rises, but the meaning of the individual words remains the same. For example, if I say the words 'you have a visitor' with a fall on 'visitor', you would probably interpret that as a statement. If I say the same sequence of words with a rise on 'visitor', you would probably understand that as a question i.e. 'do you have a visitor?'

This paper deals with intonational change, which is unexplored in contrast to studies of variation and change in segmental phonology. I have chosen to study intonational change in a very narrow context. This context tries to understand the phenomenon of final rises being found somewhat unusually on *statements* in Belfast English. I have approached the problem of studying intonational change from two parallel standpoints: empirical analysis of contemporary Belfast English corpus data and a theoretical account of change. My goal is to try to draw these two different strands together. This paper will end with an outline of new experimental work, analysis of which is currently underway.

2   Framework of study

The crucial concept in intonation for this paper is the Nuclear tone (see Cruttenden 1997). This concept comes from the British tradition of intonation analysis and refers to the part of the intonation contour from the main stressed syllable until the end of the utterance/IP. Therefore, we are dealing with the final part of the intonation contour. The two fundamental parameters providing measurements in this Nuclear tone are:
a.   Alignment
b.   Pitch range.

Briefly, Alignment refers to the precise timing of peaks and valleys in the intonation contour with respect to their segmental/syllabic position. For example, a pitch peak (H) might be located at the offset of the main stressed vowel. Pitch range refers to the magnitude of a rise or a fall.

The Alignment parameter may elegantly account for intonational change from a fall to a rise (e.g. Bruce 1977, Dalton & Ni Chasaide 2005, Kristoffersen 2007). It has been a particularly successful way of accounting for the lexical accent[1] distinction in Scandinavian languages. Here, accent I in Stockholm Swedish contains a rise on the stressed syllable, where accent II contains a fall on the stressed syllable (Bruce 1977). In a falling contour, the peak (H) may be located within (or very close to) the main stressed syllable. The pitch will fall off afterwards. However, if we incrementally change the alignment of the peak, moving it rightwards, eventually we will have lower pitch on the main stressed syllable rising up to reach this peak.

The following figures aim to illustrate the possibility of a peak alignment change resulting in the change from a fall into a rise.

Figure 1 : The statement 'We arrived in a limo' spoken by a female speaker of Cambridge English (Grabe et al 2001). Notice the pitch peak at the onset of the stressed vowel and the fall in pitch afterwards. Also pay attention to the rise up to reach the peak. This is also relevant.

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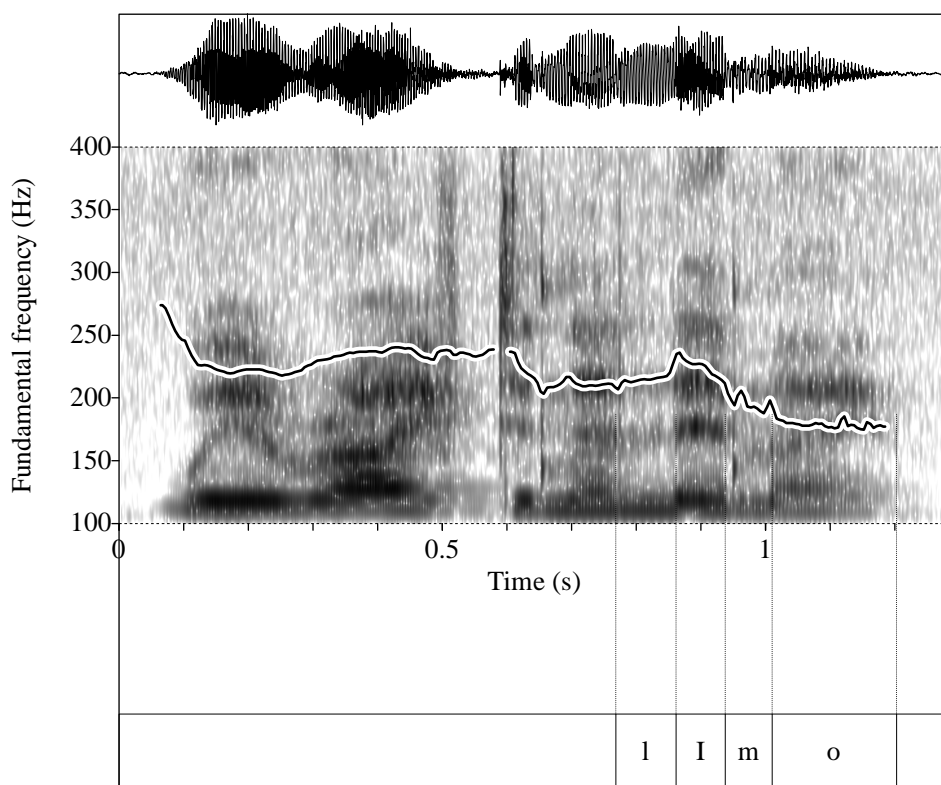
[1] By lexical accent, I mean a contrast in pitch at word level meaning, as opposed to intonation, in which the pitch contrast is at utterance level meaning.

Figure 2 : The same sentence spoken by a female speaker of Belfast English (Grabe et al 2001). Notice that the peak is further to the right, now at the onset of the following unstressed vowel.

Figure 3 : The same sentence again, in a particularly typical rendition from a different female Belfast English speaker. Notice that the peak is even further to the right, located within the final unstressed vowel. There is a clear rise from the stressed vowel onwards to reach this peak. It could be argued in cases like this that there is no longer any 'room' for a final fall.
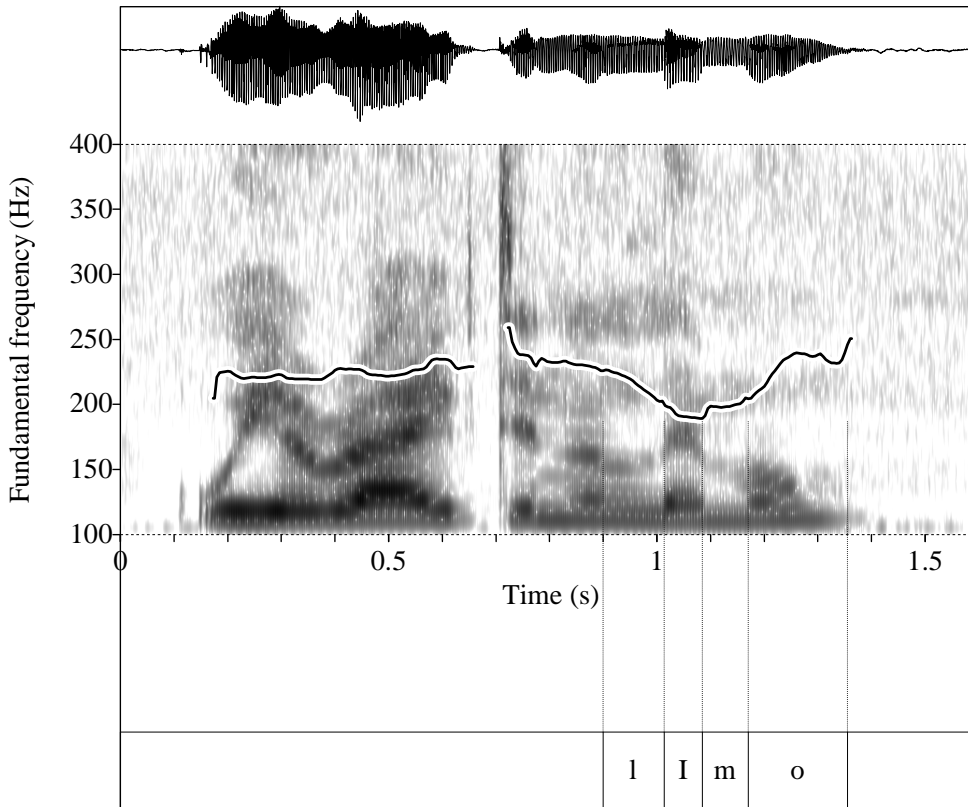
3   Intonational Change: Existing studies

Though the potential for sound change in intonation has only really begun to be explored in contrast to variation and change in segments (Gussenhoven 2004), the few studies that have been done include studies of a salient phenomenon in English. I wish to make an important distinction first between studies arguing for the *spread* of a particular change and those arguing for the *beginnings* of a change phonetically. In the English speaking world, the most well-known phenomenon of the spread of an intonational change is the spread of High Rising Terminals (HRTs) and 'Uptalk'.[2] These rises associated with statements as well as questions were argued to begin in young female working class speech in Australia and have since been noted more widely in Australia, New Zealand, the U.S., the Falklands, and the U.K (e.g. McGregor 2005, Shobrook & House 2003, Sudbury 2001, Warren 2005). They are associated with discourse meanings of 'casualness', 'uncertainty', and 'checking'.

There has also been a small amount of research arguing for intonational change in Language Contact situations. Particularly relevant to the present paper are the suggestions that the kind of statement rises found in Belfast English (not usually considered the same as HRTs (Cruttenden 1997)) may have come from the Irish language (e.g. Dalton & Ni Chasaide 2005). Despite some striking similarities in the intonation of the Northern dialect of Irish and Belfast English, there is actually

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[2] Some use these terms interchangeably. Others consider that they refer to subtly different phenomena.

very little concrete evidence that the Irish language was indeed the source of these rises. Other contexts in which contact-induced intonational change have been invoked include effects of Spanish on Basque (e.g. Hualde 2007) (fall changing into a rise through alignment change), and a suggestion that Italian speakers in Buenos Aires c.100 years ago influenced the intonation (peak alignment) of Buenos Aires Spanish (Colantoni & Gurlekian 2004).

4 Final statement rises in Belfast

The reason that the final statement rises in Belfast English are of interest is because of the expectation that *statements* should end with a *fall* and *questions* with *rises*. Though many counter examples are now known, this is still thought to be some kind of intonational universal (see Gussenhoven's (2004) Frequency Code). Therefore, the initial hypothesis is that Belfast statements *originally* contained final falls, but that these falls changed into some kind of 'rises' over time. A way of testing this is to posit a further hypothesis: that in such a case, Belfast statement 'rises' would still be more similar to statement *falls* than to question *rises*. Comparisons of the Alignment and Pitch range between statements and questions in the Nuclear tone provide a way of establishing phonetic similarity.

4.1 Data

The data analysed for the present paper comes from the Intonational Variation in English (IViE) corpus of English varieties (Grabe et al 2001). I focussed on two varieties: Belfast English and Cambridge English. I contrasted Belfast statement rises with Cambridge statement (rise)-falls, using data from the Read passage corpus (Cinderella story) and from the Read sentences corpus. I also compared Belfast statement rises, Belfast question rises, and Cambridge question rises using the Read sentences corpus. (There were not many questions in the Cinderella story). In the Read sentences, most of the Cambridge statements exhibited the phenomenon of downstep (see Ladd 2008), a complication which I did not wish to add to the analysis at present.
The number of utterances (IPs) analysed in both sentence types and English varieties is given below:

Table 2 : Numbers of utterances (IP)

	Read passage (Cinderella story)	**Read sentences**
Belfast statement rises	65 IPs (6 female, 2 male)	74 sentences (IPs) (6 male, 6 female)
Belfast question rises	0	92 sentences (IPs) (6 male, 6 female)
Cambridge statement (rise)-falls	67 IPs (6 female, 5 male)	0
Cambridge question rises	0	48 sentences (IPs)

I have also recently developed my own small corpus of Belfast English (and a few other varieties of English), which is being analysed currently. The experimental materials for this corpus were much more controlled and enabled me to get data much more consistently targeting my research questions. Therefore, I stress that the work I present here from the IViE corpus is still exploratory.

In the IViE data, I compared the Alignment and Pitch range of the pitch peak (H) and the preceding low point (L) on these statements and questions. This L and H form the rise *before* the main fall in the Cambridge statement (rise-)falls (see Figure 1 above) and form the main rise in Cambridge question rises and in all the Belfast rises.

5   Results

5.1 Alignment

I first compare the Alignment measurements for the peak (H). I defined H as the f0 maximum in the entire Nuclear tone. It was not always appropriate to use the f0 minimum for the definition of L. This is because the f0 minimum did not always mark the actual beginning of the rise. Often the f0 minimum was in the middle of a rather flat low section. Instead, I used a script which calculated the location of the beginning of the rise proper (see the notes to Welby's 'Elbow' scripts at http://www.ling.ohio-state.edu/~welby/praat.html)**.**

The mean Alignment measurements for L and H in both sentence types and English varieties are given below.

Table 2 : Mean Alignment measurements[3]

	Alignment L	**Alignment H**
Cambridge statement (rise)-falls	38 ms after onset of pre-stressed vowel (s.d. 72)	30 ms after onset of stressed vowel (s.d. 70)
Belfast statement rises	10 ms **after offset of stressed vowel** (s.d.48) (sentences list) 11 ms **after offset of stressed vowel** (s.d. 71) (Cinderella passage)	110 ms **after onset of post-stressed vowel** (s.d. 60) (sentences list) 101 ms (s.d. 53) **after onset of post-stressed vowel** (Cinderella passage)
Belfast question rises	19 ms **after offset of stressed vowel** (s.d. 40)	100 ms (s.d. 50) **after onset of post-stressed vowel**
Cambridge question rises	6 ms **before offset of stressed vowel** (s.d. 87)	94 ms **after onset of post-stressed vowel** (s.d. 118)

These Alignment results reveal in fact how similar the Alignment of L and H are between the Belfast statements and all of the question rises. By contrast, both L and H in the Cambridge statements occur much earlier. The L in the Cambridge statements is timed with the pre-stress vowel instead of the stressed vowel and the H in the Cambridge statements is timed with the stressed vowel instead of the post-stressed vowel. Confirming the similarity between the Belfast statement rises and the question rises is the finding that there were no significant differences in the alignment of H or of L between them.

Table 3 : One-Way ANOVA

One-Way ANOVA	Alignment of L	Alignment of H
Belfast statement rises, Belfast question rises, Cambridge question rises	$F(3, 252)$[4] $= 1.586$, n.s.	$F(3, 275) = 0.5831$, n.s.

Whereas I had indeed expected both L and H to be aligned later in the Belfast statement rises than in the Cambridge statement (rise)-falls, I had not expected the Belfast statement rises to be so closely

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[3] Note: some of the results presented here are also presented in Sullivan (Forthcoming).

[4] The reason the degrees of freedom are not the same in the Alignment of L as in the Alignment of H is as follows: in some IPs, there were errors in the extracted measurements for the Alignment of L but not for the Alignment of H and vice versa. A similar situation occurred in relation to the other measurements reported in this paper, which is why the degrees of freedom are again different in subsequent charts.

aligned with the questions. Later alignment of L and H in the Belfast statement rises is indeed expected under the hypothesis about historical change, but the *degree* of lateness goes against our hypothesis about phonetic similarity. The historical hypothesis posits that the H in Belfast has moved rightwards. However, the phonetic similarity hypothesis predicts that despite this movement, H should still be more similar in alignment to the H in a statement (rise)-fall. In alignment of both L and H, however, Belfast statement rises are clearly more similar to question rises than to statement (rise)-falls.

The reason I had expected the H, in particular, not to be as closely timed between the Belfast statement rises and the question rises is that previous reports distinguish the shape of statement rises and question rises. Belfast statement rises have been described as 'rise-plateaux-(slumps)' where the H is followed by a levelling off of pitch and sometimes a slight fall. Question rises have been described as having pitch which rises until the end of the utterance (see Cruttenden 1997, Grabe 2002, Ladd 2008). However, in the current study, all target stressed words were disyllabic with initial stress. One following post-stress syllable may not be enough to ascertain whether there really is a difference between statement rises and question rises in this way. My new experiment contained materials specially designed to tackle this problem.

5.2 Pitch range

The height of L and H was measured using the ERB scale. This scale comes closer to capturing perception than the Hertz (Hz) scale and is more appropriate when comparing males and females (Glasberg & Moore 1990, Ladd 2008). Subtracting the height of L from the height of H in each utterance gave the pitch range of the rise in that utterance.
The table below gives the mean pitch range of the rise in both sentence types and language varieties.

Table 4 : Mean pitch range values

Means: ERB	Pitch range between L and H
Cambridge statement (rise)-falls	0.715 (s.d. 0.576)
Belfast statement rises	0.757 (s.d. 0.541) (Sentences list) 0.597 (s.d. 0.401) (Cinderella passage)
Belfast question rises	0.887 (s.d. 0.611)
Cambridge question rises	1.128 (s.d. 0.575)

This table shows that the greatest pitch range was in the Cambridge questions, followed by the Belfast questions, Belfast statements (Sentences list), Cambridge statements and Belfast statements (Cinderella passage).

The question we may ask then is whether there is a systematic difference in pitch range of the rise between these sentence types and English varieties. The answer is yes.

Table 5 : One-way ANOVA

One-Way ANOVA	Pitch range of rise
Cambridge statement (rise)-falls, Belfast statement rises, Belfast question rises, Cambridge question rises	F (284, 4)=6.1894, p<0.001

Table 6 : Post-hoc tests

Post-hoc t tests (Bonferroni corrected)	Pitch range of rise
Cambridge statements vs. Cambridge questions	t -3.2046, p<0.05
Cambridge statements vs. Belfast questions	t -1.5351, n.s.
Cambridge statements vs. Belfast statements	t -0.3858, n.s. (sentences) t = 1.1373, n.s. (passage)
Cambridge questions vs. Belfast questions	t 2.0832, n.s.
Cambridge questions vs. Belfast statements	t -3.2877, p<0.01 (sentences) t -4.9319, p<0.001 (passage)
Belfast questions vs. Belfast statements	t -1.3949, n.s. (sentences) t -3.3399, p <0.05 (passage)
Belfast statements (passage) vs. Belfast statements (sentences)	t 1.9293, n.s.

The post-hoc tests show that the primary distinction here is between statements and questions, particularly in relation to the Cambridge questions. They have a wider pitch range than the Cambridge statements and the Belfast statements, but not the Belfast questions. This is not surprising. Questions have been associated with greater pitch range than corresponding statements (e.g. Yuan et al 2002, Grabe 2002). Greater pitch range or increased height of H in questions has often been thought of as an intonational universal (e.g. Gussenhoven 2004).

The Cambridge statements do not have a significantly different pitch range from the Belfast statements. This at first looks like support for the view that the Belfast statement 'rise' may have derived from a statement 'fall' like those found in Cambridge English. A small amount of existing work suggests that change to the height of the intonation contour may be less likely than alignment change. For example, Bruce (1977) argues that there is an Alignment difference between Swedish Word accent I and II, but that the height of the L and H points is equivalent between the two accents. Therefore, the similar pitch range between the Belfast and Cambridge statements might be an indicator of a shared origin between them, despite the large alignment differences.

The Belfast questions do not have an unambiguously greater pitch range than the Belfast statements, though. The similarity between the Belfast statements and Belfast questions along the parameters of alignment and pitch range would indicate that whatever the source of the Belfast statement 'rises', they may be part of a unified phenomenon with Belfast questions. Both Belfast statements and Belfast questions tend to jump down in pitch onto the stressed syllable, whereas neither of the Cambridge contours display this.

Could Belfast statements and questions both be conversions from question rises in a more standard English variety, with a change involving reduction of pitch range? If pitch height is less liable to change than alignment, then a reduction in pitch range would not seem fairly plausible.

6   Comparison with High Rising Terminals (HRTs)

We are now in a position to make some tentative comparisons between these intonation contours from Belfast and Cambridge English with existing work done on HRTs (see Section 3 above). Warren (2005) found a systematic difference between New Zealand statement HRTs and question HRTs. The former tend to begin after the accented syllable, whereas the latter begin on the accented syllable. Such a difference between statements and questions was not found in relation to the Belfast

rises. The primary difference between the New Zealand HRTs and the Belfast rises is probably to do with the height of H, with the H being much higher in New Zealand. Therefore, the New Zealand HRTs might be more similar to the Cambridge question rises in this respect. It is very difficult to make comparisons with Shobbrook & House's (2003) study of British English HRTs, but it would appear that they too contain higher height of H than is found in Belfast. The discourse meanings of 'uncertainty' and 'checking' that have been associated with HRT statements may also be associated with questions generally. So the height of H in HRT statements may indeed be a sign that they have derived from some kind of question, as higher H/greater pitch range is associated with questions.

7   Theorising on intonational change

The analysis of the IViE data from Belfast and Cambridge English did not reveal Belfast statement rises as phonetically similar along the parameter of Alignment to the Cambridge statement (rise)-falls. Belfast statements and Cambridge statements were similar in Pitch range, though. If phonetic similarity is a strong indicator of the origin of these 'rises', then it is not entirely clear at present that the Belfast statements 'rises' derived from a statement (rise)-fall such as is found in Cambridge English. Overall, Belfast statements were more phonetically similar to question rises. Belfast statements were particularly similar to Belfast questions but the statements had a noticeably lower pitch range than the Cambridge question rises. Therefore, this data analysis has not given clear support to my initial hypothesis that Belfast statement 'rises' would be more similar to Cambridge statement '(rise)-falls' than to question 'rises'. An empirical approach is not the only way of approaching the problem of the origin of the Belfast statement 'rises', however.

Returning to the possibility that the Belfast statement 'rises' may have changed over time from (rise-falls), I have developed 3 theoretical proposals to try to build up a plausible account of how this could have happened. The first of these invokes the notion of rightward peak drift from the stressed syllable onto following unstressed syllables. This is an extremely common process in intonation (e.g. Dalton & Ní Chasaide 2005). This rightward peak movement is exactly the process outlined in Figure 1-3 above.

The second proposal involves the notion that rightward peak movement would target certain syllabic locations for articulatory coordination and/or perceptual ease. For example, recent work by Mücke et al (2009) shows that intonational peaks can be very closely coordinated with articulatory gestures in German as well as with acoustic landmarks (e.g. onset/offset of stressed vowel). Similarities between the acoustic alignment of the German nuclear peaks and the L in the Belfast data lead to the possibility that the Belfast L is coordinating with the same articulatory gesture (maximum closure of the consonant following the stressed vowel) as the German H. Targeting these favoured points might trigger phonological reorganisation. The H may have moved too far beyond the stressed syllable to be associated with it. Therefore, L moves onto the stressed syllable. L associated with a stressed syllable may need to form more of a level stretch or a dip down in pitch in order to be perceived (e.g. Dilley 2005). This would account the alignment of L and H in the Belfast rises as being as late as they are. Further, the very late alignment of the L may push the H tone even later in order to maximise perceptual distinctiveness between them. Tones spacing themselves apart for this reason is attested elsewhere (e.g. Arvaniti et al 2006). This is also somewhat akin to vowel chain shifts, whereby a change in one vowel may result in other changes in the vowel system to maintain perceptual distinctiveness.

This possibility that the new location of the L might affect the location of the H can be tested to some degree though. This would predict that the later the L tone is aligned, the later the H target should be aligned. Correlation tests can shed some light on this.

Table 7 : Correlation tests

Correlation between alignment of L and alignment of H	
Belfast statements (passage)	Pearson product-moment correlation: *t* 1.1858, d.f. 59, n.s.
	Spearman's rank correlation rho: *S* 35117.89, n.s.
Belfast statements (sentences)	Pearson product-moment correlation: *t* 1.8517, d.f. 70, n.s.
	Spearman's rank correlation rho: *S* 33451.61, p<0.001

The correlation results did not show an unambiguous pattern across the Belfast passage and sentences data. The non-parametric Spearman correlation did show a significant (positive) correlation in the sentences data. Therefore, we have some indication that a later alignment of L may be accompanied by a later alignment of H, in line with my theoretical proposal. However, it is not conclusive at present. This, among many other issues, needs much greater testing with a new data set.

8 New directions

I have since conducted a new experiment with female speakers of Belfast English. The experimental materials were designed to study the Alignment and Pitch range of Belfast rises in a much more comprehensive way than was possible with the IViE data. However, I have also expanded the type of phonetic measurements to include intensity measurements as well as pitch/f0 measurements. This increases the range of parameters along which I may determine phonetic similarity between rises and falls. Further, the new experiment also involved speakers of Glasgow English to enable direct comparison between Belfast and Glasgow. Glasgow English has also been reported as exhibiting statement 'rises' like those found in Belfast, yet these two varieties have never been formally compared with each other. Early results from the new experiment indicate a clear difference between Glasgow and Belfast English. The alignment of L and H in Glasgow 'rises' indicates that they may indeed have derived from falls. For the Belfast 'rises', the alignment results show more support for a new hypothesis. Rises are not just associated with questions but also with the discourse meaning of 'Continuation'. The new hypothesis is that Belfast statement 'rises' have derived from Continuation rises rather than from statement falls or from question rises. Another direction to my work involves accessing archive data from Belfast English, and I have already begun pursuing such data at the National Folklore Collection at University College Dublin.

9 Conclusions

In this paper, I presented an approach to studying intonational change empirically. This approach involved phonetic comparisons between statements and questions in Belfast and Cambridge English. The primary research question concerned the phenomenon of Nuclear rises on statements in Belfast English. I hypothesised that these statement 'rises' had changed from (rise)-falls and thus might be more phonetically similar to statement (rise)-falls than to question rises. However, the results did not strongly support this hypothesis. On balance, Belfast statement rises were more phonetically similar to question rises, particularly Belfast question rises.

Separately, I outlined theoretical proposals on how a (rise)-fall could change into a rise and how the modifications involved here might explain the large phonetic differences between the Cambridge statement (rise)-fall and the Belfast statement rise. However, the small amount of testing I was able to do on these proposals did not clearly link the Belfast statement 'rise' within this potential path of change. Therefore, the origin of the Belfast statement 'rise' is still uncertain, but the new directions I am now following (section 8 above) may be able to provide some answers that the present paper was

unable to do. Nevertheless, isolating the similarities and differences between statement (rise)-falls, statement 'rises', and question rises is an important line of research in itself. I would also like to emphasise my belief that exploring intonational change is a valid enterprise and I would like to follow others like Hualde (2007) who argue that we need to under variability in present varieties in order to make progress here. By understanding this variability better we may be able to assess which elements of intonation are prone to change and which are likely to remain constant.

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