

**THE SEMANTICS OF COMPARATIVES:
A DEGREE NOMINAL ANALYSIS**

by
Nimer Abusalim

A Dissertation submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Linguistics

Fall 2016

© 2016 Nimer Abusalim
All Rights Reserved

**THE SEMANTICS OF COMPARATIVES:
A DEGREE NOMINAL ANALYSIS**

by

Nimer Abusalim

Approved: _____
Benjamin Bruening, Ph.D.
Chair of the Department of Linguistics and Cognitive Science

Approved: _____
George H. Watson, Ph.D.
Dean of the College of Arts and Sciences

Approved: _____
Ann L. Ardis, Ph.D.
Senior Vice Provost for Graduate and Professional Education

I certify that I have read this Dissertation and that in my opinion it meets the academic and professional standard required by the University as a Dissertation for the degree of Doctor of Philosophy.

Signed: _____

Satoshi Tomioka, Ph.D.
Professor in charge of Dissertation

I certify that I have read this Dissertation and that in my opinion it meets the academic and professional standard required by the University as a Dissertation for the degree of Doctor of Philosophy.

Signed: _____

Gabriella Hermon, Ph.D.
Member of Dissertation committee

I certify that I have read this Dissertation and that in my opinion it meets the academic and professional standard required by the University as a Dissertation for the degree of Doctor of Philosophy.

Signed: _____

Peter Cole, Ph.D.
Member of Dissertation committee

I certify that I have read this Dissertation and that in my opinion it meets the academic and professional standard required by the University as a Dissertation for the degree of Doctor of Philosophy.

Signed: _____

Toshiko Oda, Ph.D.
Member of Dissertation committee

DEDICATION

This dissertation and Ph.D. is dedicated to my dear mother and father. Although it is nowhere near enough to repay you, this is for you. From zero on the clocks exam to a Ph.D., that's because of you. You believed in me, supported me, and put my success before your own peace of mind. The struggles you went through to make of me a success is unbelievable. I can only hope that one day I can be as strong and as loving as you. Although you never asked for a 'thank you', Thank You.

To my one and only shining princess, my wife, my life, you are the blessing that put me back on track to success. It must have been very difficult for you to leave your home and family and accompany me abroad. Nevertheless, you stood by me all the way and hid your own pains to keep me focused. Words cannot express my love and appreciation for you.

To my beautiful, now 5 days old, baby girl, Teba, you have given me a new purpose and a new engine to keep me running. For you, Teba, I leave the rest of this page empty for you to fill with your own dreams...

ACKNOWLEDGEMENTS

I would like to express my utmost respect and deepest appreciation for my advisor Prof. Satoshi Tomioka. It was your guidance and belief in me that made this dissertation possible. I only wish that one day I can be the semanticist that you are and be as patient with my students as you have been with me; you must have read my work over 100 times. Our discussions during meetings slowly but surely lead to the perfection of the ideas put forth in this work. Thank you for believing in me. I will always be your faithful student.

To my professors and colleagues at the University of Delaware's Department of Linguistics and Cognitive Science, please allow me to express my gratitude for all of the support that you provided me over the years. In particular, I would like to thank my committee members Prof. Gaby Hermon, Prof. Peter Cole, and Prof. Toshiko Oda for their insightful feedback on my dissertation. I would like to express my special appreciation and respect for Prof. Gaby Hermon. For some reason, I always felt that you treated me as a son; always pushing me to do better, believing that I can, and having my back when the going gets tough. Thank you Prof. Gaby for your guidance and support over the years. Many thanks are due to Prof. Peter Cole and Prof. Toshiko Oda for their understanding and professional opinions regarding my work.

I also would like to express my deepest appreciation for my home sponsoring university, the University of Jordan, and the Department of English Language and Literature for their financial support, which made my Ph.D. studies possible.

TABLE OF CONTENTS

ABSTRACT	x
Chapter	
1 INTRODUCTION	1
1.1 The Building Blocks of Comparatives	1
1.1.1 Semantic Constituency of Comparatives	2
1.1.1.1 Semantic Components of Comparatives	2
1.1.1.2 The Standard Marker	4
1.1.1.3 Constituency and the Standard Marker in JA Comparatives	5
1.1.2 The Morphology of Comparatives	7
1.1.2.1 Degree Morphology Cross-linguistically	7
1.1.2.2 Degree Morphology in JA Comparatives	7
1.1.3 Agreement in the JA & MSA Adjectival System	10
1.2 Identifying Parameters of Cross-linguistic Variation	12
1.3 Research Problems & Methodology	16
1.3.1 Identifying the Problems	16
1.3.2 A path of Investigation	21
1.4 Summary	22
2 SURFACE PHRASAL COMPARATIVES	25
2.1 Ruling Out a Contextual Analysis	25
2.1.1 Variation in Interpretation	29

2.1.2	Island Sensitivity	30
2.1.3	Additional Evidence	31
2.1.4	Summary	34
2.2	The Underlying Form of the Complement of <i>min</i>	34
2.2.1	Defining and Applying Diagnostics	34
2.2.1.1	Selectional Properties of ‘min’ and Case Assignment	34
2.2.1.2	Binding of Reflexives	37
2.2.2	The Syntactic Structure of the <i>min</i> -XP	39
2.3	The Syntactic Structure of the Matrix Clause	40
2.3.1	The Deg-Headed Structure	41
2.3.2	The Classical Structure	47
2.3.2.1	The Basic Idea and Some Advantages	47
2.3.2.2	The Classical Architecture Applied to JA	50
2.4	Summary	56
3	<i>illi</i>-TYPE COMPARATIVES	58
3.1	The <i>illi</i> -Type Comparatives Data	60
3.1.1	Lack of Negative Island Effects	60
3.1.2	Lack of Subcomparatives	63
3.1.3	Variation in Acceptability Judgments	66
3.1.4	Summary of <i>illi</i> -Type Comparatives Data	69
3.2	The Syntax of the <i>illi</i> -Comparative Complement of <i>min</i>	70
3.3	Further Notes	77
3.4	The Semantic Composition of <i>illi</i> -type Comparatives	80
3.5	Summary	83
4	<i>ma</i>-TYPE COMPARATIVES	85
4.1	Some Puzzles Concerning <i>ma</i> Comparatives	85
4.2	Two Types of <i>ma</i> Comparatives and Terminology	92

4.3	The Adjectival Reading	94
4.3.1	The Syntax of Free Relative <i>ma</i> Comparatives	94
4.3.2	Data and Analysis of Free Relative <i>ma</i> Comparatives	98
4.3.3	The Semantics of Free Relative <i>ma</i> Comparatives	102
4.4	The Adverbial Reading	104
4.4.1	Distinguishing Degree <i>ma</i> from FR <i>ma</i> Comparatives	105
4.4.1.1	Adverbial vs Adjectival Gradable Predicates	105
4.4.1.2	The Matrix Clause Syntax as Another Distinguishing Factor	106
4.4.2	Puzzling Data of a Contrast in Grammaticality	110
4.4.3	Applying the Semantic Tests to Degree <i>ma</i> -Comparatives	112
4.4.3.1	Existence of Negative Island Effects	113
4.4.3.2	Lack of Subcomparatives	115
4.4.4	Summary	119
4.5	A Hidden Degree Nominal Analysis (Sudo, 2009)	120
4.6	Tying Up Loose Ends	129
4.6.1	Revisiting Subcomparatives and Negative Island Effects	129
4.6.2	The Selectional Properties of the Preposition <i>min</i>	131
4.7	Summary	135
5	CONCLUSIONS AND FUTURE RESEARCH	138
5.1	Research Summary and JA Specific Conclusions	139
5.2	General Theoretical Conclusions	142
5.2.1	Suggestions for Future Research on Other Languages	142
5.2.2	Suggestions for Future Research within JA	145
5.2.2.1	Difference Comparison, Overt Measure Phrases and Degree Questions	147
5.2.2.2	<i>too</i> -Excessive and <i>as Adjective as</i> Constructions	151
5.3	Summary	152

BIBLIOGRAPHY **154**

ABSTRACT

This dissertation focuses on comparative constructions in Jordanian Arabic. In particular, we identify three main types of comparatives. We investigate commonly raised questions in the literature on the semantics of comparatives. Specifically, we examine the underlying structure of JA comparatives and what that might entail for the semantic type of the SOC for each type of comparative, and investigate to what extent degree abstraction and a degree based semantics may be available for JA comparatives. The three main types of comparatives investigated differed with respect to the semantic tests of Negative Island Effects and the availability of Subcomparatives. This research concludes that JA is a language that only allows for underlyingly phrasal comparatives, but that crucially is not degree-less in that one type (the Degree *ma* comparative type) makes use of Degree Nominal constructions. The result is a language that does not have underlyingly clausal comparatives, but that still allows for degree to be manifest by means of Degree Nominals. We attribute the main difference between the strategy used to manifest degree between English and JA to the selectional properties of the JA preposition *min* which acts as the semantic Standard Marker in the language.

Chapter 1

INTRODUCTION

Research into comparative constructions has been a central topic in the linguistics arena (Ullmann (1972); Wheeler (1972); Cresswell (1977); Von Stechow (1984); Stassen (1985); Heim (1985); Kennedy (1997); Heim (2001); Von Stechow and Heim (2002); Beck et al. (2004); McNabb and Kennedy (2009), among others). Intra-linguistic and cross-linguistic research is necessary to contribute to an overall understanding of comparatives in natural language. This research intends to add to the existing body of literature by investigating comparative constructions in Jordanian Arabic (JA), which is one dialect of colloquial Arabic spoken in Jordan, and is one member of the Levant Arabic language group spoken in the Levant States of the Middle-East. Interest in research into this dialect not only stems from the fact that it is practically untouched with regards to studies of the semantics of comparatives, but that it is the dialect spoken by the researcher himself.¹ The first section in this chapter will introduce key terminology and issues related to universal features of comparatives. Section (1.2) will introduce the ‘Standard’ Analysis of comparatives as a means to derive from it a path of investigation. Finally, section 1.3 will define the scope of the research problems and identify a path of investigation.

1.1 The Building Blocks of Comparatives

This section introduces the topic of comparative constructions from a cross-linguistic perspective. It is intended to establish some key terminology necessary to follow the arguments presented in this research. We will discuss the Semantic Constituency of comparatives

¹ McNabb and Kennedy (2009) discuss comparatives in Palestinian Arabic but do not focus on the issues at hand in this research.

in section 1.1.1, the Morphology of Comparatives in section 1.1.2, and finally the Adjectival and Agreement system in JA in section 1.1.3.

1.1.1 Semantic Constituency of Comparatives

1.1.1.1 Semantic Components of Comparatives

A *comparative construction*, according to Stassen's (1985: 24) definition of a comparative is defined as follows.

- (1) A construction in natural language counts as a comparative construction if that construction has the semantic function of assigning a graded (i.e. non-identical) position on a predicative scale to two (possibly complex) objects.

(Stassen 1985: 24)

A *Gradable Predicates (GP)* is the main building block of comparatives. As the name suggests, Gradable Predicates are those predicates that exhibit the necessary property of gradability that any comparative requires. Adjectives are the most commonly studied types of gradable predicates. Take, for example, the adjectives 'dead' and 'tall'. The most evident difference between the two is that 'tall' can be used in a comparative fashion, since it has a gradable property (i.e. a property that can be measured on a scale in comparison with other entities that possess a certain degree of that property). 'Dead', on the other hand, cannot be used comparatively. There is no sense in saying one person is *more dead* than the other, but someone can be *taller* than the other. Kennedy (2007) suggests the following about the universal semantics of gradable predicates.

- (2) Gradable predicates map objects onto abstract representations of measurement (SCALES) formalized as sets of values (DEGREES) ordered along some dimension (HEIGHT, LENGTH, WEIGHT, etc.).

Cross-linguistically, comparative constructions are mainly made up of five major semantic constituents. Ultan (1972) identifies the following semantic constituents:

(3) Semantic Constituents of Comparatives

- a. the item that is compared with or against some standard of comparison
- b. the standard of comparison against which (3a) is compared
- c. the quality or quantity in terms of which (3a) is compared with (3b)
- d. the standard marker, which is in constituency with (3b), marks the relationship between (3b) and (3c).
- e. the degree marker, which is in constituency with (3c), marks the degree of presence or absence of (3c) in (3a) with respect to a given (implicit) value of (3c) in (3b).

According to [Ultan \(1972\)](#) only the first three of these constituents are obligatory. [Kennedy \(2005\)](#) illustrates the semantic components of comparative constructions as follows.

- (4) kim (is) tall -er than
 Target of comparison Gradable Adjective Degree Marker Standard Marker
 Lee.
 Standard of Comparison

I will adopt the terminology in (4), as used in [Kennedy \(2005\)](#), throughout this research. In what follows, I will *syntactically* refer to the Standard of Comparison (SOC) as the ‘complement of *than*’. The term ‘complement of *than*’ will be used for all languages except JA, regardless of whether there is a Standard Marker apparent. I will refer to the constituent made up of the complement of *than* plus *than* itself as the *than-XP*, as illustrated in (5).

- (5) John ate more biscuits $\overbrace{\text{than Mary did}}^{\text{than-XP}}$
 $\underbrace{\hspace{10em}}$
Complement of **than**

1.1.1.2 The Standard Marker

Languages differ in the linguistic strategies used for conveying the comparative. The Standard Marker may vary in form cross-linguistically. In particular, [Kennedy \(2005\)](#) suggests three major classifications, only the first of which is our concern here (see [Kennedy \(2005\)](#) for further details).

(6) Methods of Conveying the Comparative

- a. Particle Comparatives
- b. *Exceed* Comparatives
- c. Conjoined Comparatives

The strategy that both English and JA utilize is the *Particle* Comparative Strategy. In this strategy, the Standard Marker is a pre-/post-positional morpheme which may potentially have the semantic meaning of a directional morpheme, independent of the comparative construction. ([Kennedy, 2005](#)) There are four basic types of the Standard Marker, accordingly.

(7) ([Kennedy, 2005](#))

- a. *Separative* (Standard marker is a morpheme roughly meaning ‘from’)

Nihoongo-wa doitsgo **yor**i muzukashi
Japanese-TOP German from difficult

‘Japanese is more difficult than German.’

Japanese

- b. *Allative* (Standard marker is a morpheme roughly meaning ‘to’)

sapuk ol-kondi **to** l-kibulekeny
is-big the-deer to the-waterbuck

‘The deer is bigger than the waterbuck.’

Maasai

- c. *Locative* (Standard marker is a morpheme roughly meaning ‘on’)

A ka gya ni **ma**
He is big me on

‘He is bigger than me.’

Mandinka

d. *Than* (Standard of comparison is marked by the comparative particle)

i. John is taller **than** Mary. English

ii. Istvan magasa-bb **mint** Peter
 Istvan tall-prt than Peter
 ‘Istvan is taller than Peter.’ Hungarian

1.1.1.3 Constituency and the Standard Marker in JA Comparatives

As we were discussing above, every language has the ability to express ordering relations among objects based on the degree to which those objects possess or lack a certain property. JA is certainly one of those languages. Let us look at the basics of comparatives in JA. This will facilitate our understanding of the research problems.

Semantically, comparatives in JA have all five Constituents of Comparative Constructions: Target of Comparison > Gradable Adjective (GA)² > Degree Marker > Standard Marker > Standard of Comparison.³

(8)

Target of Comparison	Gradable Adjective + Degree Marker	Standard Marker	Standard of Comparison
NP	V R B + a-a-	<i>min</i> ‘from’	Sarah
Ali	T w l ‘of height’ + ‘-er’	<i>min</i> ‘from’	Sarah
Ali	<i>aTwal</i> ‘taller’	<i>min</i> ‘from’	Sarah
‘Ali is taller than Sarah’			

² Only the Gradable Adjective can be used for comparison. In some languages, like Hebrew for instance, the simple adjective form is acceptable as a gradable adjective (Personal Communication with Gaby Hermon), but in Arabic in general and JA in particular, a Gradable Adjective bearing the morphology of the comparative morpheme ‘-a-a’ is acceptable, unless a periphrastic form must be used (see section 1.1.2 for details).

³ Only the Gradable Adjective is acceptable after *min* in Comparatives. The *positive* Adjectival form is not acceptable for comparatives.

Notice that the Standard Marker is a morpheme roughly meaning ‘from’, meaning that, like Japanese, JA is of the *Particle* Comparatives type (see section 1.1.1.2 above), and more specifically *Separative*, for its use of the preposition ‘from’ as its semantic Standard Marker. (9) below illustrates basic examples of JA comparatives and (10) illustrates the use of *min* as a preposition meaning ‘from’ in non-comparative constructions.⁴

- (9) a. Ali aTwal min Rami
 Ali taller from Rami
 ‘Ali is taller than Rami.’
- b. il-Qamar abrad min il-ʔarD
 def.moon colder from def.Earth
 ‘The moon is colder than the Earth.’
- (10) a. il-sayyara mostawradeh **min** il-yabbaan
 def.car imported from def.Japan
 ‘The car is imported from Japan.’
- b. **min** weyn ishtareit il-baskaleit?
 from where bought def.bicycle
 ‘From where did you buy the bicycle?’

I will, henceforth, refer to the JA complement of *than* as the ‘complement of *min*’, and to the constituent including *min* and the complement of *min* as the ‘*min*-XP’, as illustrated in (11b).

- (11) a. Ali aTwal min Sarah
 Ali taller from Sarah
 ‘Ali is taller than Sarah.’
- b. Ali aTwal $\overbrace{\text{min Sarah}}^{\text{min-XP}}$
 Complement of **min**

⁴ For space considerations, I will include information about gender, number, and person agreement in the glosses **only** when they may affect the understanding of the issue at hand.

1.1.2 The Morphology of Comparatives

1.1.2.1 Degree Morphology Cross-linguistically

English GAs have a designated morphological marking for comparative use; namely the morpheme *-er*. Take, for instance, the word ‘tall’. In its comparative use, the morpheme *-er* signals that the word ‘tall’ is being used comparatively. The outcome would be the word ‘taller’ with degree morphology overtly manifested. Not all languages overtly manifest degree morphology, though. Japanese is one case in point. We can see the lack of degree morphology in the following basic examples of comparatives in Japanese.

- (12) a. Nihongo.wa doitsgo yori **muzukashi**.
Japanese.TOP German *yor*i difficult
‘Japanese is more difficult than German.’
- b. Taroo.wa Hanako yori **takusan(-no)** hon-o katta.
Taroo.TOP Hanako *yor*i many(.GEN) book.ACC bought
‘Taroo bought more books than Hanako.’

There are two main differences between the Japanese examples and the English examples. We have already discussed the first difference in the previous section; namely that Japanese does not have a word similar to English ‘than’ which is used only for comparatives. Japanese uses the word *yor*i which is normally used as a preposition meaning ‘from’. But the other difference we are interested in is that, Japanese does not utilize any morphology designated for the comparative. English ‘tall’, for example, becomes ‘tall-er’ when combined with the comparative morpheme *-er*, but Japanese lacks such morphological designation. In the next section, we will see that JA falls somewhere in the middle between English and Japanese with respect to the Standard Marker used and the manifestation of degree morphology.

1.1.2.2 Degree Morphology in JA Comparatives

We mentioned in the previous section that JA is like Japanese in its use of the preposition meaning ‘from’ as the semantic Standard Marker. However, unlike Japanese, JA **does** manifest degree morphology. Instead of a suffix (*-er*), like English, JA uses a *pattern* to designate degree morphology. JA and MSA Adjectives, Nouns and Verbs are made up of a combination of a *root* and a *pattern*.

- (13) a. **Root:** a root is a relatively invariable discontinuous bound morpheme, represented by two to five phonemes, typically three consonants in a certain order, which interlocks with a pattern to form a stem and which has lexical meaning. (Ryding, 2005)
- b. **Pattern:** a pattern is a bound, and in many cases, discontinuous morpheme consisting of one or more vowels and slots for root phonemes (radicals), which either alone or in combination with one to three derivational affixes, interlocks with a root to form a stem, and which generally has grammatical meaning. (Ryding, 2005)

Neither roots nor patterns can stand alone. They must be combined together to form words. A very well-known example of a root is the tri-consonantal root [k t b] which conveys the lexical meanings of ‘to write, book, book store, library, person who writes, etc.’ When roots and patterns are discussed in Arabic Grammars, place holders are used to refer to the roots. For example, [k t b] can be said to contain three consonants ([C C C]). In the Arabic literature, the consonants used to form the word *fiʔil* ‘verb’ are used as place holders. In English, for example, (only for illustrative purposes) if one wishes to divide the word ‘verb’ into consonants/root and vowels/patterns, we come up with [V R B] as a root and [e] as a pattern. For convenience, I will use [V R B] to stand for the place holders of consonantal roots in Arabic.

Combined together, roots and **patterns** form words that have both lexical and grammatical meaning which follow the following formula: root [V R B] + pattern = word.

- (14) a. Root [k t b] + pattern [a-a-] = [katab] ‘he wrote’ (V. Past Tense Active Voice)
- b. Root [k t b] + pattern [aa-a] = [kaatib] ‘a writer’ (N.)
- c. Root [k t b] + pattern [u-i] = [kutib] ‘has/have been written’ (V. Passive Voice)

Our concern here is with the pattern designated for the Elative (comparative) adjectives. The elative adjective makes use of the diptote pattern which is used for the comparative state of the adjective [a-VR-a-B]. The pattern ‘a-a-’ corresponds to the English comparative morpheme/degree marker *-er*, as the following examples illustrate.⁵

⁵ As a reminder, in table (15), V R B is not to be taken as meaning that there can only be a verbal root for the gradable adjective. It is only to be taken as place holders for consonantal roots as in C C C, instead of V

(15)

Root	Comparative Pattern	Comparative Adjective	Non-Gradable/Simple Adjective
V R B	a-VR-a-B	aVRaB	V R B + -a-e/i-
H s n	a-Hs-a-n	aHsan 'better'	mleeH
b r d	a-br-a-d	abrad 'colder'	barid
T w l	a-Tw-a-l	aTwal 'taller'	Taweel/Tweel

In some cases, a *Periphrastic* comparative (like, say, *more beautiful*) must be used. Color words in JA, for example, like *?Hmar* 'red' and certain words such as those with four or five initial root phonemes (see [Ryding \(2005\)](#) for more details) have the comparative pattern as part of their original make up, although they are not comparative. JA handles cases like these just as English handles such cases of adjectives that cannot take the -er comparative morpheme, such as 'expensive'. English uses 'more' in 'This book is *more* expensive than that one.' Likewise, the most common method used in JA for the periphrastic comparative means exactly that; it is *akthar* 'more'/'most'.⁶ The following are examples of periphrastic uses of the positive comparatives.

- (16) a. * Eating healthy food is **natural-er** than taking vitamin supplements.
b. Eating healthy food is **more natural** than taking vitamin supplements.

R B, for example. The use of V R B is only to follow common practice in Arabic Grammars to refer to the consonantal root with the same consonants that are used to make up the word for 'verb' in Arabic. Gradable adjective are not to be taken as having verbal, adjectival or any kind of derivational root. They are, as we can see, independent in that they are formed of a root of consonants that are still undefined for class. Addition of the comparative gradable adjective morpheme a-a- to a consonantal root results in an adjective that has comparative or gradable properties.

⁶ Word order distinguishes the intended meaning of *akthar* being either 'more' or 'most'. The word *akthar* as meaning 'more' *follows* the adjective it modifies, whereas the *akthar* meaning 'most' corresponds to the superlative and is followed by an indefinite noun followed by the adjective.

- (17) a. il-ʔkil il-SiHy **Tabeeʕi akthar** /*aTbaʕ min il-vitameenaat
 def.food def.healthy natural more /natural-er from def.vitamins
 ‘Healthy food is more natural than vitamins.’
- b. Ali **mashyuul akthar** /*ashyal min Sarah
 Ali busy more /busier from Sarah
 ‘Ali is busier than Sarah.’

1.1.3 Agreement in the JA & MSA Adjectival System

In Modern Standard Arabic (MSA), a distinction could be made between two types of adjectives based on agreement properties: the *positive*⁷ adjective and the *comparative* adjective. The *positive* adjective (the adjectival form that is not comparative, such as *Taweel* ‘tall’ instead of *aTwal* ‘taller’) usually follows the noun and agrees with it in definiteness, number, gender, and case. Some examples are illustrated below.

- (18) a. shaab-u-n Taweel-u-n
 boy.NOM.Indef tall.NOM.Indef
 ‘A tall boy’
- b. al-shaab-u al-Taweel-u
 def.boy.NOM def.tall.NOM
 ‘The tall boy’
- c. shajar-at-u-n Taweel-at-u-n
 tree.FEM.Indef.NOM tall.FEM.PL..Indef.NOM
 ‘A tall tree’
- d. ashjaar-u-n Tiwaal
 tree.PL.Indef.NOM tall.PL.Indef.NOM
 ‘Tall trees’

The Comparative Adjective, on the other hand, does not display any gender, number, or case agreement with the noun it modifies.

⁷ The term *Positive* Adjective is not to be understood as some type of adjective specific to JA. *Positive* is a term used in the literature on the semantics of comparatives to mean the adjective that is not in comparative form. The word ‘tall’ is a *positive* adjective, but ‘taller’ is a *comparative* adjective.

- (19) a. shaab-u-n **aTwala** min al-baabi
 boy.NOM.Indef tall.comp from def.door.ACC
 ‘A boy taller than the door.’
- b. ashja-ar-un **aTwala** min al-bab-i
 tree.PL.FEM.Indef.NOM tall.comp from def.door.ACC
 ‘Trees taller than the door.’
- c. al-shaab-u al-**aTwala** min al-baab-i
 def.boy.NOM def.tall.comp from def.door.ACC
 ‘The boy that is taller than the door.’

JA *positive* adjectives agree in definiteness, number and gender. Overt case agreement for examples of this sort are not available in JA, partly due to the fact that case morphology is not present on the JA noun itself.

- (20) a. shab Taweel
 boy.Indef tall.Indef
 ‘A tall boy’
- b. il-shabaab il-Twaal
 def.boys def.tall.PL
 ‘The tall boy’
- c. shajar-a Taweel-eh
 tree.FEM tall.FEM
 ‘A tall tree’

JA *comparative* adjectives, on the other hand, **lack** agreement features.

- (21) a. shof-t shabaab **aTwal** min il-baab
 saw.1P.SG. boy.PL tall.compr from def.door
 ‘I saw boys taller than the door.’
- b. shof-t il-shab illi **aTwal** min il-baab
 saw.1P.SG def.boy that tall.comp from def.door
 ‘I saw the boy that is taller than the door.’

Throughout this research, I will refer to relevant data from Modern Standard Arabic (MSA) comparatives *only* when the need arises (i.e. only when the need to illustrate case marking arises for JA, since JA may not reveal the full picture of case marking as MSA does).

1.2 Identifying Parameters of Cross-linguistic Variation

This section summarizes the ‘Standard’ semantic analysis of English comparatives. This will help in grasping the main ideas behind the semantics of comparatives and also help to set some key terminology. To illustrate the mechanics of the semantics assumed, I will exploit some relevant data from Japanese as a language similar to JA in some key aspects of comparison. I will discuss some of the accounts given for Japanese comparatives, as an illustration we can make use of to understand the key concepts I intend to discuss in this section.

Let us start by identifying a common puzzle from Japanese, and as we move on throughout this chapter, we will have developed the necessary background to understand the scope of the main research problems from JA, which will be the topic of section 1.3. Why is there variation in acceptability between the pair of Japanese comparatives in (23), while there is no such variation in acceptability within the English pair of comparative sentences in (22)?

(22) English

- a. John bought **more** umbrellas than Mary did.
- b. John bought a **longer** umbrella than Mary did.

(23) Japanese

- a. Taroo-wa [Hanako-ga katta yori] **takusan(-no)** kasa-o
Taroo-TOP [Hanako.NOM bought YORI] many(-GEN) umbrella.ACC
katta
bought
‘Taroo bought more umbrellas than Hanako did.’
- b. ?* Taroo-wa [Hanako-ga katta yori] **nagai** kasa-o katta.
Taroo.TOP [Hanako.NOM bought YORI] long umbrella.ACC bought
‘Taroo bought a longer umbrella than Hanako did.’

Generally speaking, most of the literature on Japanese comparatives, that seek a compositional semantics explanation, attribute the variation in acceptability in the Japanese examples, above, to one of two compositional interconnected aspects of comparison: A) could

the reason be that Japanese compares *individuals* rather than the *degrees* on a scale of some dimension? B) could it be that Japanese lacks the mechanisms necessary for degree comparison (i.e. *Degree Abstraction*)? To better understand these parameters of variation and the basics of the ‘Standard’ Analysis, let’s look at how comparatives are interpreted in the ‘Standard’ Analysis.

The most common analysis for the semantics of comparatives (see [Cresswell \(1977\)](#); [Von Stechow \(1984\)](#); [Heim \(1985, 2000\)](#)) treats gradable adjectives, semantically, as relations between individuals and degrees. A Gradable Adjective (GA) like *tall*, for example, is assigned the following denotation.

$$(24) \quad \llbracket \text{tall} \rrbracket = [\lambda d. \lambda x. x \text{ is } d\text{-tall}] = [\lambda d. \lambda x. \text{HEIGHT}(x) \geq d] \quad (\text{type } \langle d, \langle e, t \rangle \rangle)$$

[Hohaus et al. \(2014\)](#) summarize the ‘Standard’ analysis of comparatives (following [Heim \(2001\)](#)) and suggest that comparatives are *quantifiers* over degrees. This quantification happens in the syntax of Logical Form (LF), just as it would with Nominal quantifiers like *every book* (type $\langle \langle e, t \rangle t \rangle$). Just as Nominal quantifiers raise at LF and combine with a predicate of type $\langle e, t \rangle$ for variable binding (cf. (25)), comparative quantifiers raise at LF and combine with a predicate of type $\langle d, t \rangle$ in order to bind a degree variable (cf. (26)), in a process known as *Degree Abstraction*.

$$(25) \quad \begin{array}{ll} \text{a. John read every book.} & \\ \text{b. } \llbracket [\text{every book}] \llbracket \langle e, t \rangle 1 [\text{John read } t_1] \rrbracket \rrbracket & \text{LF} \end{array}$$

$$(26) \quad \begin{array}{ll} \text{a. John is tall-er than Mary is.} & \\ \text{b. } \llbracket [-er [\text{than } \lambda d [1 \text{ John is } t_1 \text{ tall}]]] \llbracket \lambda d' [2 [\text{Mary is } [\text{AP } t_2 \text{ tall}]]] \rrbracket \rrbracket & \text{LF} \end{array}$$

Degree Abstraction can take place in the matrix clause or in the embedded clause. According to [Hohaus et al. \(2014\)](#), Degree Abstraction or lack thereof, is a true parameter of cross-linguistic variation in comparative constructions. A language which lacks Degree Abstraction in the embedded clause will not be able to form a particular type of comparative construction called ‘Subcomparatives of Degree’, illustrated in the following.

$$(27) \quad \text{The table is longer } Op_1 \text{ than the door is } t_1\text{-wide.}$$

Without Degree Abstraction, such a construction would not be possible. Compare (27) with the Japanese example, below.

- (28) * Kono tana-wa [ano doa-ga hiroi yori] takai
 this shelf.TOP [that door.NOM wide YORI] tall
 ‘This shelf is taller than that door is wide.’

A subcomparative is a clausal comparative that involves comparing two different items along two different dimensions. As Beck et al. (2004) suggest, subcomparatives of degree involve a change of the dimension measured (the adjective) and therefore crucially require abstraction over degrees in the embedded clause. Accordingly, Beck et al. (2004: 325) identify the following parameter of cross-linguistic variation.

- (29) The Degree Abstraction Parameter (DAP):

A language {does/does not} have binding of degree variables in the syntax.

However, degree abstraction is not the only problem. The semantic type of the SOC may also be a factor determining the acceptability of constructions which rely on comparison with a degree, for example. This is another point of variation across, and in some cases, within languages. Comparatives may have a SOC that ultimately contributes an *individual* of type $\langle e \rangle$ rather than a degree of type $\langle d \rangle$. Discerning which is type $\langle e \rangle$ and which is type $\langle d \rangle$ is not always a simple task. In the literature on English comparatives, if the complement of *than* is a single DP, the comparative is considered a *phrasal* comparative. If the complement of *than* is a CP, then the structure as a whole is considered a *clausal* comparative (The Direct Analysis (see Heim (1985))). Some basic examples from English are illustrated below.

- (30) a. John is taller [*PP* than [*DP* Mary]]. *Phrasal* Comparative
 b. John is taller [*CP* than [*IP* Mary is]]. *Clausal* Comparative

However, these are terms used to describe what we see on the surface. The underlying form could be different. For example, (30a) above, could have a SOC (‘Mary’ in this case) that is underlyingly as the SOC of (30b), based on arguments from the Reduction Analysis

(see [Lechner \(2001\)](#)). Without going into much detail, the Reduction analysis suggests that if the complement of *than* looks phrasal, then there might be a possibility that the phrasal complement of *than* is derived from a clausal complement of *than* after Reduction Operations, such as *Comparative Deletion*, *Comparative Ellipsis*, and *Sub-Deletion*, have applied to the clausal complement of *than*.⁸ The reason why proponents of the Reduction analysis suggest this idea is because they strive for a more economical overall semantics of comparatives in English. The idea is that if the complement of *than* was clausal, then, according to the Reduction Analysis, the semantic type of the clausal SOC would be type $\langle d \rangle$ or $\langle d, t \rangle$ (i.e. it would be a *degree* or degree description, semantically). Accordingly, if the complement of *than* looks phrasal but can be analyzed as derived from a clausal source, then that phrasal complement of *than* also receives an analysis that assigns it a type $\langle d \rangle$, and there would be no need to suggest another semantic type available for the complement of *than* in English. However, some complements of *than* in English cannot be analyzed as having a clausal source. For cases like these, the Direct Analysis ([Heim, 1985](#)) would suggest that the SOC is of type $\langle e \rangle$ (i.e. an *individual* not a degree). This means that the Direct analysis suggests that English has two types of SOCs; an SOC contributing *degrees* for an underlyingly *clausal* complement of *than*, and an SOC contributing individuals (type $\langle e \rangle$) for an underlyingly *phrasal* complement of *than*.

For our purposes here, the important thing is that if the SOC is, syntactically, underlyingly phrasal, then the surface SOC must be of the semantic type $\langle e \rangle$ and contribute an individual. If it is underlyingly clausal then it must contribute a *degree* (type $\langle d \rangle$) or a *degree* description (type $\langle d, t \rangle$). Why is this important? Because if the SOC was of type $\langle e \rangle$ then we can attribute any behavior showing lack of Degree Abstraction in the SOC to the lack of a semantics of degrees in the SOC. In fact, this is one analysis given in [Kennedy \(2007\)](#) for the lack of subcomparatives in Japanese.⁹

⁸ See [Lechner \(2001\)](#) for further details on the Reduction Operations.

⁹ [Kennedy \(2007\)](#) suggests that English SOCs are type $\langle d \rangle$, and *potentially*, type $\langle e \rangle$. However, Japanese SOCs are *only* type $\langle e \rangle$.

To summarize, we have discussed two major aspects of comparatives: Degree Abstraction and the *semantic type* contributed by the SOC.¹⁰ In the next section, I introduce the main problems from JA comparatives that will be our main focus throughout this research.

1.3 Research Problems & Methodology

In this section, I build on the previous discussion and identify some problems that arise when attempting to extend an English-like or a Japanese-like analysis to JA comparatives. The patterns of JA comparatives will show the hallmarks for a Japanese-like analysis in some cases, but indicate the need for a more unique type of analysis, with some influence from an English-like analysis, in other cases. I will suggest a path of investigation that will include the two points of variation that were discussed in the previous section (Degree Abstraction and the Semantic type of the SOC), which may be responsible for cross-linguistic variation in comparatives. By ‘path of investigation’ I am not referring to new parameters of variation per se, but to diagnostics that we can make use of to investigate JA comparatives.

1.3.1 Identifying the Problems

Let us start by identifying the types of comparative constructions we are interested in from English and JA.

- | | | |
|------|---|--|
| (31) | a. John is taller than Mary. | <i>Predicative Phrasal Comparative</i> |
| | b. John is taller than Mary is . | <i>Predicative Clausal Comparative</i> |
| | c. John ate more biscuits than Mary did . | <i>Attributive Clausal Comparative</i> |
| | d. John ate more biscuits than Mary. | <i>Attributive Phrasal Comparative</i> |

In JA, there is no exact counterpart to (31b), but there are two variants that look similar in structure (i.e. are *predicative*) in (33b) and (34b). There are also two variants

¹⁰ Another point of variation is the possibility that the degree term is supplied by the Context, not by the composition. In this case the interpretation will depend on the context of the utterance. We will discuss this option in more detail in Chapter 2. The important idea here is that if a comparative construction makes use of the contextual method, then none of the issues regarding degree abstraction or semantic type of SOC need to be considered in the first place. In fact this was one analysis given (see Beck et al. (2004, 2009)) for Japanese. I quickly rule out this possibility in the beginning of Chapter 2.

of (31c) in (33a) and (34a). The examples below are divided into three sets based on what follows the JA Standard Marker *min*.

(32) No clausal material in complement of *min*

- a. Ali aTwal **min** Sarah.
Ali taller from Sarah
'Ali is taller than Sarah.'
- b. Ali akal baskut akthar **min** Sarah
Ali ate biscuits more from Sarah
'Ali ate more biscuits than Sarah ate.'

(33) *min* followed by *illi* & verbal predicate

- a. Ali akal baskut akthar **min illi** Sarah aklat-oh
Ali ate biscuits more from *illi* Sarah ate-them
'Ali ate more biscuits than Sarah did.'
- b. ktaabi aḅgal **min illi** inta jibt-oh
book.my heavier from *illi* you.MASC brought-it
'My book is heavier than the one you brought.'

(34) *min* followed by *ma* & verbal predicate

- a. Ali akal baskut akthar **min ma** Sarah aklat
Ali ate biscuits more from *ma* Sarah ate
'Ali ate more biscuits than Sarah did.'
- b. Ali raKad asraḡ min ma Muna rakDat
Ali ran faster from *ma* Muna ran
'Ali ran faster than Muna did.'

One aspect of JA comparatives to keep in mind here is that, unlike English, the comparative constructions with *illi* and with *ma* in JA are ungrammatical if the embedded clause verb is deleted. This is due to the fact that, like MSA, JA main verbs move to Infl, and so VP deletion cannot target the main verb.

(35) John ate more biscuits than Mary did eat.

a. * Ali akal baskut akthar **min illi** Sarah
Ali ate biscuits more from *illi* Sarah
'Ali ate more biscuits than Sarah.'

b. * Ali akal baskut akthar **min ma** Sarah
Ali ate biscuits more from *ma* Sarah
'Ali ate more biscuits than Sarah.'

The English translations for the JA comparatives in (32) - (34) point us in the direction of considering those in (32) as phrasal comparatives. The fact that the comparatives in (33) and (34) have a verbal predicate following *min* suggests that they at least involve clausal material in the complement of *min*. But this does not tell us what constitutes the complement of *min* in these type of comparatives. Notice the existence of the word *illi* in (33a) and *ma* in (34a). How do these elements affect the overall structure and the semantics involved? This will be part of our discussions in the remaining chapters. For now, we can divide the types of comparatives in JA based on what follows the Standard Marker *min* 'from'. In this case we get three main types: Phrasal *min* comparatives (cf. (32)); *illi*-type comparatives (cf. (33)); and *ma*-type comparatives (cf. (34)). I will continue to refer to these as 'the three types of JA comparatives'.

Having introduced the surface form of JA comparatives, we can now take a look at a puzzle in JA similar to the one in Japanese. Unlike English, but similar to the Japanese, JA also shows a contrast in grammaticality, which arises only with the third type of JA comparatives; namely, the comparative with *ma*.

(36) a. John bought **more** umbrellas than Mary did.

b. John bought a **longer** umbrella than Mary did.

(37) a. Ali ishtara **famsiyy.at akthar** min **ma** Sarah ishtara.t
Ali bought umbrellas more from *ma* Sarah bought.FEM
'Ali bought more umbrellas than Sarah did.'

b. ?* Ali ishtara **famsiyyeh aTwal** min **ma** Sarah ishtara.t
Ali bought umbrella longer from *ma* Sarah bought.FEM
'Ali bought a longer umbrella than Sarah did.'

However, when we use ‘illi’ instead of ‘ma’ in (37b), the sentence becomes grammatical (cf. (38a)), and, in fact, it is grammatical with the comparative adjective *akthar* ‘more’ as well (cf. (38b)).

- (38) a. Ali ishtara **famsiyyeh aTwal** min **illi** Sarah ishtarat-ha
 Ali bought umbrella longer from *illi* Sarah bought.it
 ‘Ali bought a longer umbrella than Sarah did.’
- b. Ali ishtara **famsiyyaat akthar** min **illi** Sarah ishtarat-hin
 Ali bought umbrellas more from *illi* Sarah bought.them
 ‘Ali bought more umbrellas than Sarah did.’

The comparative with *ma* and the comparative with *illi*, also behave differently with regards to the grammaticality judgments and intended meaning of each, in examples like the following where Negative *nobody/no one* is used in comparatives.

- (39) a. * John bought a more expensive book than no one did.
- b. * Ali ishtara ktaab aʕla min **ma ma Hada** ishtara
 Ali bought book.indef expensive.comp from *ma* not one bought
 ‘*Ali bought a more expensive book than no one bought.’
- c. Ali ishtara ktaab aʕla min **illi ma Hada** ishtara-h
 Ali bought book.indef expensive.comp from *illi* not one bought-it
 ≈ ‘Ali bought a more expensive book than **the one** that no one bought.’

A sentence like (39a) is an example of what is known in the literature on the semantics of comparatives as a Negative Island Effect.¹¹ We will return to the details of the Negative Island Effect in Chapter 3. For now, it suffices to notice that the translation of the sentence with *illi* is different from that with *ma*. The sentence with *illi* (cf. (39c) above) compares the book that Ali bought with **another book** that nobody bought, while the sentence with *ma* is intended to mean that the book that Ali bought is expensive to a certain degree that exceeds the ‘expensiveness’ of what nobody bought.

A preliminary analysis on par with that given for Japanese could be suggested at this point. We could suggest that the ‘illi’-comparative embeds a SOC of type $\langle e \rangle$, meaning

¹¹ The Negative Island Effect is not to be understood as some form of *island* violation, but a grammaticality effect observed in comparatives with negation.

it compares individuals, not degrees. This is because the translation of the sentence in (39c) above compares ‘the books’, not their respective degrees of ‘expensiveness’. If so, then that would also explain why it does not allow adjectival subcomparatives of degree as in the following. Recall that subcomparatives require degree abstraction in the embedded clause. Since the sentence is ungrammatical, then we can assume that degree abstraction does not take place in the SOC of *illi* comparatives.

- (40) * il-Taawleh **aTwal** min **illi** il-baab **ʕreed**
 def.table taller from *ma* def.door wide
 ‘The table is **longer** than the door is **wide**.’

We could also provide a preliminary analysis of the *ma*-type comparative. Since the *ma*-type comparative, unlike the *illi* comparative, does not have an intended meaning whereby the ‘books’ themselves are compared, then it might have degree abstraction, and hence, a SOC that is not type <e>. However, if this is the case, then why does the *ma*-type fail at adjectival subcomparatives of degree, which necessarily must involve degree abstraction (see section 1.2, above, for details).

- (41) Subcomparatives
- a. * il-Taawleh **aTwal** min **ma** il-baab **ʕreed**
 def.table taller from *ma* def.door wide
 ‘The table is **longer** than the door is **wide**.’
- b. il-Tawleh **aTwal** min **ʕarD** il-baab
 def.table taller from width def.door
 ‘The table is longer than **the width of** the door.’

A nominal SOC, which does not require degree abstraction in order to allow for a change in the dimension of comparison, seems to solve the problem, as in the basic phrasal-looking ‘min’ type in (41b) above.

Moreover, recall that JA comparatives use the preposition *min* ‘from’, just like Japanese, for the Standard Marker . Specifically, however, ‘min’ never takes CP complements in its normal preposition use in the language, so why should it be any different with comparatives? Even if we were to suggest a difference between the two JA clausal comparatives as one of

them involving a type $\langle e \rangle$ SOC and the other involving a type $\langle d \rangle$ SOC, then would not that suggestion itself go against what the suggestions of the Direct Analysis? Recall that if a SOC was syntactically underlyingly clausal then it should be of the semantic type $\langle d \rangle$, and if underlyingly phrasal then it should be of type $\langle e \rangle$.

Let us summarize the problems as follows. The main issue we have here is with the *ma*-type comparative. It looks like it has a clausal complement of *min*, and therefore (as per the Direct Analysis and the Reduction Analysis) should have an SOC of type $\langle d \rangle$. This idea is strengthened given that its translation does not involve comparing objects/individuals like the *illi* comparative does. However, it fails with adjectival subcomparatives of degree (which require degree abstraction). These are unexpected and conflicted behaviors.

There is also the issue of a contrast in grammaticality, illustrated in the following example.

- (42) a. Ali ishtara **famsiyy.at akthar** min **ma** Sarah ishtara.t
 Ali bought umbrellas more from *ma* Sarah bought.FEM
 ‘Ali bought more umbrellas than Sarah did.’
- b. ?* Ali ishtara **famsiyyeh aTwal** min **ma** Sarah ishtara.t
 Ali bought umbrella longer from *ma* Sarah bought.FEM
 ‘Ali bought a longer umbrella than Sarah did.’

What can explain this variation? It does not seem to be an issue of semantic type, nor of existence of degree abstraction. With respect to this example, JA comparatives function like Japanese, not like English. Clearly, then, extending an English-style analysis **alone** or a Japanese-style analysis **alone** to JA would not suffice. The JA analysis must come from a mix of the two types of analyses for English and Japanese.

1.3.2 A path of Investigation

This section builds on the previous two sections and suggests a path of investigation for the problems presented with respect to JA comparatives. In short, based on our discussions above, I suggest the use of the following as points of variation in comparatives between languages.

- (43) Sources of Variation
- a. Existence of Degree Abstraction as per the DAP
 - i. Language not capable of Degree Abstraction -DAP
 - ii. Language Capable of Degree Abstraction +DAP
 - b. Semantic Type & Syntactic Underlying Form of Standard of Comparison
 - i. Exists **only** Type $\langle e \rangle$ Syntactically Underlyingly *Phrasal*SOC
 - ii. Exists **only** Type $\langle d \rangle$ Syntactically Underlyingly *Clausal* SOC
 - iii. Exists **both** Type $\langle e \rangle$ and Type $\langle d \rangle$ Syntactically both Underlyingly *Phrasal* and *Clausal* SOC exist.

These two parameters of investigation that we set up will now come in handy when we use them as guidance tools for investigating the data on JA comparatives and the problems we identified in the previous section. Each type of the three types of JA comparatives will thus be tested for both parameters of variation above. To summarize, the data presented from JA comparatives does not seem to favor an English-style analysis over a Japanese-style analysis, or vice versa, but shows evidence pointing towards multiple analyses and evidence that some commonly held views about comparatives may need to be amended, so as to accommodate more varying cross-linguistic data.

1.4 Summary

In accordance with the two main aspects of investigation that we set up as a path of investigation, the remaining chapters will be divided up as follows. We will start with the most basic case of JA comparatives; namely the phrasal *min* comparative. This will be the topic for Chapter 2. Before we could start with our Path of Investigation, the most logical first step is to rule out the possibility that JA comparatives do not require a compositional semantic analysis in the first place (i.e. that they are best analyzed as comparison based on *context*). If that were the case then there would be no need to follow our path of investigation and all the problems can be attributed to a context-based comparative system. However, this is not the case. We will find that indeed a Compositional semantic analysis is the only option

(and so we must go through with the suggested path of investigation). This leaves us with the need to check for the semantic type of the SOC in phrasal comparatives of JA, which can be done by uncovering the underlying form of the complement of *min*. Having uncovered the underlying syntax of the complement of *min* as phrasal, we will turn to the syntax of the matrix clause. We will identify two possible options in the literature; namely the *Deg-Headed* and the *Classical* structure and compare their merits. After providing sufficient evidence for the Classical structure, I show that the *Classical* structure will require some modification, if it is to fit the JA linear order of constituents. I suggest this modification in the final section and apply the relevant semantics to the JA phrasal comparative with *min*. The syntactic investigation of the matrix clause of JA comparatives in this chapter will set the stage for the remaining chapters.

Having shown in Chapter 2 that the comparatives in JA are indeed compositional and require a compositional semantics like the ‘Standard’ Analysis, Chapter 3 will focus on only the two parameters of investigation; namely Degree Abstraction and the semantic type of the SOC. Chapter 3 will focus on the comparative with ‘illi’. I will follow the path of investigation we set up and first ask what the underlying form of the complement of *min* is with *illi* comparatives. We will make use of Binding facts and the selectional properties of *min*, in an effort to uncover the underlying form of the complement of *min*. This will help us identify the semantic type of the SOC. We will find evidence in favor of a relative clause-like analysis of the complement of *min* with *illi*-type comparatives (i.e. the SOC of *illi*-type comparatives is underlyingly phrasal, hence, should be of the semantic type $\langle e \rangle$). I apply the semantic analysis built in Chapter 2 to the *illi*-type comparative of JA. This will result in an explanation for the behavior of the *illi*-type comparative with respect to subcomparatives, and the Negative Island Effects example. It will also explain why *illi* comparatives do not suffer from a variation in acceptability with the *longer umbrella / more umbrellas* type sentences.

Chapter 4 will focus on the comparative with ‘ma’. I will follow the same line of investigation as that in Chapter 3. Basically, I ask what the underlying form of the complement of *min* with *ma* comparatives is. Is it clausal or phrasal? As with the *illi* type, diagnostics for

checking the underlying form are developed and applied. We arrive at the Underlying Form and the semantic type of the SOC of ‘ma’ comparatives, accordingly. This, in and of itself, will introduce the true nature of the problems of *ma* comparatives. This is because we will find that the predictions revealed by the underlying form with respect to the semantic type of the SOC, might not be as reliable as we thought (given the discussion of the Direct Analysis in Heim (1985)). In particular, we will find that *ma*-type SOC indeed does involve degrees, but that the SOC is syntactically phrasal. How could this be? Recall that this goes against what a Direct analysis would predict (that underlyingly phrasal complements of *than* are of the semantic type $\langle e \rangle$ not $\langle d \rangle$). I will suggest a solution following Sudo (2009) where a nominal can be degree-based (let us call this the Degree Nominal analysis). This would explain why the complement of *ma* acts syntactically as a nominal, but functions semantically as involving degree. I will then illustrate how the analysis developed can account for the behavior of *ma* comparatives regarding subcomparatives, and the Negative Island Effects example above, etc. In the final section of the chapter, I entertain one analysis given by McNabb and Kennedy (2009) for Palestinian Arabic with respect to the variation in acceptability problem, and demonstrate that my analysis is more motivated and in fact produces more correct predictions, even for Palestinian Arabic.

Chapter 2

SURFACE PHRASAL COMPARATIVES

In this chapter, I will investigate the syntax and semantics of the phrasal type of JA comparatives; what we have been calling the *min*-type phrasal comparative. In section (2.1) I will start by considering the possibility that a compositional semantics, in general, is not what JA comparatives require. Consequently, I will rule out the possibility of a *contextual* analysis and prove that it is indeed a compositional analysis that we should be seeking. In doing so, we automatically rule out such possibility for the other two types of JA comparatives as well (those with *illi* and *ma*) and, therefore, do not need to independently discuss *contextual* analyses as an option for them. We then move on to investigate the two parameters of investigation; namely, the *semantic type* of the SOC and the existence of Degree Abstraction. Accordingly, in section 2.2, I will first attempt to uncover the underlying form of the complement of *min* in JA phrasal *min* comparatives, to rule out the possibility of its SOC being underlyingly clausal. Recall that this is a necessary step to identify the semantic type of the SOC. Following that, the syntax of the matrix clause of comparatives will still be undefined. Section 2.3 will set up a basis for the architecture assumed in the syntax of comparatives specific to JA and suggest the most suitable structure and analysis, by comparing two main suggestions in the literature; namely, the Deg-headed structure and the Classical structure. I will then suggest a slight modification to the Classical structure so that it is more in line with the linear order of JA comparatives.

2.1 Ruling Out a Contextual Analysis

In this section, our goal is to rule out the possibility of a *Contextual* analysis for the JA comparatives we are concerned with. Contextual comparison and Compositional Comparison are also referred to in the literature as Explicit and Implicit Comparison, respectively.

(Kennedy, 2007) If JA was indeed of the Contextual/Implicit type, then the discussion of possible points of variation from the previous chapter would be irrelevant. Therefore, it is important to start by ruling out this possibility. Kennedy (2007: 156), following Sapir (1944) defines Explicit (Compositional) and Implicit (Contextual) comparison as follows.

(44) a. **Explicit Comparisons** (*Compositional*)

Establish an ordering between objects x and y with respect to gradable property g using a morphosyntactic form whose conventional meaning has the consequence that the degree to which x is g exceeds the degree to which y is g.

b. **Implicit Comparisons** (*Contextual*)

Establish an ordering between objects x and y with respect to gradable property g using the positive form by manipulating the context in such a way that the positive form true of x and false of y.

The comparative in (45a) is considered a *Compositional* comparative, like the ones we are familiar with from the previous chapter. The comparative in (45b) is considered a *Contextual* Comparative (the type we want to rule out).

(45) a. John is **taller** than Mary. *Compositional Comparative*

b. **Compared to** Mary, John is tall(er). *Contextual Comparative*

But why are contextual comparatives a potential analysis for JA comparatives when they look strikingly different from the compositional-looking comparatives (compositional comparatives do not make use of a ‘compared to’ phrase) that we are interested in? How are the two really different from each other? The answer comes from the semantics used for each type. Following the ‘Standard’ Von Stechow (1984) and Heim (1985, 2000)-type of analysis, housed in a Degree-based theory of the semantics of comparatives, the phrasal *compositional* comparative in (45a) above has a degree head ‘-er’ with the denotation in (46a), and the sentence as a whole has the Logical Form in (47b), and the truth conditions in (47c).

(46) Phrasal Comparative Operator

- a. $\llbracket \text{-er}_{PHRASAL} \rrbracket = \lambda y_{\langle e \rangle} . \lambda Adj_{\langle d, \langle e, t \rangle \rangle} . \lambda x_{\langle e \rangle} .$
 $MAX(\lambda d. Adj(d)(x)) > MAX(\lambda d'. Adj(d')(y))$
- b. Let S be a set ordered by \leq . Then $MAX(S) = \iota s[s \in S \ \& \ \forall s' \in S][s' \leq s]$

(47) a. John is taller than Mary.

- b. $\llbracket \text{John} \llbracket \text{-er}_{PHRASAL} \text{ than Mary} \rrbracket [2 [1 [t_{1, \langle e \rangle} t_{2, \langle d \rangle} \text{ tall}]]] \rrbracket$
- c. The maximal degree of height that John reaches *exceeds* the maximal degree of height that Mary reaches.

The semantic composition will then be as in (48), leading to the truth conditions in (48d). (Heim, 2000; Beck et al., 2012)

(48) a. $\llbracket \text{John} \llbracket \text{-er}_{PHRASAL} \text{ than Mary} \rrbracket [2 [1 [t_{1, \langle e \rangle} t_{2, \langle d \rangle} \text{ tall}]]] \rrbracket$

- b. $\llbracket \text{-er}_{PHRASAL} \text{ than Mary} \rrbracket =$
 $\lambda Adj. \lambda x. MAX(\lambda d. Adj(d)(x)) > MAX(\lambda d'. Adj(d')(Mary))$
- c. $\llbracket [2 [1 [t_{1, \langle e \rangle} t_{2, \langle d \rangle} \text{ tall}]]] \rrbracket = \lambda d. \lambda x_{\langle e \rangle} . HEIGHT(x \geq d)$
- d. $\llbracket \text{-er}_{PHRASAL} \text{ than Mary} \rrbracket (\llbracket [2 [1 [t_{1, \langle e \rangle} t_{2, \langle d \rangle} \text{ tall}]]] \rrbracket) (\llbracket \text{John} \rrbracket) = 1$ iff
 $MAX(\lambda d. HEIGHT(\text{John}) \geq \mathbf{d}) > MAX(\lambda d'. HEIGHT(\text{Mary}) \geq \mathbf{d}')$

Crucially, notice the free variable ‘**d**’ in **boldface** in (48d) above. The difference between compositional and contextual comparison is the **source** of this degree. In compositional comparison, this degree is an integral part of the composition itself. However, in the *Contextual* comparative, repeated here as (49a), the ‘compared to’ phrase is not integrated into the compositional semantics of the main clause, but instead functions as a ‘context setter’, and the value of the degree variable is supplied by the *context*. (Beck et al., 2012)

(49) a. Compared to Mary, John is tall(er).

- b. $\max(\lambda d. \text{John is } d\text{-tall}) > c$
 $c =$ the degree of height **made salient by the utterance context**
 $=$ the maximal degree of height that Mary reaches

According to Beck et al. (2012), the role of the ‘compared to’ phrase is to set the context needed that will provide information about the value of the free variable, which, in this case, is a *height* standard. Notice, also, that, unlike the compositional comparative, contextual comparatives lack the standard marker ‘than’.

Our concern here is to find out if the JA phrasal *min*-type comparative makes use of a contextual strategy for comparison (i.e. to find out whether the value of the free degree variable is provided by the context or by the composition itself). If it is contextual, then does a compositional strategy exist as well, or is contextual comparison the only option?

Let us start by looking at some JA comparatives that are clearly contextual, due to the fact that they make use of a ‘compared to’ phrase. JA has its own variants of the English ‘compared to’ structure.

- (50) a. **moQaaranatan maƒ** Muna, Ali Taweel/aTwal
 compared with Muna, Ali tall/taller
 ‘Compared to Muna, Ali is tall(er).’
- b. **moQaaranatan maƒ** Muna, Ali akal baskut akthar
 compared with Muna, Ali ate biscuits more
 ‘Compared to Muna, Ali ate more biscuits.’

But what about the strategy used for JA *min*-type comparatives like the one illustrated in (51a)? The reading that native speakers get from (51a) roughly amounts to (51b)

- (51) a. Ali aTwal min Muna
 Ali taller from Muna
 ‘Ali is taller than Muna’ ‘min’ comparative
- b. Ali’s maximal degree of height is \geq some degree ***d*** and Muna’s maximal degree of height is \geq some degree ***d***’, and ***d*** > ***d***’.

Does this kind of comparative get the value of the degree variables (in boldface in (51b)) from the *context* or from the *composition* itself; meaning, should it be analyzed as the English Compositional comparative in (52a) or the English Contextual comparative in (52b)?

of contextual comparatives provides us with a method of distinguishing contextual from compositional comparatives, which are more rigid in their interpretations. We obtain similar judgments for the following JA comparatives in the same context.

- (54) a. **moQaaranatan maŋ** il-foSTaan, il-jakeit arKaS
 compared with def.dress, def.jacket cheaper
 ‘Compared to the dress, the jacket is cheaper.’
- b. # il-jakeit **arKaS** min il-foSTaan
 def.jacket cheaper from def.dress
 ‘The jacket is cheaper than the dress.’

The compositional comparative in (54b) above is infelicitous in the context described in (53a), while the contextual counterpart is not. Accordingly, we can safely assume a point in favor of JA comparatives being compositional in nature, and not contextual.

2.1.2 Island Sensitivity

Another distinguishing property is Island Sensitivity. As Beck et al. (2012) explain, the relationship between a context setter and a contextual comparative should not be subject to syntactic constraints, since the context is not an integral part of the composition. The LFs that are the input to compositional interpretation, on the other hand, are. This is explained as follows. Recall the typical LF structure represented in (47), repeated here as (55b). Notice how the comparative morpheme *-er* and the *than*-clause form a constituent that is raised to a matrix clause adjoined position at LF.

- (55) a. John is taller than Mary.
- b. [John [$\underbrace{[-er_{PHRASAL} \textit{than} \textit{Mary}]}_{\uparrow}$] [2 [1 [t_{1,<e>} t_{2,<d>} tall]]]]]

In compositional comparatives, this movement is subject to island violations, while in contextual comparatives, there should be no movement involved, and therefore, no island violations. This would constitute a major difference between compositional and contextual comparatives. This is illustrated in the following examples where the contextual comparative is not sensitive to island constraints, while the compositional comparative is.

- (56) a. **Compared to Bill**, John wrote a paper [*RelCl* that is longer].
 b. * John wrote a paper [*RelCl* that is **longer** than Bill].

- (57) * [*IP* [*IP* John wrote a paper [*RelCl* that is long **-er than Bill**]]].
 ↑

If we are on the right track to suggest that JA comparatives are compositional, then we should get the same results, and in fact we do. This is illustrated in the following examples where only the non-‘compared to’ type is sensitive to relative clause islands. This shows that the non-‘compared to’ type is compositional.

- (58) a. **moQaaranatan ma** Bill, John katab waraga [*RelCL* kanat aTwal]
 compared with Bill, John wrote paper [*RelCL* was longer]
 ‘Compared to Bill, John wrote a paper that was longer.’
 b. * John katab waraga [*RelCL* kanat **aTwal** min Bill]
 John wrote.MASC paper [*RelCL* was longer from Bill]
 ‘*John wrote a paper that was longer than Bill.’

That JA obeys the relative clause island constraint independently of the previous example is illustrated in (59b).

- (59) a. miin_i Ali Darab *t_i*?
 who Ali hit *t*
 ‘Who_i did Ali hit *t_i*?’
 b. * miin_i Ali simi il-Xabar [*RelCL* innu Darab *t_i*?]
 who Ali heard def.news [*RelCL* that hit *t*]
 ‘*Who_i did Ali hear the news [*RelCL* that he hit *t_i*?’

2.1.3 Additional Evidence

As discussed in Chapter 1, Compositional comparatives involve an asymmetric ordering of the degrees to which two objects possess or lack a property. This difference in degree need not be great. Even a very small existing difference would suffice to make a comparison. On the other hand, Contextual comparison, as you may recall, involves the use of the positive form of the adjective, and as a result, will result in certain implicatures that are not

available in compositional comparison. One example is the difference in the availability of Crisp Judgments ([Kennedy \(2007\)](#)) (cf. (60b) and (61b)).

(60) Context: *A 600 word essay and a 200 word essay*

- a. This essay is longer than that one.
- b. Compared to that essay, this one is long.

(61) Context: *A 600 word essay and a 597 word essay*

- a. This essay is longer than that one.
- b. # Compared to that essay, this one is long.

The contextual comparative in (61b) is infelicitous because it requires that one essay has a degree of length that stands out, but due to the very subtle difference between the length of the two essays, this is not possible. The same effects can be observed in the JA counterpart in (62b), which incorrectly presupposes that the 600 word essay is long, but the 597 word essay is short.

(62) Context: *A 600 word essay and a 597 word essay*

- a. haḏa al-maQaal aTwal min haḏak
this def.essay taller from that
'This essay is longer than that one.'
- b. # moQaranatan maḥ haḏak il-maQaal, haḏa Taweel
compared with that def.essay, this tall
'Compared to that essay, this one is long.'

Moreover, [Kennedy \(2007\)](#) suggests (as originally observed by [Sawada \(2007\)](#)) that contextual comparison, generates an implicature that the positive form is false of the subject. But this implicature is not generated with compositional comparison.²

- (63) a. That essay is longer than this one, and it is already quite long.
- b. ?? That essay is long compared to this one, and it is already quite long.

² See [Sawada \(2007\)](#) for a pragmatic explanation of the effect observed with contextual comparison.

- (64) a. haḏak il-maQaal aTwal min haḏa, wo huw aSlan Taweel
 that def.essay taller from this, and it already tall
 ‘That essay is longer than this one, and it is already quite long.’
- b. ?? haḏak il-maQaal Taweel moQaranatan maḥ haḏa, wo hu aSlan Taweel
 that def.essay tall compared with this, and it already tall
 ‘That essay is long compared to this one, and it is already long.’

One more piece of evidence providing further support (see [Kennedy \(2007\)](#); [Beck et al. \(2012\)](#) for more details) for the compositional nature of the JA comparatives at hand comes from what [Kennedy \(2007\)](#) refers to as ‘Minimum Standard Gradable Adjectives’. A summary of the idea is that some adjectives, like *wet*, *open*, and *bent* have positive forms in which the SOC is a *minimum value* on the scale: *x is bent* is true as long as *x* has a *non-zero degree of bend*. Accordingly, [Kennedy \(2007\)](#) predicts that the ‘compared to’ constituent in contextual comparatives should not have any semantic effect on the interpretation of such adjectives since the interpretation of such adjectives is not context dependent. This is the case in the following examples.

- (65) Context: There are two rods. Rod A is bent just a little bit, but rod B is bent more.
- a. Rod B is more bent than rod A.
- b. ?? Compared to rod A, rod B is bent.
- (66) Context: There are two rods. Rod A is bent just a little bit, but rod B is bent more.
- a. ḡamood B maTḡooj akthar min ḡamood A
 rod B bent more from rod A
 ‘Rod B is more bent than rod A.’
- b. ?? moQaranatan maḥ ḡamood A, ḡamood B maTḡooj
 compared with rod A, rod B bent
 ‘Compared to rod A, rod B is bent.’

Given the discussions so far, we can conclude that the JA comparatives we are concerned with are compositional comparatives, not contextual.

2.1.4 Summary

Concluding this section, we have suggested that there are two main types of comparatives depending on how the degree term is supplied; namely Contextual comparatives and Compositional comparatives. The first step in any semantic analysis of comparatives in a given language is to rule out the possibility that the comparatives in questions are actually contextual. If they were contextual then we would have to assume a different semantics, and a different path of investigation. Our discussion so far shows that this is not the case. Based on their behavior with regards to the diagnostics of contextual comparatives discussed above, the JA comparatives that look compositional (i.e. do not make use of a ‘compared to’ phrase) are indeed *compositional*, not contextual.

2.2 The Underlying Form of the Complement of *min*

Our goal in this section is to determine whether surface phrasal comparatives in JA have a complement of *min* that is underlyingly phrasal or underlyingly clausal. This section will show that there is a considerable amount of evidence pointing to the fact that *surface* phrasal comparatives in JA are *underlyingly* phrasal. In what follows, I will illustrate that this is the case by using commonly used diagnostics for determining constituency in the syntactic structure, such as the selectional properties of the preposition ‘min’, Genitive case marking, and licensing of reflexives. Though these constituency tests are commonly used cross-linguistically, they must first be established as legitimate tests for JA, independently. Accordingly, for each diagnostic used, I will present independent evidence that the syntactic restrictions expected from these tests do in fact hold for JA in general.

2.2.1 Defining and Applying Diagnostics

2.2.1.1 Selectional Properties of ‘min’ and Case Assignment

Recall from our discussion in Chapter 1 that we identified JA comparatives as being of the *Particle* type, and more specifically, *Separative*, meaning that JA comparatives use the preposition *min* ‘from’ instead of an English-like ‘than’. In English clausal comparatives, ‘than’ can be a complementizer, and the CP headed by ‘than’ is selected for by the

Matrix Degree-Phrase directly. However, recall that in the English phrasal comparatives, ‘than’ was considered a Preposition in a PP, and it is this PP that is selected for by the matrix Degree-phrase. This is why English phrasal comparatives were called ‘Phrasal’, precisely because the *than*-XP was a Phrase, in the sense that it was a DP contained in a PP. Likewise, ‘min’ is a preposition in Arabic, as mentioned above, and is used in both comparative and non-comparative constructions. ‘min’ is a preposition in an even stricter sense of the term than English ‘than’ because the Arabic ‘min’ preposition never selects for a CP in its normal non-comparative uses, while, as previously mentioned, the English ‘than’ can be a complementizer. In non-comparative uses, the preposition *min* can select for Noun Phrases and Adverbial Phrases.

- (67) a. Ali aja [PP min [NP il-madraseh]]
 Ali came [PP from [NP def.school]]
 ‘Ali came from the school.’
- b. Ali mawjood [PP min [AdvP mbaariH]]
 Ali here [PP from [AdvP yesterday]]
 ‘Ali has been here since yesterday.’

However, the preposition *min* can never select for a CP, as illustrated by the ungrammaticality of (68a) below.

- (68) a. *Ali aja min [CP Rami kan yaHtafil]
 Ali came from [CP Rami was celebrating.MASC]
 ‘*Ali came from [CP Rami was celebrating].’
- b. Ali aja min [DP makan [CP ma Rami kan yaHtafil]]
 Ali came from [DP place [CP ma Rami was celebrating]]
 ‘Ali came from [DP the place [CP that Rami was celebrating in]].’

This kind of selectional property of *min* is typical of Prepositional Phrases. The closest corresponding preposition in English, for example, is ‘from’. The English preposition ‘from’, also does not select for CPs.

- (69) a. John came [_{PP} from [_{DP} the school]].
 b. Energy exists [_{PP} from [_{AdvP} the beginning of time]].
 c. * John knows this [_{PP} from [_{CP} the news anchor reported]].
 d. John knows this [_{PP} from [_{DP} pro [_{CP} what the news anchor reported]]].

Given the selectional properties of the JA preposition *min*, we can assume that *min* will also exhibit the same selectional properties in comparative uses, meaning that *min* will NOT select for a CP, just like the non-comparative *min* discussed above. Genitive Case marking shows that this is in fact the case. What follows *min* either in comparative or non-comparative uses, must receive Genitive case. Since Case marking is not evident in JA, the following examples are from MSA. These examples show the Genitive Case on the DP that is selected for by the Preposition *min*, in non-comparative uses.

- (70) a. ishtarei.t.u al-korat.a min **al-matjar.i**
 bought.Sg.Past.NOM def.ball.Sg.ACC from def.store.GEN
 ‘I bought the ball from the store.’
 b. aSbaHa ali.yun Xaaʔif.an min **al-Xabar.i** l-laḏi
 became.MASC Ali.NOM afraid.ACC from def.news.GEN that
 samiʔa-ho
 heard.2P.MASC-it
 ‘Ali became afraid due to the news that he heard.’

We also find that Genitive case is evident on the constituent selected for by *min*, in comparative uses of *min*.

- (71) a. ali.un asraʔ.a min **Khalid.in**
 Ali.NOM faster.ACC from Khalid.GEN
 ‘Ali is faster than Khalid.’
 b. ali.un akal.a roz.an akthar.a min **al-rajol.i** l-laḏi kan.a
 Ali.NOM ate.ACC rice.ACC more.ACC from def.man.GEN that was.ACC
 bi.jiwaari-hi
 in.next-him
 ‘Ali ate more rice than the man that was next to him (did).’

The selectional properties of *min*, thus, suggest a phrasal constituent as the complement of *min*. If so, then we should see Binding facts indicating mono-clausal domains in *min*-comparatives. This prediction is borne out, as we will see in the next section.

2.2.1.2 Binding of Reflexives

One way to uncover whether a construction is phrasal or clausal is to test for the underlying form using the Binding Principles. The general Binding Principles in the literature are as follows (see [Chomsky \(1980, 1981, 1986\)](#); [Higginbotham \(1983\)](#); [Reinhart and Reuland \(1993\)](#) for details of the Binding Principles).

(72) The Binding Principles

a. Principle A :

An anaphor must be bound in its binding domain.

b. Principle B :

A pronoun must be free in its binding domain.

c. Principle C :

An R-expression must be free.

An example of an *anaphor* is the reflexive ‘himself’, an example of a pronoun is ‘he’, and an example of an R-expression is the proper noun ‘John’.³ Generally speaking, all of the Binding Principles are respected in JA. For convenience sake, I will only demonstrate with two of them; namely, Principle A and Principle B. In English, the first two of the Binding Principles are illustrated below.

³ Anaphoric Binding is more complex than I present it here (see [Reinhart and Reuland’s \(1993\)](#) analysis, for example). For our intended purposes though, the ideas sketched here will suffice.

(73) Binding Principles A and B: English

- a. John_i hit himself_i by accident.
- b. John_i heard [_{CP} that [_{IP} Bob_k hit himself_i / *_k by accident]].
- c. John_i learns [_{PP} from him*_i / _k].

The following examples from JA indicate that Binding Principles A and B are respected in a similar way. In the JA examples below, an example of an *anaphor* is the reflexive *nafs-oh* ‘himself’, an example of a pronoun is *-oh* ‘him’, and an example of an R-expression is the proper noun ‘John’.

(74) Binding Principles A and B: JA

- a. John_i bitʕalam min nafs-oh_i / *_k
John learns.MASC from himself
‘John learns from himself_i / *_k.’
- b. John_i simiʕ innu Ali_k Darb nafs-oh_i / *_k
John heard.MASC that Ali hit.MASC.PAST himself
‘John_i heard that Ali hit himself*_i / _k.’
- c. John_i bitʕalam min-oh*_i / _k
John learns.MASC from-him
‘John_i learns from him*_i / _k.’
- d. John_i simiʕ innu Ali_k Darb-oh_i / *_k
John_i heard.MASC that Ali hit.MASC.PAST-him_i / *_k
‘John_i heard that Ali hit him_i.’

Recall that in the previous section we predicted that *min* can only take phrasal complements due to its selectional properties. Given the previous examples, we predict that the Prepositional Phrase headed by *min* does not constitute a new clause or new domain, but is part of the matrix clause, and thus, anaphors in the min-PP must be bound by the matrix antecedent and pronouns must not be co-indexed with a matrix clause antecedent (i.e. must be free). This prediction is borne out in the following examples. The Binding Principles show that the complement of *min* in surface phrasal comparatives in JA must be underlyingly phrasal.

- (75) a. Ali_i mish aTwal [_{PP} min [_{DP} nafs-oh_i]]
 Ali not taller [_{PP} from [_{DP} himself]]
 ‘Ali_i is not taller than himself_i.’
- b. Ali_i Xaaf min haða il-Xabar akthar [_{PP} min [_{DP} il-Xabar il-ḡani
 Ali was.afraid from this news more [_{PP} from [_{DP} def.news def.second
 [_{CP} innu Rami_k Xan nafs-oh_{*i/k}]]]
 [_{CP} that Rami betrayed himself]]]
 ‘Ali_i was more afraid of this news than of the other news that Rami_k betrayed
 himself_{*i/k}.’
- c. Ali_i mish aTwal [_{PP} min-oh_{*i/k}]
 Ali not taller [_{PP} from-him]
 ‘Ali_i is not taller than him_{*i/k}.’
- d. Ali_i Xaaf min haða il-Xabar akthar [_{PP} min [_{DP} il-Xabar il-ḡani
 Ali was.afraid from this news more [_{PP} from [_{DP} def.news def.second
 [_{CP} innu Rami Xan-oh_{i/k}]]]
 [_{CP} that Rami betrayed-him]]]
 ‘Ali_i was more afraid of this news than of the other news that Rami betrayed
 him_{i/k}.’

The fact that reflexives are licensed after comparative *min* in non-embedded contexts (cf. (75a)) and that pronouns are NOT licensed in non-embedded contexts (cf. (75c)), provides further evidence that the complement of *min* in surface phrasal comparatives is underlyingly phrasal (see Merchant (2009) for a similar analysis of Greek phrasal comparatives).

2.2.2 The Syntactic Structure of the *min*-XP

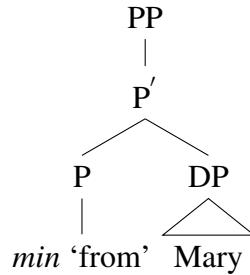
In the previous sections, we concluded that the underlying form of the complement of *min* in phrasal JA comparatives must be underlyingly phrasal. This conclusion was based on facts from binding of reflexives, Genitive case marking, and the selectional properties of the preposition *min*. Accordingly, I conclude that ‘min’ comparatives are underlyingly phrasal comparatives (i.e. the complement of *min* must be phrasal(i.e. must be an NP)). The complement of ‘min’ in surface phrasal comparatives in JA must have an underlying form as in (76c) (i.e. the DP ‘Mary’ is **not** a remnant of an ellipsis operation targeting the internal material of an embedded CP).

(76) a. Ali ate more biscuits than Mary.

b. Ali akal baskut akthar...

Ali ate biscuits more...

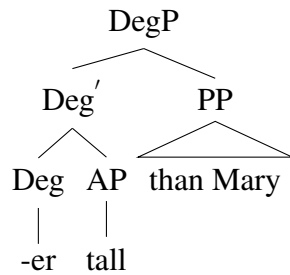
c.



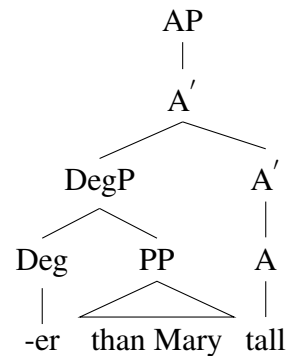
2.3 The Syntactic Structure of the Matrix Clause

There are two⁴ main suggestions in the literature for the syntactic structure assumed for the matrix clause of comparative constructions, illustrated in (77) and (78) below. Both are assimilated here to phrasal comparison.

(77) *Deg-Headed Structure*



(78) *Classical Structure*



As we will see, each structure assumes a different degree operator used for compositional interpretation. Our concern is to find out which of the structures above best fits JA comparatives. We begin, in section 2.3.1, with the Deg-Headed structure and argue that it

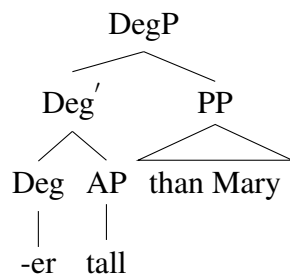
⁴ But see a third suggestion from [Bhatt and Pancheva \(2004\)](#) which builds on the Classical Analysis. For our purposes, the two structures I present will suffice.

cannot be the best option for JA comparatives. Section 2.3.2 argues for the Classical structure instead, illustrates its application to JA phrasal comparatives, and also suggests a slight modification to it so that it fits with the linear order of constituents in JA comparatives.

2.3.1 The Deg-Headed Structure

Kennedy (1997), following Abney (1987), assumes a structure that is headed by a degree morpheme (‘-er’ or *more* or *less*). The important aspect here is that this structure assumes constituency between the gradable adjective and the degree head ‘-er’, to the exclusion of the SOC (syntactically, the PP).

(79)



Under this approach, no movement is assumed. The degree morpheme *-er* is not quantificational and is thus, interpreted in situ. Kennedy (1997) adopts a Measure Function Analysis, in which gradable adjectives denote Measure Functions of type $\langle e, d \rangle$; degree morphemes have three arguments: a measure function denoted by the adjective, a degree, and an individual.

- (80) a. $\llbracket \text{tall} \rrbracket = \lambda x [x\text{'s height}]$
 b. $\llbracket \text{-er} \rrbracket = \lambda G_{\langle e, d \rangle} . \lambda d . \lambda x . [G(x) > d]$

We can translate this into a more ‘Standard’ Analysis oriented language. Following Beck et al. (2012), I will label this phrasal comparative operator associated with the Deg-Headed structure above as $\llbracket \text{-er}_{KENNEDY} \rrbracket$. Translated into a more Standard analysis type language, we arrive in (81a) at the denotation for the degree morpheme ‘-er’ that is associated with the Deg-Headed structure.

(81) Phrasal comparative of type $\langle\langle d, \langle e, t \rangle \rangle, \langle e, \langle e, t \rangle \rangle\rangle$

a. $\llbracket \text{-er}_{KENNEDY} \rrbracket = \lambda \text{Adj}_{\langle d, \langle e, t \rangle \rangle} . \lambda y_{\langle e \rangle} . \lambda x_{\langle e \rangle}$
 $\text{MAX}(\lambda d . \text{Adj}(d)(x)) > \text{MAX}(\lambda d' . \text{Adj}(d')(y))$

b. Let S be a set ordered by \leq . Then $\text{MAX}(S) = \iota s [s \in S \ \& \ \forall s' \in S][s' \leq s]$

So what is the reason behind suggesting this structure and the comparative operator that goes along with it? Some of the arguments for the Deg-Headed structure have come from A) morphological evidence for the constituency of the degree morpheme and the gradable adjective; and B) syntactic evidence that the degree morpheme and the *than*-XP never form a constituent to the exclusion of the gradable adjective. Let us start with the morphological evidence. In English, the existence of *fully* and *partially* suppletive forms provides support for a structure where the degree morpheme and the gradable adjective form a constituent. This is because some syntactic structure (typically that they are sisters) is required for morphological combination.⁵

(82) a. [-er + good] \longrightarrow better

b. [-er + tall] \longrightarrow taller

The syntactic evidence comes from the fact that the degree morpheme never surfaces as a constituent with the *than*-XP to the exclusion of the gradable adjective. Some examples from English are the following.

(83) a. This coat is [more] expensive [than that one].

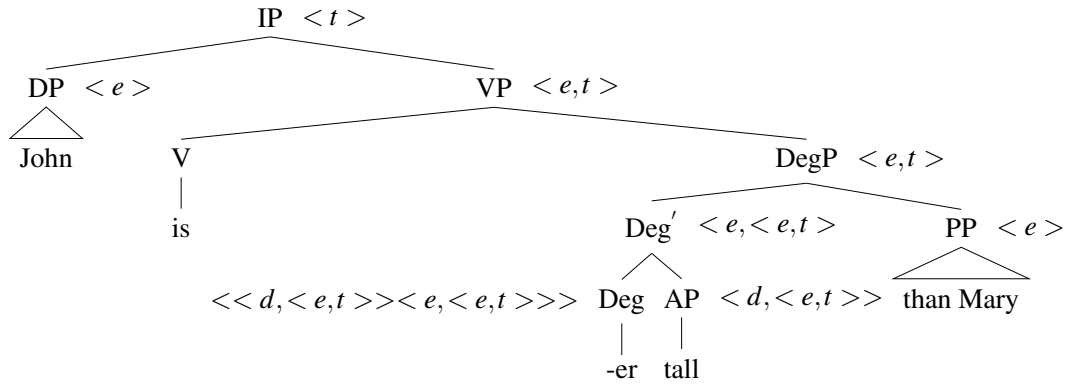
b. * John is [more than Mary] tall.

c. * This coat is [more than that one] expensive.

One technical advantage of the Deg-Headed structure is that it provides a more surface-oriented structure and excludes any unmotivated movement operations. An illustration of the Deg-Headed structure and its associated operator $\llbracket \text{-er}_{KENNEDY} \rrbracket$ at work is the following.

⁵ Abney (1987) suggests that the Gradable Adjective moves to Deg⁰ to facilitate morphological combination with the *-er* morpheme.

(84)



A typical compositional analysis following the Deg-Headed analysis is as follows, assuming the Logical Form (LF) in (85a), below.

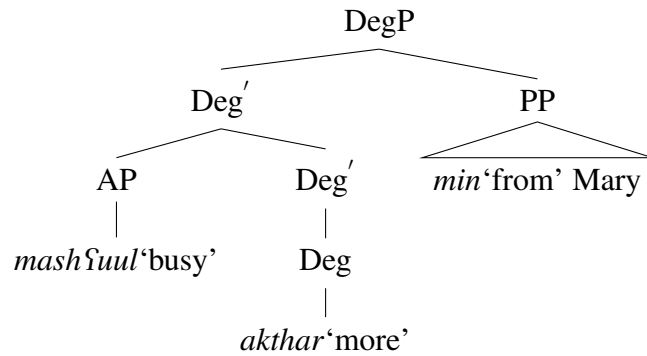
- (85) a. [John [tall -er_{KENNEDY}[than Mary]]]
- b. $\llbracket \text{tall-er}_{KENNEDY} \rrbracket =$
 $\lambda y. \lambda x. \text{MAX}(\lambda d. \text{HEIGHT}(x) \geq d) > \text{MAX}(\lambda d'. \text{HEIGHT}(y) \geq d')$
- c. $\llbracket \text{tall-er}_{KENNEDY} \rrbracket(\llbracket \text{Mary} \rrbracket)(\llbracket \text{John} \rrbracket) = 1$ iff
 $\text{MAX}(\lambda d. \text{HEIGHT}(\text{John}) \geq d) > \text{MAX}(\lambda d'. \text{HEIGHT}(\text{Mary}) \geq d')$

Our main concern here is whether the Deg-Headed structure (and the $\llbracket \text{-er}_{KENNEDY} \rrbracket$ operator) is compatible with JA comparatives. First of all, like English, JA also has partially and fully suppletive forms, though not as abundant as English.

- (86) a. [*mleeH* ‘good’ + **a-a** ‘-er’] = *aHsan* ‘better’ / **amlaH* ‘*good-er’
- b. [*Taweel* ‘tall’ + **a-a** ‘-er’] = *aTwal* ‘taller’

However, a simple explanation to the existence of partial suppletive forms is that the word *mleeH* ‘good’ in JA does not exist in MSA. This means that it does not have a tri-consonantal root with which a pattern can successfully combine. Though JA may have its own words independent of MSA vocabulary, the patterns available cannot be newly coined. The closed set of *patterns* in MSA form the same closed set of *patterns* in JA. For example, in MSA the word for ‘good’ is *Hasan*. With this, notice that both JA and MSA end up with the exact same word after the comparative pattern is added.

(89)



So far, though, we have not seen very convincing evidence that the Deg-Headed Analysis is best for JA comparatives. In fact, there are two more arguments against such structure. The first comes from the fact that in the linear order of JA comparatives, there is no way to determine that the degree morpheme and the *min*-XP never form a constituent to the exclusion of the gradable adjective. The reason is that in the linear order, the gradable adjective always appears in between the degree morpheme and the *min*-XP. Notice the different constituency possibilities bellow.

- (90) a. Ali [[mashʕuul akthar] min Sarah]
Ali busy more from Sarah
'Ali is busier than Sarah. (cf. Ali is more busy than Sarah.)
- b. Ali [[mashʕuul] akthar min Sarah]
Ali busy more from Sarah
'Ali is busier than Sarah. (cf. Ali is **more** busy **than Sarah**.)
- c. * Ali [[akthar mashʕuul] min Sarah]
Ali [[more busy] from Sarah]
'Ali is busier than Sarah.'

Additionally, the strongest evidence against the Deg-Headed structure for English comparatives comes from the fact that English exhibits scope ambiguities with respect to intensional predicates. (Heim, 2000) Notice the two different readings that arise from the sentence in (91), depending on whether *-er* scopes below (cf. (91a)) or above (cf. (91b)) the Modal verb *required*.

(91) (This draft is 10 pages long.) The paper is required to be exactly 5 pages longer than that.

a. *required* > *-er*:

The difference between the length of this paper and the required length of the paper is exactly 5 pages; no less and no more.

b. *-er* > *required*:

The difference between the length of this paper and the required length of the paper needs to 5 pages, but can be more (i.e. the paper is allowed to be 17 pages long, so long as it is at least 15 pages long.).

Heim (2000) points out that this scope interaction with intensional predicates can only arise if *-er* can take scope either below or above the modal *required*. Under the assumptions of the Deg-Headed Analysis, however, this is not possible because the Deg-Headed structure does not involve or allow movement. A sentence like (91) should be constructible in the Deg-Headed structure, but have only the reading where *required* takes scope over the degree morpheme *-er*. The fact that there is ambiguity in such intentional contexts suggests that *-er* must be allowed to move, and the ambiguity would arise from the *-er* either taking a low position or a high position, with respect to *required*.

Interestingly enough, JA exhibits the same ambiguity with respect to intensional predicates. Both of the readings in (92a) and (92b) are available. This means that the structure assumed for JA comparatives must allow for movement.

(92) (haḏeek il-waraga ʕafar SafHaat) il-waraga ilnihaʔiyyeh maTluub tkun bilDabT
(that def.paper ten pages) def.paper def.final required be exactly
Xamis SafHat akthar min haḏeek
five pages more from that.

‘(That paper is ten pages long.) The final paper is required to be exactly 5 pages longer than that.’

a. *required* > *-er*: The paper must be **exactly** 15 pages long; no less and no more

b. *-er* > *required*: The paper must be at least 15 pages. It is allowed to be longer than that.

The final disadvantage of the Deg-Headed structure, that we will discuss here, is that the Deg-Headed structure can not accommodate Attributive comparatives and Adverbial Comparatives. Take the Attributive comparative ‘John ate *more biscuits than Mary*’, for example. The structure assumed by the Deg-Headed analysis just does not allow for a structure requiring the DP ‘biscuits’ to appear after a degree morpheme like *more*. In fact, [Beck et al. \(2012\)](#) suggest that if a language has **only** predicative comparative constructions, then one may assume the Deg-Headed structure (given there is no argument against it), but if a language has the whole range (i.e. Predicative, Attributive, and Adverbial Comparative constructions), then we can safely assume that the Deg-Headed structure is not the correct choice. This means also that the operator $\llbracket -er_{KENNEDY} \rrbracket$ that is a by-product of the Deg-Headed structure is also ruled out.

To summarize, the Deg-Headed analysis provides a more convenient surface-oriented structure, but does not assume any movement of the degree morpheme *-er*, and does not assume constituency between the *-er* and the *than*-XP. This is because it does not assume quantificational status of the degree morpheme *-er*. As a result, it cannot explain why there exist ambiguous readings with respect to *-er* and the modal *required* in intensional contexts. This is perhaps the strongest argument against the Deg-Headed Analysis. It also cannot accommodate the structures required for Attributive and Adverbial comparison. The argument about the existence of suppletive forms, as we have discussed above, receives a counterclaim from the observation that a comparative morpheme and an adjective can have a trace intervene and still combine morphologically. In the next section, we will look at the Standard Analysis that we have made use of in the previous chapter, and the Classical Structure it assumes.

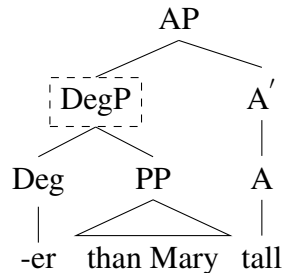
2.3.2 The Classical Structure

2.3.2.1 The Basic Idea and Some Advantages

Another option for the syntax of comparison comes from the analysis of comparison that we introduced in Chapter 1; namely, the ‘Standard’ analysis. The ‘Standard’ analysis

assumes the structure in (93), which is referred to as the *Classical* architecture. (The structure in (93) is taken from [Bhatt and Pancheva \(2004\)](#), ex. (15))

(93) Underlying Form via the *Classical* Architecture

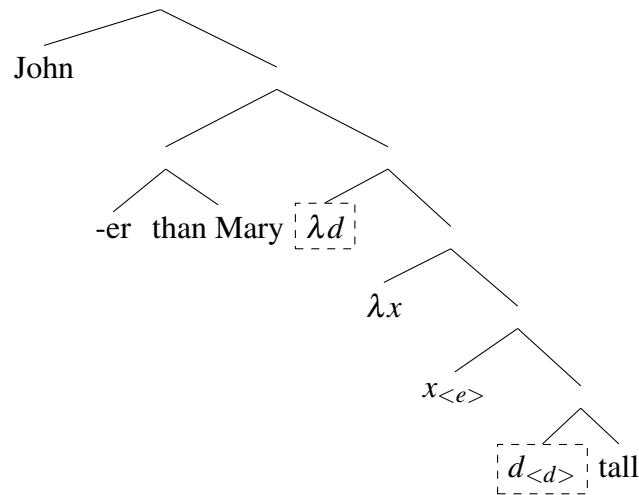


There are several variants of the Classical Architecture (see, for example, [Bresnan \(1973a\)](#); [Hendrick \(1978\)](#); [Izvorski \(1995\)](#); [Lechner \(1999\)](#); [Larson \(1991\)](#)), but here, I want to focus on what makes the Classical structure different from the Deg-headed structure; namely, that the Classical structure assigns constituency to *-er* and the *than*-XP. *-er* and the *than*-XP form a degree quantifier, which is a syntactic specifier of the gradable adjective (see [Chomsky \(1965\)](#); [Bresnan \(1973a\)](#); [Heim \(2000\)](#); [Bhatt and Pancheva \(2004\)](#)).⁷ The gradable adjective is the head that projects, not the degree morpheme itself. The Degree Phrase acts as a specifier to the gradable adjective.

We are reminded that under the basic assumptions of the Standard Analysis, *-er* is quantificational, just as *every* is quantificational in Nominal quantification (see section 1.2 above). This means that at LF, *-er* must raise to a matrix clause position from where it can take scope over and bind the degree variable in the gradable adjective, thus achieving Degree Abstraction in the matrix clause.

⁷ This aspect of the Classical Analysis accounts for selectional restrictions between the *-er* and the *than*-XP in English. For example, if the degree morpheme was *-er* then only *than* may follow, as in 'John is tall-er than/*as Mary', but if it was *as*, then only *as* may follow as in 'John is as tall as Mary'. This is not what concerns us here. Our focus here is the search for a structure that allows an explanation of the *minimal requirement* scope ambiguities that arise. For more on selectional restrictions, see [Bhatt and Pancheva \(2004\)](#)

(94) Logical Form



It is the assumption that *-er* is quantificational and raises at LF that enables us to account for the ambiguity that arises with respect to the degree morpheme *-er* and the modal *required* in intensional contexts. Recall that Heim (2000) explains that such ambiguity arises due to the fact that *-er* can take scope either in a low position (below *required*) or in a high position (above *required*). This ambiguity receives an elegant explanation when we assume the Classical Structure, since in the Classical Structure, *-er* is quantificational and must raise at LF. The two readings we arrive at in the following, for English, is thus a by-product of the *low* or *high* scope position of the raised *-er* at LF.

(95) (This draft is 10 pages long.) The paper is required to be exactly 5 pages longer than that.

- a. *required* > *-er*: The paper is exactly 15 pages long; no less and no more.
- b. *-er* > *required*: The paper must be at least 15 pages. It is allowed to be 16 pages long.

Since the JA counterpart to (95) (repeated here as (96)) is also ambiguous in the same way, we can assume that it is the Classical structure, and the movement of *-er* that goes along with it, that explains such ambiguity.

- (96) (haḏeek il-waraga ʕafar SafHaat) il-waraga ilnihaʔiyyeh maTluub tkun bilDabT
 (that def.paper ten pages) def.paper def.final required be exactly
 Xamis SafHat akthar min haḏeek
 five pages more from that.
 ‘(That paper is ten pages long.) The final paper is required to be exactly 5 pages
 longer than that.’
- a. *required* > *-er*: The paper is exactly 15 pages long; no less and no more
 - b. *-er* > *required*: The paper must be at least 15 pages. It is allowed to be 16 pages
 long.

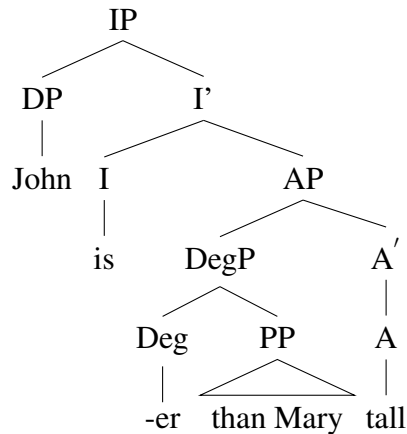
This makes for a strong argument for the Classical architecture assumed by the Standard analysis, while arguing against the Deg-Headed architecture. Accordingly, I will adopt the proposal from the Classical analysis that *-er* and the *than*-XP form a semantic constituent, and that *-er* raises at LF for scope reasons. However, we cannot take the **entire** structure proposed by the Classical analysis because, as we will see in the next section, it will have to be modified to fit the JA linear order of constituents in comparative constructions. The important aspect we adopt of the Classical structure is that *-er* and the *than*-XP form a constituent to the exclusion of the gradable adjective.

2.3.2.2 The Classical Architecture Applied to JA

Given the Classical structure, the comparative in (97) has the Underlying Form in (98), below.

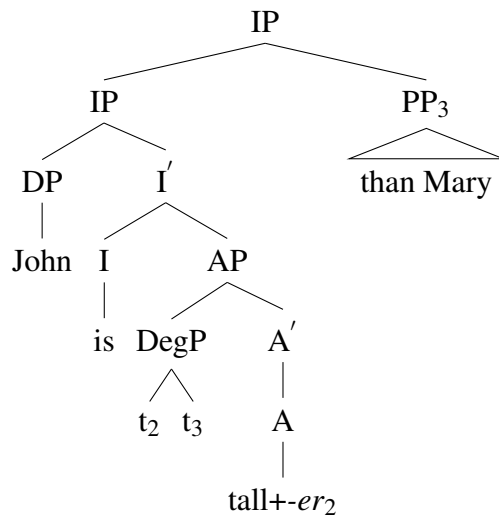
- (97) John is taller than Mary.

(98) Underlying Form via the *Classical* Architecture



The surface order below is achieved via *extraposition* of the *than*-XP. Next, the comparative form of the adjective is achieved by the combination of the comparative morpheme ‘-er’ with the adjective. (Bresnan and Grimshaw, 1978; Abney, 1987)

(99) Surface Form



Let us focus on this extraposition for a moment. Heim (2000) adopts the Classical structure, but notes that the extraposition aspect is problematic. First of all, as Bhatt and Pancheva (2004) suggest, analogous extraposition of relative clauses is never obligatory as is the extraposition of the *than*-XP in comparatives. Second, this extraposition does not feed LF (cf. (94) above). Third, it is a movement operation that seems to be motivated by nothing more than the need to achieve the required surface order (in English).

- (100) a. John is taller than Mary.
 b. * John is -er than Mary tall.
 c. John is more intelligent than Mary.
 d. * John is more than Mary intelligent.

Fourth, it violates the condition on Left Branch Extraction. Specifically, [Ross \(1967: 127\)](#) states the Left Branch Condition as in (101).

- (101) No NP which is the leftmost constituent of a larger NP can be reordered out of this NP by a transformational rule.

The effects of the Left Branch Condition can also be seen as operational in APs. Take the following examples from Adverbial modification of Adjectives, as illustration to this effect.

- (102) a. John is **very** tired of working 12 hour shifts.
 b. * John is tired of working 12 hour shifts **very**.
 c. * John is tired **very** of working 12 hour shifts.

However, extraposition does not seem to be required in JA comparatives. JA does not face the same problems that arise for English's need from extraposition given the Classical structure. Recall our discussion in Chapter 1 about the Adjectival system in JA. In terms of modification and Head / Spec word order, JA is right headed. Take the following examples as illustration to this point.

- (103) a. John is **very** *tall*.
 b. The coat is **more** *expensive* than the dress.
 c. John ate **more** *biscuits* than Mary.
 d. * John is *tall* **very**.
 e. * The coat is *expensive* **more** than the dress.
 f. John ate *biscuits* **more** than Mary.
 ≠ John ate more biscuits than Mary.

Notice the word order between the adjective and the AdvP in JA, and how this order is different from the preceding English examples.⁸

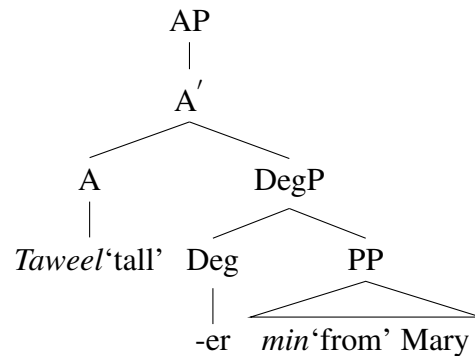
- (104) a. John *Taweel* **ktheer**
 John tall very
 ‘John is **very** *tall*.’
- b. John *mashyul* **akthar** min Mary
 John busy more from Mary
 ‘John is **more** *busy* than Mary.’ = ‘John is busier than Mary.’
- c. John akal *baskut* **akthar** min Mary
 John ate biscuits more from Mary
 ‘John ate **more** *biscuits* than Mary.’

What this means is that a more plausible underlying form of the Arabic AP is as in (105) not as in the English order in (106). In (105), the DegP is a complement to the Adjective, not a specifier.

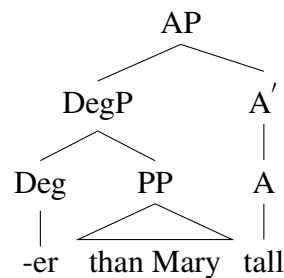
⁸ Note that the reverse order where the AdvP precedes the Adjective is possible as in (0b), but is rarely used and also has a slightly different meaning. (0b) means that the height of John is TOO much, exceeding what is tolerable/allowed, for example, and the AdvP, in this case receives focus stress.

- (i) a. John *Taweel* **ktheer**
 John tall very
 ‘John is **very** *tall*.’ = but he can still participate
- b. John **ktheer** *Taweel*
 John VERY tall
 ‘John is TOO *tall*. = so he is not allowed to participate’

(105) Underlying Form of JA Gradable AP



(106) Underlying Form of English Gradable AP



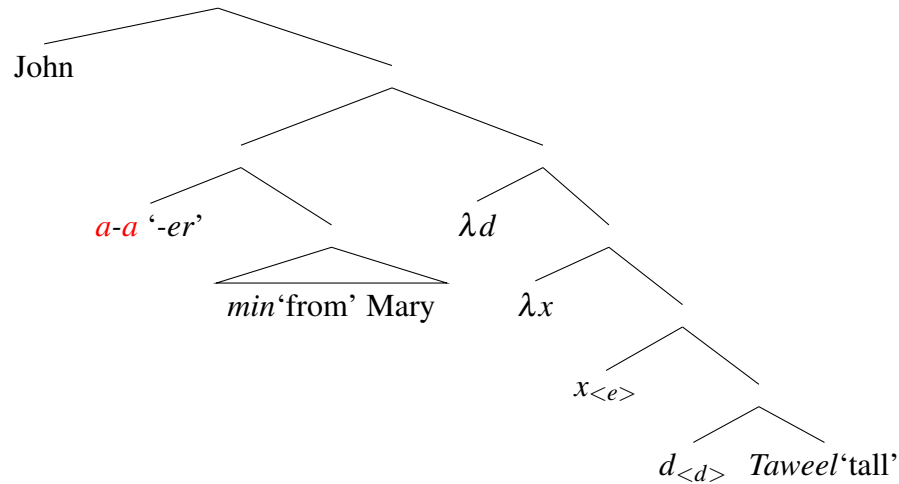
The semantic composition, however, will not be affected in the JA structure assumed so far. It is not a problem for the DegP to be a complement of the Adjective. The semantic composition should still be applicable. Given a basic predicative phrasal comparative as in (107a) below, the analysis should work out for its JA counterpart in (107b) in a way that does not cause a mismatch between syntactic structure and semantic composition.

- (107) a. John is taller than Mary.
 b. John aTwal min Mary.
 John taller from Mary
 'John is taller than Mary.'

Recall that in the previous section we established that the underlying form of the complement of *min* is phrasal. This means (following predictions of the Direct Analysis developed in Heim (1985) and Bhatt and Takahashi (2011)) that the SOC must be of Type $\langle e \rangle$, just like the SOC 'Mary' in the English illustration above. What is left then is to assume that the preposition *min* 'from' semantically acts as the Standard Marker 'than' in

English. We also need to check if the sentence in (107b) involves degree abstraction in the matrix clause. One way to test this is to see if it has the same interpretation as its English counterpart does. In fact we find that it does have the same interpretation as indicated by the English translation for (107b), and so we can assume that *-er* raises in the matrix clause to take scope over and bind a degree variable (cf. (108) below).

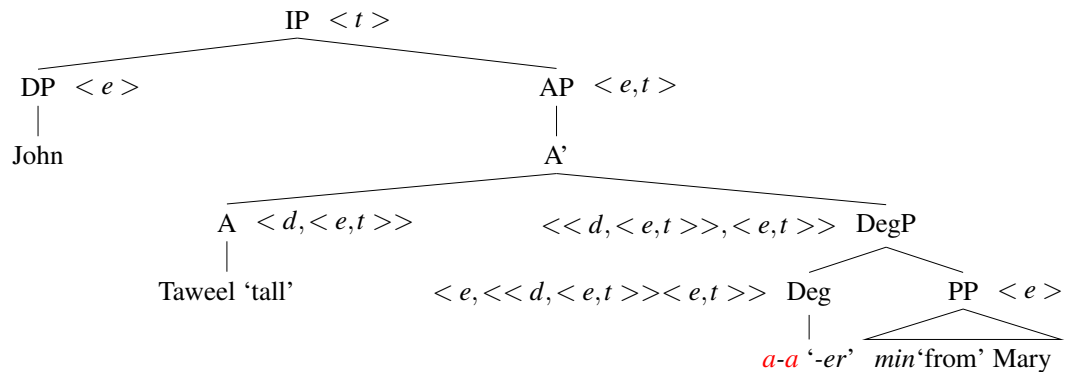
(108) Logical Form



At this point, the composition should work itself out, as follows.

(109) $\llbracket -er_{HEIM} \rrbracket = \lambda y_{\langle e \rangle} . \lambda Adj_{\langle d, \langle e, t \rangle \rangle} . \lambda x_{\langle e \rangle} .$
 $MAX(\lambda d . Adj(d)(x)) > MAX(\lambda d' . Adj(d')(y))$

(110)



For convenience sake, I will henceforth use ‘-er’ to refer to both the English *-er* and the JA ‘*a-a*’. A compositional derivation for the JA phrasal comparative using the phrasal comparative operator $\llbracket -er_{HEIM} \rrbracket$ is illustrated in (111).

- (111) a. John aTwal min Mary.
 b. $\llbracket [-er \text{ min Mary}] \rrbracket =$
 $\lambda Adj.\lambda x. MAX(\lambda d. Adj(d)(x)) > MAX(\lambda d'. Adj(d')(Mary))$
 c. $\llbracket [2[1[t_1, \langle e \rangle t_2, \langle d \rangle \text{Taweel}]]] \rrbracket = \lambda d.\lambda x_{\langle e \rangle}. HEIGHT(x) \geq d$
 d. $\llbracket [-er \text{ min Mary}] \rrbracket (\llbracket [2[1[t_1, \langle e \rangle t_2, \langle d \rangle \text{tall}]]] \rrbracket)(\llbracket \text{John} \rrbracket) = 1$
iff $MAX(\lambda d. HEIGHT(John) \geq d) > MAX(\lambda d'. HEIGHT(Mary) \geq d')$

To recap, the Classical structure as it stands is able to account for the scope ambiguity that arises with *-er* and the modal *required*, but runs into some syntactic problems of its own. First, extraposition in English comparatives is not motivated and does face Left Branch Condition problems. These problems do not arise in the JA structure assumed since the syntax reflects the exact surface linear order, and the semantic composition successfully applies. We can, thus safely assume the modified version of the Classical structure for JA (cf. 105).

2.4 Summary

In this chapter, we investigated the syntax and semantics of the *min*-type phrasal comparative construction in JA. We started by ruling out that a Contextual analysis was an option for JA. This was done by bringing into light evidence from Variation in Interpretation and Island Sensitivity (Beck et al., 2004, 2012), Generated Implicatures of the Positive Form (Kennedy, 2007; Sawada, 2007), Minimum Standard Gradable Adjectives (Kennedy, 2007), and Crisp Judgment contexts (Kennedy, 2007). This showed that JA comparatives necessarily required a semantic analysis based on compositional semantics. The first step in uncovering a compositional semantics was to determine the semantic type of the SOC, which we have done in section 2.2 by investigating the underlying form of the complement of *min* in JA phrasal comparatives. We reached the conclusion that the complement of *min* in the

phrasal *min*-type comparative was underlyingly phrasal. Section 2.3 then proceeded to investigate the syntactic structure we should assume for the matrix clause of JA comparatives. We investigated two main structures suggested in the literature and found that one of them; namely, the Deg-Headed structure, was not the best option for JA comparatives. We then defended our position that the Classical Structure and the $[-er_{HEIM}]$ phrasal comparative operator was the most suitable choice for JA comparatives. The strongest evidence for the Classical structure came from ambiguous readings necessitating LF movement of the degree morpheme. We also found that the Head-Spec direction within the AP had to be reversed for JA, not affecting the semantic composition in the process.

Chapter 3

illi-TYPE COMPARATIVES

In this chapter, we extend our analysis to cover the *illi*-type comparative. We have already seen in the previous chapter that JA makes use of the Phrasal *min* comparative. We also observed that the JA preposition *min*, which acts as the Standard Marker in all JA comparatives, never selects for a CP. The question now is whether clausal comparatives are also available in the language. The following is a typical example of an English clausal comparative.

(112) John ate more biscuits than Muna did.

This English clausal comparative may be roughly translated into JA. For a Native Speaker of JA, two possible translations are available, one that makes use of *illi* and another that makes use of *ma*.

- (113) a. Ali akal baskut akthar min **illi** Rami akal-oh
Ali ate biscuits more from *illi* Rami ate-it
Lit: Ali ate more biscuits than the ones that Rami ate-them.
c.f. ‘Ali ate more biscuits than Rami ate.’
- b. Ali akal baskut akthar min **ma** Rami akal
Ali ate biscuits more from *ma* Rami ate
Lit: Ali ate more biscuits than what Rami ate.
c.f. ‘Ali ate more biscuits than Rami ate.’

In this chapter, we focus our attention on the comparative with *illi* in (113a). Although it is used as a rough translation to the English clausal comparative in (112), we still notice that its literal translation is not an exact equivalent to the meaning intended by the English sentence. Specifically, the English version compares degrees and roughly amounts to a

comparison between **the number of cookies** that John ate and **the number of cookies** that Muna ate. The comparative with *illi*, on the other hand, roughly amounts to a comparison between **the cookies** that Ali ate and **the cookies** that Rami ate. In a sense, the *illi* comparative seems to be comparing individuals, or type <e> entities, rather than degrees. So even though a translation of an English clausal comparative may produce a JA comparative with *illi*, it still does not seem to be an exact equivalent, and in fact, produces a literal translation more like a phrasal comparative where the Standard of Comparison is an individual type <e>, in this case ‘cookies’. Though the *illi* comparative clearly involves some clausal material after the Standard Marker *min*, it does not necessarily have to be a clausal Comparative.

The *illi* comparative, based solely on the literal translation, quite clearly indicates a type <e> SOC. We need to put this claim to the test, however, because the complement of *min* in *illi* comparatives contains clausal material. Accordingly, the first section (section 3.1) will apply our semantic tests to the JA comparative with *illi*. In particular, we will test for the availability of Subcomparatives of Degree, Subcomparatives of Number, and Negative Island Effects. The expectation is that the *illi* comparative will show semantic traits (based on grammaticality judgments of the semantic tests), that are more in line with a phrasal comparative, rather than a clausal Comparative, based on the fact that the literal translation amounts to a phrasal comparative denotation. This is also what we would expect if the JA preposition *min* only selects for phrasal complements.

The results will show that *illi* comparatives, despite containing clausal material in the complement of *min*, must be phrasal Comparatives in the semantic sense of the term, meaning that they must involve an SOC that is of the semantic type <e>. Section 3.2 will investigate a possible syntactic explanation as to why *illi* comparatives produce phrasal comparative denotations. In particular, we will examine the syntactic structure of the complement of *min* in *illi* comparatives. We will find that the complement of *min* with *illi*-type comparatives must necessarily be underlyingly phrasal. Specifically, it will be concluded that the complement of *min* with *illi*-type comparatives is a relative clause-like structure (meaning it is just a DP embedding a CP).

With this conclusion in hand, section 3.3 draws upon further notes concerning the

behavior of *illi* with Subcomparatives of Number, and there seemingly different behavior from Japanese counterparts. In conclusion, we will find that *illi* comparatives are more like Japanese comparatives in that they involve an SOC that denotes individuals, not degrees. Any deviation from parallel grammaticality judgments to those found in Japanese data sets will be shown to be resulting of language-specific syntactic behavior, not semantic differences. Section 3.4 provides an illustration of how a compositional semantics may apply to *illi* comparatives, and the final section summarizes our discussions on *illi* comparatives.

3.1 The *illi*-Type Comparatives Data

This section is divided into three parts. Each part presents a data set from JA *illi* comparatives and compares the grammaticality judgments of the latter with those of English and Japanese, with the idea that JA *illi* comparatives should pattern with Japanese data, since Japanese comparatives' SOCs are analyzed as type <e> (see Kennedy (2007)). In particular, we will cover data concerning Negative Island Effects, Subcomparatives, and variation in acceptability judgments. These are key aspects of an investigation of the semantics of comparatives and have been drawn upon in several discussions concerning the semantics of Japanese comparatives (see, for example, Beck et al. (2004); Kennedy (2007); Oda (2008); Beck et al. (2009); Bhatt and Takahashi (2011); Sudo (2009) to name a few), which, as pointed out in chapter 1, are semantically very similar to JA comparatives. As mentioned in the previous section, it is expected that *illi* comparatives should have SOCs of type <e>, even though they contain clausal material in the complement of *min*. Such a prediction has two sources: a) the literal translation of an *illi* comparative amounts to individual comparison denotations (i.e. type <e> SOC), and b) the selectional properties of the preposition *min* suggest that only phrasal, not clausal, comparatives exist in JA. Our predictions are borne out as we will see from applying our semantic tests to the JA *illi* comparative.

3.1.1 Lack of Negative Island Effects

In the sentences in (114), the JA comparative is grammatical, while the English counterpart is not.

- (114) a. * John bought a more expensive book than **no one** did.’
 b. Ali iftara ktaab aʕla min illi **ma Hada** iftara-h
 Ali bought book expensive.more from *illi* no person bought-it
 ‘*Ali bought a more expensive book than nobody did.’

This is what we would expect if *illi* comparatives involve individual comparison. Let us see why this is the case. The ungrammaticality of the English sentence in (114a) is attributed to the Negative Island Effect (NIE). Rullmann (1995) observes that negation in comparatives affects the grammaticality of the sentences. The NIE is a semantic effect whereby the maximal degree in the Standard of Comparison is undefined, and thus the semantics fails to identify a maximal degree of an undefined set. Accordingly, in the English sentence in (114a), no maximal price can be defined, thus, the semantics fails. To see what an undefined maximal degree entails, the Standard analysis regarding negation in comparatives would suggest the following composition for the sentence in (114a).

- (115) a. [[-er [1 [than nobody did buy a t1 expensive book]]] [1 [John bought a t1 expensive book]]]
 b. [-er]($\lambda d'$. nobody bought a d' -expensive book)(λd . John bought a d -expensive book)
 c. $\text{MAX}(\lambda d$. John bought a d -expensive book) > $\text{MAX}(\lambda d'$. nobody bought a d' -expensive book)
 d. The degree d such that John bought a d -expensive book exceeds the degree d' such that nobody bought a d' -expensive book.

Thus, as can be seen from (115d), there can be no defined maximal degree of price to compare with, hence, the ungrammaticality of the sentence in (114a). For example, imagine that the most expensive book that anyone other than John bought cost \$99. Then, it is true that nobody (other than John) bought a \$100 book. But it is also true that nobody bought a \$200 book, or a \$300 book. Hence, the maximal degree d such that nobody bought a d -expensive book is undefined. However, the JA counterpart is grammatical. What could be the reason behind this grammaticality? We have already mentioned in chapter 1 that degree

abstraction **does** exist in JA phrasal comparatives, as exemplified by the fact that there are narrow and wide scope readings in examples where the degree operator takes scope either below or above a modal, such as ‘required’. The reader is reminded of the following sentence and its two different readings.

- (116) (haḏeek il-waraga ʕafar SafHaat) il-waraga ilnihaʔiyyeh maTluub tkun bilDabT
 (that def.paper ten pages) def.paper def.final required be exactly
 Xamis SafHat akthar min haḏeek
 five pages more from that.
 ‘(That paper is ten pages long.) The final paper is required to be exactly 5 pages
 longer than that.’
- a. *required* > *-er*: The paper must be **exactly** 15 pages long; no less and no more
 - b. *-er* > *required*: The paper must be at least 15 pages. It is allowed to be longer
 than that.

We have already ruled out the possibility that JA comparatives were contextual (see section 2.1). The only other option is that they are compositional comparatives. One suggestion comes from Kennedy (2007) for a similar grammaticality judgment observed in Japanese comparatives. Like the JA comparative in (114b) (repeated here as (117b)), the Japanese counterpart also does not exhibit the NIE.

- (117) JA
- a. * John bought a book more expensive than no one did.
 - b. Ali iftara ktaab aʕla min illi ma Hada iftara-h
 Ali bought book expensive.more from *illi* no person bought-it
 ‘*Ali bought a more expensive book than nobody did.’

- (118) Japanese
- a. * John bought a book more expensive than no one did.
 - b. John-wa [**daremo** kawa-naka-tta no yori(mo)] takai hon-o katta
 John-Top anyone buy-neg-past *no yori* expensive book-Acc bought
 ‘John bought a more expensive book than (the one) that nobody bought.’

According to Kennedy (2007) the fact that Japanese comparatives like the one in (118b) above, do not exhibit NIEs is due to the semantic type of Standards of Comparison in Japanese. Kennedy explains the difference between English and Japanese SOC's as in the following parameter, where 'Complex' is a term used to refer to surface clausal SOC's.

- (119) a. Complex standards in Japanese are (only) type $\langle e \rangle$.
b. Complex standards in English are (potentially) type $\langle d \rangle$.

As we stated in the beginning of this section, for a NIE to take place, it needs to be the case that there can be no defined maximal degree in the SOC. The fact that the *illi* comparative is grammatical means that it is not affected by a NIE. The sentence should be felicitous, only when we can uniquely identify the book(s) that nobody bought. Therefore, it makes sense to say that (114b) is grammatical because there is a specific book that can be defined, and this specific book has a defined price. This defined price now serves as the maximal degree that the English sentence was lacking. The only semantic explanation for the lack of a NIE is that the SOC of *illi* comparatives is, in fact of the semantic type $\langle e \rangle$. (114b) is grammatical because it does not compare degrees, but individuals. Thus, the problem of an undefined maximal degree in the SOC does not arise in the first place, because a maximum 'price' CAN be defined. In a sense, since there is a certain book that nobody bought, then that certain book must have a specific defined price. Therefore, there is no degree operator in the embedded clause, in the first place. If there is no degree operator in the embedded clause then there is no failed maximalization attempt in the semantics because *illi* compares individuals, not degrees.

3.1.2 Lack of Subcomparatives

Subcomparatives are another tool that we can make use of to test for the semantic type of the SOC. The data on subcomparatives, provides further support for the claim that *illi* comparatives involve individual comparison. *illi* comparatives pattern in a similar fashion to Japanese, but are different from English clausal comparatives. Subcomparatives are

a form of comparatives where a QP degree variable is not pronounced, but crucially, remnant material is pronounced. According to the Classical analysis (Bresnan (1973b, 1975)) on subcomparatives, a QP modifying ‘bananas’ in (121a) and ‘books’ in (121b) has been extracted.¹ The following examples from English are illustrative to this point. There are two types of Subcomparatives that I will be discussing here: Subcomparatives of Degree and Subcomparatives of Number.

(120) Subcomparatives of Degree

- a. The knife is **longer** than the cupboard is ϕ -**deep**. $\phi = d$ (to this degree)
- b. The table is **wider** than the rug is ϕ -**long**. $\phi = d$ (to this degree)

(121) Subcomparatives of Number

- a. John ate more biscuits than Mary ate ϕ -bananas. $\phi = d$ -many
- b. John wrote more articles than Mary wrote ϕ -books. $\phi = d$ -many

There is no difference between Subcomparatives of Degree and Subcomparatives of Number in terms of the semantics given them by the Standard analysis, as shown in (122).

- (122) a. $\text{MAX}(\lambda d. \text{John ate } d\text{-many biscuits}) > \text{MAX}(\lambda d. \text{Mary ate } d\text{-many bananas})$
 b. $\text{MAX}(\lambda d. \text{the knife is } d\text{-long}) > \text{MAX}(\lambda d. \text{the cupboard is } d\text{-deep})$

According to data on Japanese comparatives in Beck et al. (2004), Japanese does not allow Subcomparatives of Degree, but does allow Subcomparatives of Number.

- (123) a. *Tana-wa [doa-ga hiroi (no) yori (mo)] (motto) takai.
 shelf-Top [door-Nom wide NO YORI (mo)] (more) tall
 ‘The shelf is **taller** than the door is **wide**.’
- b. Hanako-wa [Taroo-ga ronbun-o kaita yori] takusan hon-o kaita.
 Hanako-Top [Taroo-Nom paper-Acc wrote YORI] many book-Acc wrote
 ‘Hanako wrote **more books** than Taroo wrote **papers**.’

¹ This extraction is debated in the literature as Wh-movement fails in similar cases, a fact known since Ross (1967). See Grimshaw (1987) for further details and an alternative analysis where no movement is involved.

The explanation given in [Kennedy \(2007\)](#) explains the data in (123) as being due to the fact that Japanese SOC's denote individuals, not degrees. As mentioned in the previous chapter, in order for Subcomparatives of Degree to work, a change in dimension or scale must take place, and this change necessarily requires Degree Abstraction in the embedded clause. Given that the SOC in Japanese denotes an individual, not a degree, then there could be no degree abstraction in the embedded *yori*-clause, hence the grammaticality of (123b).

If we are to maintain the claim that *illi* comparatives are individual comparisons, then we would expect that they should not allow for Subcomparatives of Degree, since no degree abstraction can take place in a type <e> SOC. This is exactly what we find. Taking only the [Beck et al. \(2004\)](#) data into consideration, JA *illi* comparatives present uniquely different judgments on subcomparatives that do not fit either the English data or the Japanese data of [Beck et al. \(2004\)](#). In particular, JA is similar to Japanese in not allowing so called 'Subcomparatives of Degree', but, crucially, does not allow Subcomparatives of Number, either.

- (124) a. * Ali akal baskut **akthar** min illi Muna aklat-oh **muz**
 Ali ate biscuits more from *illi* Muna ate-it bananas
 'Ali ate more biscuits than Muna ate bananas.'
- b. * il-sikeeneh aTwal min illi il-durj **yameeg**
 def.knife taller from *illi* def.cupboard deep
 'The knife is longer than the cupboard is deep.'

The data, thus, shows that Subcomparatives (of Degree or of Number) are not allowed in JA *illi* comparatives. The explanation as to why Subcomparatives of Degree are not allowed will have to be what we have mentioned in the beginning of this chapter; that the SOC in *illi* comparatives denotes an individual, rather than a degree, as is the case in Japanese.

The question now is why Subcomparatives of Number are banned in JA *illi* comparatives, but are allowed in Japanese. We will return to this in more detail in section 3.3. For now, though, it suffices to note that the data presented in [Beck et al. \(2004\)](#) does not give the full picture. The original contrast of Japanese data goes back to [Ishii \(1991\)](#). In particular,

we find that a distinction could be made between grammaticality judgments based on the use or not of the nominalizer *no*, in the Japanese sentences above. In particular, the sentence in (123b) (repeated here as (125a)), is ungrammatical with the nominalizer *no*, as illustrated in (125b).

- (125) a. Hanako-wa [Taroo-ga ronbun-o kaita yori] takusan hon-o kaita.
 Hanako-Top [Taroo-Nom paper-Acc wrote YORI] many book-Acc wrote
 ‘Hanako wrote more books than Taroo wrote papers.’
- b. * Hanako-wa [Taroo-ga ronbun-o kaita **no** yori] takusan hon-o
 Hanako-Top [Taroo-Nom paper-Acc wrote *no* YORI] many book-Acc
 kaita.
 wrote
 ‘*Hanako wrote more books than **the ones** Taroo wrote papers.’

The sentence in (125b) is ungrammatical as a Subcomparative of Number, just like the *illi* Subcomparative of Number is (c.f. (124a)).² Accordingly, we see that JA patterns with Japanese in Subcomparatives of Degree and Subcomparatives of Number in that both languages do not allow them. The reader is reminded that, according to Kennedy (2007), Japanese complex Standards are only type <e>. We also can see from our test data for JA, so far, that JA *illi* comparative SOCs are also type <e>. The fact that the Japanese data may show different behavior regarding Subcomparatives of Number will be strange, indeed. But, as we have just seen in this section, *illi* comparatives are, in fact, near counterparts of Japanese comparatives with the nominalizer *no*.

3.1.3 Variation in Acceptability Judgments

As we have seen in chapter 1, one frequently brought up aspect of comparison in Japanese in the literature was the fact that Japanese comparatives exhibited a contrast in acceptability judgments among certain Japanese comparatives that did not exist for their respective English counterparts. The following Japanese comparatives in (127) show variation

² Toshiko Oda (through personal communication) suggests that the grammaticality judgment for (125b) should be [?] instead of [*]. She nevertheless agrees that it is ungrammatical as a Subcomparative of Number.

in acceptability judgments, while there is no such variation between the English comparative sentences in (126).

(126) English

- a. John bought a **more expensive** umbrella than Mary did.
- b. John bought **more** umbrellas than Mary did.
- c. John bought a **longer** umbrella than Mary did.

(127) Japanese

- a. ? Taroo-wa [Hanako-ga katta yori (mo)] **takai** kasa-o
Taroo-TOP [Hanako-NOM bought *yori* (mo)] expensive umbrella-ACC
katta.
bought
'Taroo bought a more expensive umbrella than Hanako did.'
- b. Taroo-wa [Hanako-ga katta yori] **takusan(-no)** kasa-o
Taroo-TOP [Hanako.NOM bought YORI] many(-GEN) umbrella-ACC
katta
bought
'Taroo bought more umbrellas than Hanako did.'
- c. ?* Taroo-wa [Hanako-ga katta yori] **nagai** kasa-o katta.
Taroo.TOP [Hanako.NOM bought YORI] long umbrella-ACC bought
'Taroo bought a longer umbrella than Hanako did.'

Beck et al. (2004, 2009) suggest that Japanese employs a form of Contextual Comparison (see section 2.1 for details). The idea can be summarized as suggesting that the source of variation in acceptability is that when one speaks of 'buying' an umbrella, it is the 'price' of the umbrella that is brought to the forefront of the discourse, not the specific specifications of the umbrella. It is for this reason that (127c) above is not acceptable, since the focus of the discourse is shifted to the quality of the umbrella, rather than remaining true to the discourse topic and discussing the price of the umbrella. But, as we mentioned earlier, the data in Beck et al. (2004) do not give the full picture. In fact, with the nominalizer *no*, the sentences in (127a) and (127c) become grammatical, and their translations change as well.

- (128) a. Taroo-wa [Hanako-ga katta **no** yori (mo)] **takai** kasa-o
 Taroo-TOP [Hanako-NOM bought NO *yori* (mo)] expensive umbrella-ACC
 katta.
 bought
 ‘Taroo bought a more expensive umbrella than the one that Hanako did.’
- b. Taroo-wa [Hanako-ga katta **no** yori] **nagai** kasa-o katta.
 Taroo.TOP [Hanako.NOM bought NO YORI] long umbrella.ACC bought
 ‘Taroo bought a longer umbrella than the one that Hanako did.’

If JA *illi* comparatives behave like Japanese comparatives with the nominalizer *no*, and are indeed individual comparatives, then they too are expected not to show a contrast in acceptability judgments between the use of a quality gradable predicate like ‘longer’ and a quantity gradable predicate like ‘more’. This is exactly what we find. The following JA counterparts to the Japanese sentences above with the nominalizer *no* in (128), show that no variation in acceptability judgments exists.

- (129) a. Ali ishtara famsiyyeh **ayla** min **illi** Sarah ishtara.t-ha
 Ali bought umbrella more.expensive from *illi* Sarah bought.FEM.it
 ‘Ali bought a more expensive umbrella than Sarah did.’
- b. Ali ishtara famsiyyeh **aTwal** min **illi** Sarah ishtara.t-ha
 Ali bought umbrella longer from *illi* Sarah bought.FEM.it
 ‘Ali bought a longer umbrella than Sarah did.’
- c. Ali ishtara famsiyyaat **akthar** min **illi** Sarah ishtara.t-hin
 Ali bought umbrellas more from *illi* Sarah bought.FEM.them
 ‘Ali bought more umbrellas than Sarah did.’

We have concluded that the JA *illi* facts cannot be explained by a contextual analysis on par with that given for Japanese in Beck et al. (2004). The fact that there is no variation in acceptability between the sentences in (129) provides further support for the suggestion that JA comparatives are not contextual, and for the claim that they involve SOCs of type <e>.

3.1.4 Summary of *illi*-Type Comparatives Data

We started this chapter by making the claim that *illi* comparatives displayed, quite clearly from the get go, that they involved individual comparison rather than degree comparison, despite involving clausal material in the complement of *min*. To confirm this claim, we applied three semantic tests, all of which confirmed that the *illi* comparative SOC must be of type <e>. As suggested in chapter 1, JA comparatives seemed to exhibit attributes that are somewhere in the middle between English and Japanese. The paradigm discussed throughout this section illustrated that *illi* comparatives pattern with Japanese when it comes to NIEs. Moreover, originally, regarding subcomparatives, *illi* comparatives were illicit in both subcomparatives of degree and subcomparatives of number, thus patterning with neither English nor Japanese. However, we found that the data in Beck et al. (2004) did not present the full picture of Japanese comparatives. Specifically, we found that if we added the nominalizer *no* to the Japanese sentences, that the grammaticality judgments were exactly like those observed for JA *illi* comparatives.

So far we know only that *illi* comparatives involve individual comparison, but this fact alone does not complete the picture of *illi* comparatives. In particular, the examples in (129) only take into consideration those sentences which are frequently brought up in the literature on Japanese comparatives. In fact, we do find a contrast in grammaticality judgments between the use of the gradable predicate *aTwal* ‘taller’ and the gradable predicate *asraŸ* ‘faster’ in the following.³

- (130) a. Ali ishtara famsiyyeh **aTwal** min **illi** Sarah ishtara.t-ha
 Ali bought umbrella longer from that Sarah bought.FEM.it

³ The following Japanese sentences (from Personal Communication with Toshiko Oda) show similar behavior. Adding the Japanese nominalizer *no* results in a comparative with grammaticality judgments similar to those of *illi* comparatives.

- (i) a. Taro-wa [Hanako-ga katta yori(mo)] subayaku kasa-o kata
 Taro-TOP Hanko-GEN bought YORI fast umbrella-ACC bought
 ‘Taro bought an umbrella faster than Hanako did.’
 b. ?? Taro-wa [Hanako-ga katta no yori(mo)] subayaku kasa-o kata
 Taro-TOP Hanko-GEN bought NO YORI fast umbrella-ACC bought
 ‘Taro bought an umbrella faster than Hanako did.’

‘Ali bought a longer umbrella than Sarah did.’

- b. ?? Ali ishtara famsiyyeh **asra** min **illi** Sarah ishtara.t-ha
Ali bought umbrella faster from that Sarah bought.FEM.it
‘Ali bought an umbrella faster than Sarah did.’

The difference between (130a) and (130b) is that (130b) is an Adverbial comparative as indicated by the English translation, while the sentence in (130a) is an Adjectival comparative. What makes the *illi* comparative differ in grammaticality judgments based on whether it is used Adjectivally or Adverbially? One answer is what we have been claiming all along; that the SOC of *illi* comparatives is type <e>, which cannot denote eventuality. However, a clearer answer will have to come from the underlying syntax of the complement of *min* in *illi* comparatives. Therefore, the following section will attempt to uncover the syntax of the complement of *min* in *illi* comparatives as part of the *Path of Investigation* set out in Chapter 1.

3.2 The Syntax of the *illi*-Comparative Complement of *min*

In order to fully understand why a certain type of comparative exhibits the behavior that it does, we must make use of the path of investigation that we set forth in Chapter 1; namely, by asking what the underlying form of the complement of *min* is and whether the semantics of comparison involves degree abstraction. The basic tenants of the Direct Analysis was that an SOC should be type <e> if it is underlyingly phrasal, and an underlyingly clausal SOC cannot be type <e> (i.e. cannot denote an individual). The previous section shows that the SOC must be type <e>. Now we ask if the underlying syntax supports this claim. If the tenants of the Direct Analysis are on the right track, then we must find a phrasal underlying structure of the complement of *min* in *illi* comparatives. This is indeed what we find.

In particular, this section presents evidence in support of a relative clause-like structure in the complement of *min* with *illi* comparatives.⁴ This means that the complement

⁴ I stress here that it is ‘relative clause-LIKE’ because what concerns us in this research is not the specific type of relative clause that we are dealing with, but only what affects the semantics (i.e. whether the complement of *min* is a phrase or a clause, meaning whether it is to be of type <e> or type <d,t>). As it is not the focus of our study here, the reader is referred to works such as Shlonsky (2002, 2004) and Aoun et al. (2009) for more

of *min* in *illi* comparatives is syntactically phrasal, despite what may appear on the surface representation, thus providing further support that the SOC of *illi* comparatives is of the semantic type <e> only (as per the Direct Analysis (Heim, 1985, 2000)). Let us look at some evidence in favor of this suggestion.

We can begin with the fact that *illi* comparatives make use of a Resumptive Pronoun in the relativized position of the embedded clause.

- (131) Ali ishtara famsiyyeh aTwal min illi Sarah ishtara.t-**ha**
 Ali bought umbrella longer from that Sarah bought.FEM.it
 ‘Ali bought a longer umbrella than Sarah did.’

We notice here a parallelism with relative clauses in JA, where a resumptive pronoun appears in the relativized position, where we would expect a gap.

- (132) a. [_{DP} il-zalameh [_{CP} illi Ali jaaf-**oh**]] SaHb.i
 [_{DP} def.man [_{CP} that Ali saw-**him**]] friend.1SG
 ‘The man that Ali saw is my friend.’ JA
- b. [_{DP} al-rajul [_{CP} allapi ra?a-**ho** Ali]] SadeeQi
 [_{DP} def.man [_{CP} that saw.2SG-**him** Ali]] friend.1SG
 ‘The man that Ali saw is my friend.’ MSA

Understanding why JA relative clauses, make use of resumptive pronouns (in all but the subject position) may help us find out more about the underlying structure of *illi* comparatives. The reader is referred to works like Sells (1984), Shlonsky (2002) and McCloskey (2011) where it is argued that the use of a resumptive pronoun in Arabic is a ‘Last Resort’ mechanism (see Chomsky (1977, 1991)). This means that when movement (typically Operator movement to Spec of CP) violates a certain constraint on movement (in most of the cases here it is the Specified Subject Condition (Chomsky, 1973)), then the language does not commence with the movement operation, but instead inserts a resumptive pronoun in the relativized position and base generates an Operator in the Spec-CP position⁵. Resumptive

information on types of relative clauses in Arabic and the competing syntactic analyses thereof.

⁵ See McCloskey (2011); Shlonsky (2002) for arguments that the Spec-CP position is in fact an A-position not an \bar{A} -position on surface structure, but an \bar{A} -position at LF.

pronouns do not appear when movement does not violate any constraint on movement. Particularly, Operator movement from the subject position does not violate the Specified Subject Condition, and so, a resumptive pronoun does not appear.

- (133) Ali fakar il-zalameh [CP Op₁ illi [IP t₁ Darab il-saraag]]
 Ali thanked def.man [CP Op₁ that [IP t₁ hit def.theif
 ‘Ali thanked the man that hit the thief.’

What this means is that the resumptive pronoun in *illi* comparatives may be due to illicit Operator movement from a relativized position (either Direct Object or Indirect Object position), thus, suggesting a relative clause-like analysis of the complement of *min* in *illi* comparatives. Moreover, it is crucial to note that, as we mentioned before, *illi* is the JA counterpart to *allabi*, which can mean wither ‘that’ or any type of relative pronoun such as ‘who’. The following examples are taken from [Shlonsky \(2002\)](#) for Palestinian Arabic and adapted for JA. They illustrate that *illi* is used in relative clause constructions in JA, as can be seen by the English translations.

- (134) a. hay il-bint illi il-ʔsad akal-ha
 this def.girl *illi* def.lion ate-her
 ‘This is the girl that the lion ate.’
 b. il-jnuud Darabu illi Habasu-u
 def.soldiers hit *illi* arrested-him
 ‘The soldiers hit (the ones) that they arrested.’

One difference, though, between MSA *allaḏi* and JA *illi* is that while MSA *allaḏi* is inflected for gender and number agreement with the matrix NP it follows, JA *illi* does not vary in form at all, regardless of the gender or number of the NP it follows.

- (135) a. haḏi hiyya al-bint **allati** raʔaa-ha Ali
 this she def.girl.FEM.SG that.FEM.SG saw-her Ali
 ‘This is the girl whom Ali saw.’
 b. haḏa huwwa al-walad **allaḏi** raʔaa-hu Ali
 this he def.boy.MASC.SG that.MASC.SG saw-him Ali
 ‘This is the boy whom Ali saw.’

c. haḏaani hum al-ʔwlaad **allaḏaani** raʔaa-humaa Ali
 these them def.boys.MASC.PL that.MASC.PL saw-them Ali
 ‘These are the boys whom Ali saw.’

- (136) a. haay hiya al-bint **illi** Ali shaaf-ha
 this she def.girl *illi* Ali saw-her
 ‘This is the girl whom Ali saw.’
 b. haaḏ huwwa al-walad **illi** Ali shaaf-oh
 this he def.boy *illi* Ali saw-him
 ‘This is the boy whom Ali saw.’

The use of *illi* as the JA counterpart to MSA *allaḏi* suggests that *illi* is a complementizer. I will follow Shlonsky (2002) in claiming that *illi* is a C⁰ element (a complementizer), and thus, heads a CP. Evidence for this conclusion comes from the fact that *illi* is preceded by a *Wh*-element in interrogative uses.

- (137) a. **mīin** illi il-ʔsad akal-oh
 who *illi* def.lion ate-him
 ‘Who is it that the lion ate?’
 b. **mīin** illi gaal innu Ali gawi
 who *illi* said that Ali strong
 ‘Who is it that said that Ali is strong?’

Moreover, Rizzi (1990) suggests a binary feature system whereby a complementizer is categorized based on its *Wh* feature and its *Predicational* feature. The following comparison of two uses of the complementizer *that* in English will help shed light on this difference in the feature [Predicational].

- (138) a. I know **that** Mary said **that** John suggested **that** Bill is strong. [-Predicational]
 b. I know **the fact that** Mary is strong. [+Predicational]
 (139) a. John said **that** Mary is coming. [-Predicational]
 b. John heard **the news that** Mary brought. [+Predicational]

A similar classification is found in Shlonsky (2002) for Palestinian Arabic *illi*. The same idea can be applied to JA *illi*, where *illi* is analyzed as a Complementizer that is [+Predicational, -WH] (see Rizzi (1990); Shlonsky (2002)). If we assume that a CP headed by a

[+Predicational] C⁰ is itself [+Predicational], then it must be the case that the CP headed by *illi* must also be [+Predicational]. According to the original claims of Rizzi (1990), if a CP is Predicational, then in Rizzi's (1990) terms 'it must be predicated of a subject of predication', meaning that it must have a subject in which it modifies. However, it is rather best to describe this difference in other terms. Particularly, it may be wise to categorize the different kinds of complementizers based on what dominates the CP to which the complementizer is a head, instead of following a Shlonsky (2002) and Rizzi (1990) type terminology. This becomes clear when we compare *illi* with the complementizer *innu* in JA. Both *illi* and *innu* can be translated as 'that'. What we notice is that *illi* may only be used when its CP is dominated by a Nominal, whereas the complementizer *innu* may only head a CP that is dominated in the verbal domain.

- (140) a. Ali gaal **innu** Mary jaayeh
 Ali said that Mary coming
 'Ali said that Mary is coming.'
- b. * Ali gall **illi** Mary jaayeh
 Ali said *illi* Mary coming
 'Ali said that Mary is coming.'
- (141) a. * Ali simiŋ **il-Kabar innu** Mary jaabat-oh
 Ali heard def.news that Mary brought-it
 'Ali heard the news that Mary brought.'
- b. Ali simiŋ **il-Kabar illi** Mary jaabat-oh
 Ali heard the.news *illi* Mary brought-it
 'Ali heard the news that Mary brought.'

Thus, in our comparative uses of *illi*, the complement of *min* must be a DP, consisting of an NP that is modified by the CP headed by *illi*, as in the following illustration.

- (142) shamsiyti aTwal min [DP [NP e [CP [C *illi* [IP inta ishtareit-ha]]]]]
 my.umbrella taller from [DP [NP e [CP [C *illi* [IP you bought-it]]]]]
 'My umbrella is longer than (the one) that you bought.'

The claim that the CP headed by *illi* must be a complement of an NP (either an overt NP or an empty one) is a theory-dependent one. However, there is some empirical evidence

to its effect. All of the previously mentioned examples of *illi* comparatives indicate that *illi* is preceded by the preposition *min* directly. However, it is, in fact, optional to use an overt NP in place of the empty NP.

- (143) Ali akal baskut akthar min (il-baskut) illi Muna aklat-oh
 Ali ate biscuits more from (def.biscuits) *illi* Muna ate-it
 ‘Ali ate more biscuits than (the biscuits) that Muna ate.’

The fact that a DP may optionally appear in between *min* and *illi* provides further support that the complement of *min* in comparatives with *illi* could be a relative clause-like structure with an empty head NP (if the intervening DP is not pronounced). The compared DPs may be different. In the following example, the DP ‘peanuts’, for instance, must obligatorily be overt, since it may not be recovered.⁶

- (144) Ali akal **baskut** akthar min **il-fuzdog** illi Sarah aklat-oh
 Ali ate biscuits more from def.peanuts *illi* Sarah ate-them
 Lit: ‘Ali ate more biscuits than the peanuts that Sarah ate.’

⁶ There are indeed other cases where optional head nouns are present. The sentences below are illustrative to this end, with optional head nouns, except for (ii) which cannot be understood unless the head noun is present.

- (i) a. hay (il-bint) illi Ali ʕaf-ha
 this (def.girl) that Ali saw-her
 ‘This is the girl that Ali saw.’
 b. Ali simiʕ (il-xabar) illi Mary Hakat-oh
 Ali heard def.news that Mary said-it
 ‘Ali heard the news that Mary uttered.’

However, the following sentence is ungrammatical if the head noun is deleted.

- (ii) Ali simiʕ *(il-Kabar) illi Mary jaabat-oh
 Ali heard def.news that Mary brought-it
 ‘Ali heard the news that Mary brought.’

The exact licensing conditions for deleting the head noun are not clear to me at this point. The best bet would be pragmatic in nature. It must be understood from the context of the utterance, and if it cannot be, then the result would be ungrammatical, just as is the case with example (ii) above where Mary could have ‘brought’ a material object instead of a piece of news. You can also notice that deleting the head noun is permissible even in subject position, as in the following example.

- (iii) (il-bint) illi Rami jaaf-ha Hilwa
 (def.girl) that Rami saw-her beautiful
 ‘The girl that Rami saw is beautiful.’

Based on the syntactic evidence above, the complement of *min* with *illi* comparatives must be a DP containing a CP (i.e. a relative clause-like construction).⁷

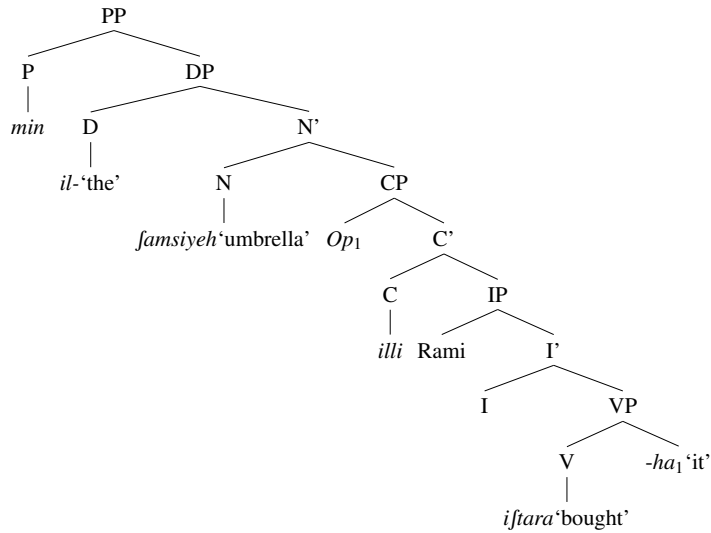
Moreover, one assumption we have maintained, so far, is consistent with our claims of the DP status of the complement of *min* in *illi* comparatives; namely, the selectional properties of the preposition *min*. Our working assumption was that the preposition *min* ‘from’ never selects for a CP.

- (145) a. Ali aja min [_{DP} hnaak]
 Ali came from there
 ‘Ali came from over there.’
- b. *Ali aja min [_{CP} Rami kan yaHtafil]
 Ali came from [_{CP} Rami was celebrating.MASC]
 ‘*Ali came from [_{CP} Rami was celebrating].’
- c. Ali aja min [_{DP} il-makan [_{CP} illi Rami kan yaHtafil fe-h]]
 Ali came from [_{DP} def.place [_{CP} that Rami was celebrating in-it]]
 ‘Ali came from [_{DP} the place [_{CP} that Rami was celebrating in]].’

Our discussion, so far, that the complement of *min* in *illi* comparatives is a DP (a relative clause-like construction) is, thus, in line with the basic assumption that we made about the selectional properties of the preposition *min*, which suggest that the preposition *min* selects for phrasal constituents (a DP). The syntax of the *min*-PP in *illi* comparatives is represented as a tree structure in (146b), for the *min*-PP in (146a).

- (146) a. famsiyti akbar min (ilfamsiyeh) illi Rami iftaraa-ha
 umbrella.my bigger from (def.umbrella) that you bought.it
 ‘My umbrella **is bigger** than the (umbrella) that Rami bought.’
- b.

⁷ Up until now, we have avoided providing a gloss for *illi*. This was done deliberately so as to remain as objective as possible to the underlying structure of *illi* comparatives. From now on, we can gloss *illi* as ‘that’. This is because we now know that a relative clause-like structure is involved and that *illi* is a complementizer corresponding to MSA *allaḍi* ‘that’.



As we have noticed from the examples of *illi* comparatives above, a resumptive pronoun appears in the relativized position instead of a gap and the operator is base-generated in Spec of CP. The SOC of *illi* comparatives is thus a DP, a phrase, and with that the *illi* comparative is a phrasal Comparative.

3.3 Further Notes

In example (124a), repeated below as (147), we concluded that *illi* comparatives do not allow for Subcomparatives of Number, based on the idea that Subcomparatives, in general, require degree abstraction in the SOC. Since the SOC of *illi* comparatives is type <e>, then degree abstraction is not possible.

- (147) * Ali akal baskut akthar min illi Muna aklat-oh muz
 Ali ate biscuits more from *illi* Muna ate-it bananas
 ‘Ali ate more biscuits than Muna ate bananas.’

However, the lack of degree abstraction is not the only problem. In fact, we find that there is a much more simpler syntactic answer; that *illi* comparatives make use of a resumptive pronoun in the relativized position of the embedded clause.

- (148) Ali akal baskut akthar min illi Sarah aklat-oh
 Ali ate biscuits more from that Sarah ate-**them**
 ‘Ali ate more biscuits than (the ones) that Sarah ate.’

The mere existence of the word *muz* ‘bananas’ in (147) is illicit because there is no slot for it to be in. The resumptive pronoun is in place of the Direct Object and so ‘bananas’ may not appear. This would explain why the data on *illi* subcomparatives seemed to deviate from what we would expect of a phrasal comparative with respect to Subcomparatives of Number, and show different grammaticality judgments to the Japanese Subcomparative of Number. Accordingly, the reason is a language-specific syntactic reason, not a semantic one. Therefore, a more appropriate literal translation of (147) is ‘*Ali ate more biscuits than the ones that Muna ate-them peanuts.’, and as we can see, this fails in English as well.

On a related note, what if JA and Japanese, in fact, utilized the same semantic strategy, but differ in something else? Besides, the variation in acceptability judgments of the Japanese data disappeared when we used the nominalizer *no*. They turned out to exhibit similar judgments to that of *illi* comparatives, which is expected if Japanese comparatives were also phrasal comparatives. It is important to note that Japanese comparatives are analyzed as Internally-Headed Relative Clauses (IHRC) (see Beck et al. (2004); Oda (2008); Beck et al. (2009)). Japanese allows for IHRCs but JA does not, as we have seen from the syntax of *illi* comparatives above. Perhaps this is the only major difference between the two languages, and not that they make use of two different semantic strategies. Accordingly, we could do away with the need for suggesting that Japanese and JA use two different semantic strategies (Contextual vs. Compositional, respectively), and instead suggest that they use the same semantic strategy (compositional), but differ in the syntax of relative clauses. However, I will leave this as a suggestion for future research as it is not in the scope of this research to pursue a more detailed analysis of Japanese IHRCs and their effect on the semantics of comparatives.

Moreover, I would like to add one more piece of data that may further support our claims about *illi* comparatives. The following is an example of an Adverbial clausal comparative in English.

(149) John bought the umbrella faster than Mary could blink.

Based on our conclusions about the DP phrasal status of the *illi* comparative SOC

and that it only denotes individuals, it is expected that Adverbial comparatives will be ungrammatical with *illi*. This is exactly what we find. There **is** a contrast in grammaticality judgments when we switch to Adverbial comparison.

- (150) Ali ishtara famsiyyeh **aTwal** min **illi** Sarah ishtara.t-ha
 Ali bought umbrella taller from that Sarah bought.FEM.it
 ‘Ali bought a longer umbrella than the one that Sarah bought.’
- (151) * Ali ishtara famsiyyeh **asraʕ** min **illi** Sarah ishtara.t-ha
 Ali bought umbrella faster from that Sarah bought.FEM.it
 Lit: ‘*Ali performed the action of buying an umbrella faster than the one that Sarah bought.’

This means that *illi* comparatives are only Adjectival comparatives, not Adverbial. This makes sense if they only compare objects, but it makes more sense if the complement of *min* was a DP (i.e. a relative clause construction). I take this and the facts mentioned above to show the following. First, the second DP (after *min* and preceding *illi*) can optionally be deleted if it is identical to the first Matrix Clause DP.

- (152) a. **famsiyti** akbar min (**ilfamsiyeh**) illi inta iʃtareit-ha
 umbrella.my bigger from (def.umbrella) that you bought.it
 ‘My **umbrella** is bigger than **the one** that you bought.’
- b. **famsiyti** akbar min *(**il-siyyarah**) illi inta iʃtareit-ha
 umbrella.my bigger from def.car that you bought.it
 ‘My **umbrella** is bigger than **the car** that you bought.’

Second, with respect to the syntax of the matrix clause with *illi* comparatives, it must be the case that the AP containing the comparative adjective and the DegP, modifies nominals (either by being a complement to an NP in attributive comparatives or complement of Infl in Predicative comparatives as in (153) and (154) below).

- (153) Suggested Matrix Clause Syntax for *illi*-type *Predicative* Comparison
- a. **famsiyti** akbar min (**ilfamsiyeh**) illi inta iʃtareit-ha
 umbrella.my bigger from (def.umbrella) that you bought.it
 ‘My umbrella **is bigger** than the (umbrella) that you bought.’

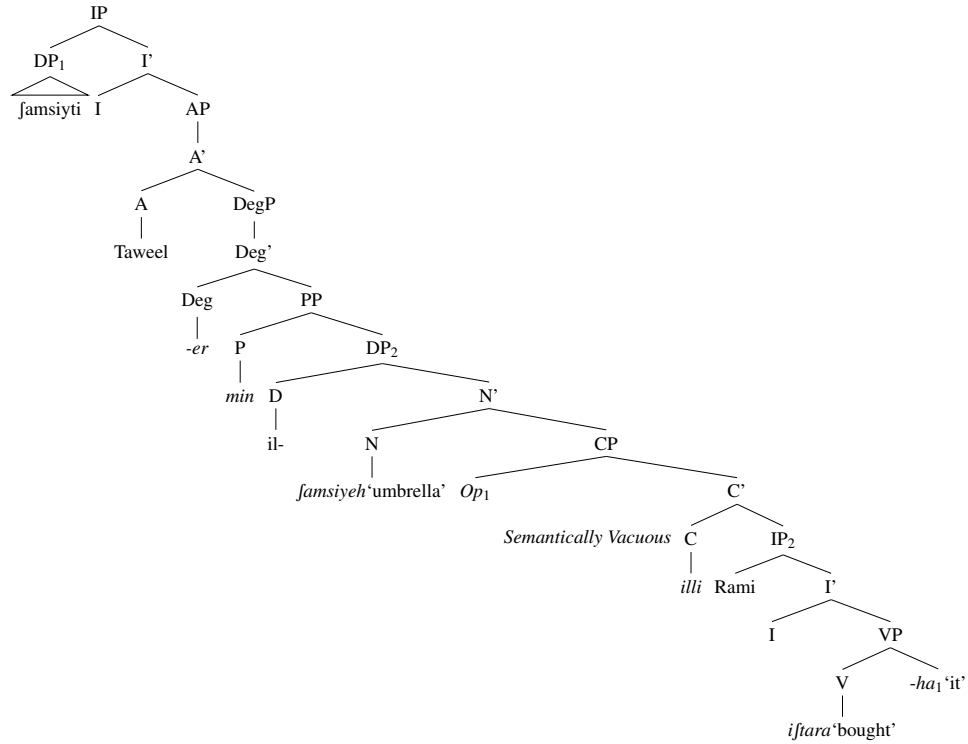
- b. [*IP* famsiyti [*I'* [*DegP* akbar min (~~il~~famsiyeh) illi inta iftareit-ha]]]
- (154) a. Ali akal baskut akthar min illi Muna aklat-oh
 Ali ate biscuits more from that Muna ate.them
 ‘Ali ate more biscuits than (the biscuits) that Muna ate.
- b. Ali akal [*DP* [*NP* baskut [*DegP* akthar min illi Muna aklat-oh]]]

3.4 The Semantic Composition of *illi*-type Comparatives

In this section I will demonstrate how a compositional semantics may be applied to the *illi* comparative. Let us take the sentence in (155a) for demonstration, with the structure represented in (155b).

- (155) a. famsiyti akbar min (~~il~~famsiyeh) illi Rami iftaraa-ha
 umbrella.my bigger from (def.umbrella) that you bought.it
 ‘My umbrella **is bigger** than the (umbrella) that Rami bought.’

b.



Before I demonstrate how a compositional semantics may apply, let me first clarify one crucial point. We have come to the conclusion in our discussions in the previous section that there is no degree operator movement within the embedded clause. We also have seen that *illi* structures employ a resumptive pronoun in the relativized position. The resumptive pronoun may be taken as a variable just like regular pronouns and needs no further stipulations. The Operator in this structure is taken to be base generated, and not moved from a relativized position. It serves to function as an index binder to the resumptive pronoun variable. Moreover, I include the second DP 'the umbrella' in the structure which can be seen as a deletion operation in cases where the second DP is not pronounced. These facts should become clear from the compositional semantics provided in (157) and (158), taking the definition of MAX as in (156b) and making use of the phrasal degree operator *-er_{HEIM}* as defined in (156a).

- (156) a. $\llbracket \text{-er}_{HEIM} \rrbracket_{\langle e, \langle d, \langle e, t \rangle \rangle \langle e, t \rangle} =$
 $\lambda x_{\langle e \rangle} . \lambda \text{Adj.}_{\langle d, \langle e, t \rangle \rangle} . \lambda y_{\langle e \rangle} \text{MAX}(\lambda d . \text{Adj.}(d)(y)) > \text{MAX}(\lambda d' . \text{Adj.}(d')(x))$
- b. $\text{MAX}(D) = \iota d: D(d) = 1 \ \& \ \forall d' [D(d') = 1 \rightarrow d' \leq d]$

- (157) Semantics of the *min*-XP

Let g be any variable assignment.

$\llbracket \text{Rami} \rrbracket = \text{Rami}$

$\llbracket \text{famsiyeh 'umbrella'} \rrbracket = \lambda x. x \text{ is an umbrella}$

$\llbracket \text{V} \rrbracket = \llbracket \text{iftara 'bought'} \rrbracket = \lambda z . \lambda y. y \text{ bought } z$

$\llbracket \text{it} \rrbracket^g = (g(1))$

- (158) $\llbracket \text{VP} \rrbracket^g = [\llbracket \text{V} \rrbracket^g](g(1))$
 $= [\lambda z . \lambda y. y \text{ bought } z](g(1)) = \lambda y. y \text{ bought } g(1)$
 $\llbracket \text{IP}_2 \rrbracket^g = [\llbracket \text{VP} \rrbracket^g](\text{Rami})$
 $= [\lambda y. y \text{ bought } g(1)](\text{Rami}) = \text{Rami bought } g(1)$

By semantically vacuous *illi*

$\llbracket \text{C}' \rrbracket^g = \text{Rami bought } g(1)$

$\llbracket \text{Op}_1 [\text{IP}] \rrbracket^{g(1 \rightarrow x)} = \llbracket \text{CP} \rrbracket^{g(1 \rightarrow x)} = \lambda x. \text{Rami bought } x$

$\llbracket \text{NP} \rrbracket^g = \lambda z. \llbracket \text{NP} \rrbracket^g(z) = 1 \text{ and } \llbracket \text{CP} \rrbracket^g = 1$

$= \lambda x. x \text{ is an umbrella and Rami bought } x$

$\llbracket \text{il-} \rrbracket = \llbracket \text{the} \rrbracket = \lambda f: f \in D_{\langle e, t \rangle} \ \& \ \exists ! x[f(x) = 1]. \iota y [f(y) = 1]$

$\llbracket \text{DP}_2 \rrbracket = [\llbracket \text{the} \rrbracket](\llbracket \text{NP} \rrbracket)$

$= \iota y [y \text{ is an umbrella and Rami bought } y]$

Take the preposition *min* as semantically vacuous

Now that the *min*-XP is of type $\langle e \rangle$, the composition of the matrix clause should proceed as in the phrasal *min* comparative in example (111) of chapter 2. Accordingly, we have demonstrated that the *illi* comparative is very similar to the Phrasal *min* comparative.

3.5 Summary

In this chapter we investigated the JA comparative with *illi* ‘that’. *illi* comparatives were shown to lack Negative Island Effects, and Subcomparatives (of both Number and Degree). In its lack of Negative Island Effects, the JA *illi* comparative resembles Japanese comparatives, but we initially observed that it differs from Japanese in the data on subcomparatives, where both Subcomparatives of Degree and of Number were illicit (Subcomparatives of Number are licit in Japanese). Thus, the *illi* comparative seemed to straddle between English and Japanese. However, we later found out that Japanese and JA are more similar than we originally thought. This is because the Japanese data provided in Beck et al. (2004) misses some cases where the Japanese nominalizer *no* is used. We found that when the Japanese nominalizer *no* is used, the result is identical to *illi* comparatives. The syntactic investigation of the underlying form of the complement of *min* in *illi* comparatives revealed that the complement of *min* in *illi* comparatives was underlyingly a relative clause-like construction. Being as such, the complement of *min* is technically a DP (i.e. it is phrasal). This conclusion only served to confirm our claims at the beginning of this chapter that the SOC of *illi* comparatives must denote individuals, not degrees.

The characteristic data on *illi* comparatives shows that this is indeed the case and any deviation from the expected behavior of a comparative with type a type <e> SOC was attributed to the JA language specific differences. All in all, the JA *illi* comparative is more in line with Japanese comparatives and with phrasal comparatives than it is with English comparatives. *illi* comparatives and phrasal *min* comparatives have been shown to be essentially similar in semantic terms and also in the fact that, syntactically, they both involve a complement of *min* that is phrasal. This may provide further support to the idea that most, if not all, of the traits that we observe for JA comparatives are, to some extent, conditioned by the morpho-syntactic selectional properties of the preposition *min*. In the remaining chapters we will see proof to this point and suggest that a Parameter of variation (like the Degree Abstraction Parameter (DAP) of Beck et al. (2009)) may not be the cause of a difference between English and JA comparatives. In fact, we have already suggested that JA and Japanese may have the same semantics of comparatives, but differ only in the syntax of relative clauses;

Japanese uses IHRCs, but JA does not.

Chapter 4

ma-TYPE COMPARATIVES

In this chapter, we extend our investigation to the JA comparative with *ma*. The first section (section 4.1) summarizes an analysis of *ma* comparatives found in McNabb and Kennedy (2009) and some puzzles that arise for our assumptions so far. Section 4.2 brings forth the possibility that, what we have been referring to as ‘*ma* comparatives’, may require two analyses for two different types of comparatives with *ma*; what we will refer to as ‘*Free Relative ma* comparatives’ and ‘*Degree ma* comparatives’. Section 4.3 investigates the defining characteristics of Free Relative *ma* comparatives and concludes that they are similar to *illi* comparatives in the semantic type of the SOC (in particular, see section 4.3.1). Section 4.4 attends to Degree *ma* comparatives. In particular, we clarify how it can be distinguished from Free Relative *ma*, and we will find that Degree *ma* comparatives cannot be used for individual comparison. Section 4.4.3 will apply our semantic tests to Degree *ma* comparatives, and we will find that there is no evidence for a type <d,t> SOC. Section 4.5 lays out an alternative analysis to McNabb and Kennedy (2009), based on the work of Sudo (2009) for Japanese comparatives. Accordingly, we will conclude that the SOC of Degree *ma* comparatives must be of type <d> and should be phrasal. Section 4.6 revisits data on Negative Island Effects and subcomparatives. We also conclude with some thoughts on the selectional properties of the preposition *min*.

4.1 Some Puzzles Concerning *ma* Comparatives

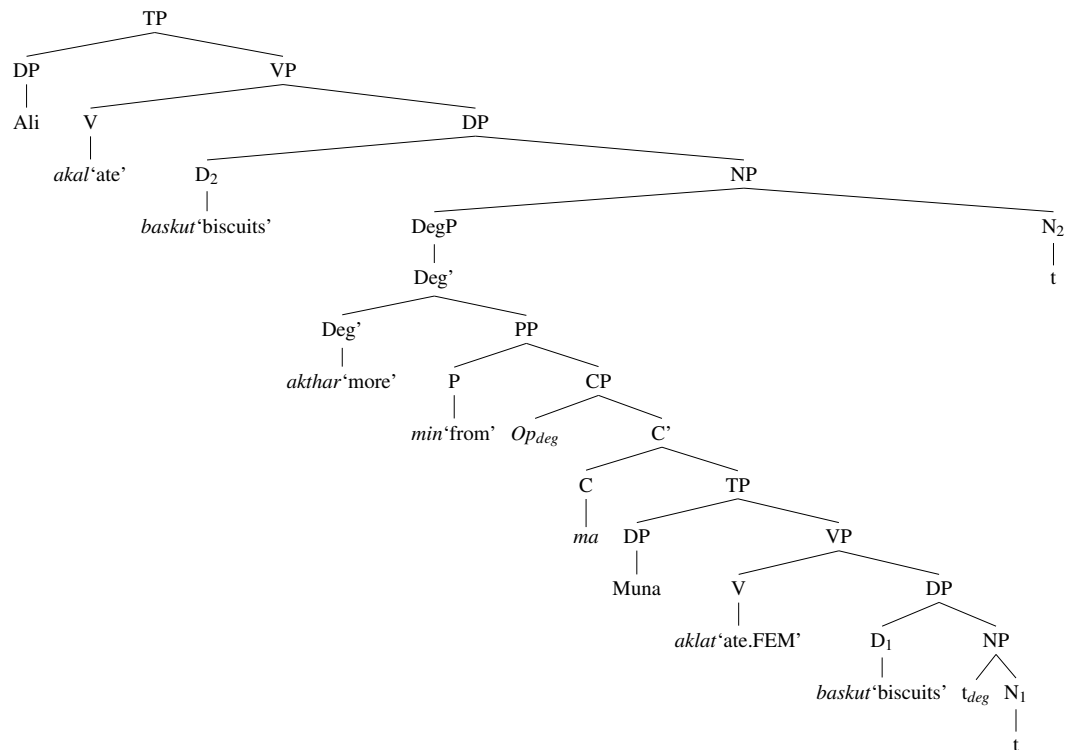
McNabb and Kennedy (2009) attempt a syntactic and semantic analysis of *ma* comparatives in Palestinian Arabic (PA). In this chapter, we will start by summarizing the analysis given to *ma* comparatives in McNabb and Kennedy (2009). PA and JA are, linguistically

speaking, nearly identical.¹ In particular, we will find two main issues that are different from a McNabb and Kennedy (2009) analysis. The issues may require further attention on our part, if we are to understand the JA comparatives in general, and the *ma* comparative construction, in particular.

The first issue concerns a hypothesis that we have maintained so far concerning the selectional properties of the preposition *min*. We have stated that the preposition *min* does not select for a CP. We have seen that this is true throughout our investigations of phrasal *min* comparatives and *illi* comparatives. However, McNabb and Kennedy (2009) argue that *ma* comparatives in Palestinian Arabic are clausal comparatives, and this challenges the assumption that we have maintained so far. As we can see from the PA *ma* comparative structure illustrated in (159) from McNabb and Kennedy (2009), the complement of *min* in PA *ma* comparatives is taken to be a CP.

¹ The main differences between the two are syntactically and semantically insignificant, but may be, to some extent, only *phonetically* different. For example, the word *galb* ‘heart’ in JA may be pronounced as either *galb*, *kalb*, or *?alb* in PA. Since our focus here is not on Phonetics nor Phonology, I will assume that PA and JA are semantically and syntactically indistinguishable.

(159) (McNabb and Kennedy, 2009)



Our first question is thus two-fold: a) Will we find evidence from JA *ma* comparatives that also indicate that they are underlyingly clausal, meaning that we will need to abandon our initial claims about the selectional properties of *min*? b) If not, then what possible reanalysis can we give to the PA *ma* comparative underlying structure given that the two dialects are too linguistically similar to logically differ in what the preposition *min* may select for?

The following examples cast doubt on the claim that genuine clausal comparatives exist in JA. In particular, they show that simple clausal comparatives with predicative adjectives are impossible in JA. The only solution is to use a nominal structure instead.²

² We will return to similar issues in section 5.2.2.

- (160) a. Ali aTwal min Mary
Ali taller from Mary
'Ali is taller than Mary.'
- b. * Ali aTwal min ma Mary (Taweeleh)
Ali taller from ma Mary (tall.FEM)
'Ali is taller than Mary is.'
- c. Tul Ali akthar min Tul Mary
Height Ali more from height Mary
'Ali's height exceeds Mary's height.'

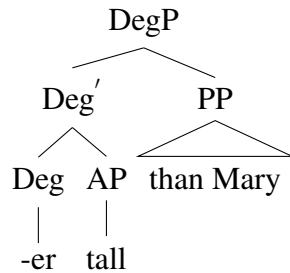
Moreover, on an interconnected and related note, the main focus of [McNabb and Kennedy \(2009\)](#) is to explain the difference in grammaticality judgments between what they refer to as *Quality* and *Quantity* gradable predicates. This constitutes our second issue. The word *akbar* 'bigger', for example, is a Quality predicate since it describes a certain quality or attribute of the object in comparison. The word *akthar* 'more' is a Quantity gradable predicate since it is used to compare the quantity of the two objects in comparison. In particular, [McNabb and Kennedy \(2009\)](#) notice that Quality and Quantity gradable predicates in PA *ma* comparatives differ in allowing for the Direct Object to appear in the SOC. The following are adaptations of the original sentences in [McNabb and Kennedy \(2009\)](#). The grammaticality judgments stand for both PA and JA (c.f. original sentences in [McNabb and Kennedy \(2009: 8\)\(26\)](#))

- (161) a. * samer iftara ktaab **akbar** min ma Nuha iftarat *santaat*
Samer bought book bigger from *ma* Nuha bought.F bags
'Samer bought **bigger** books than Nuha bought bags.'
- b. samer iftara kutub **akthar** min ma Nuha iftarat *santaat*
Samer bought books more from *ma* Nuha bought.F bags
'Samer bought **more** books than Nuha bought bags.'

Our collection of grammaticality judgments from Native Speakers of both JA and PA, show similar responses to the sentences (161). Nevertheless, our discussion throughout this chapter will show the possibility of a different analysis of why 'Quality' and 'Quantity' gradable predicates differ as they do in (161).

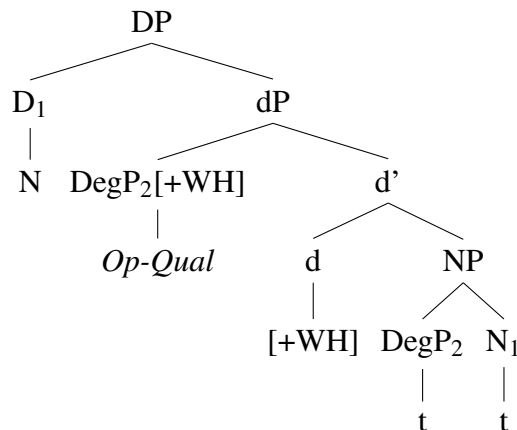
We must first note that [McNabb and Kennedy \(2009\)](#) make use of the Deg-Headed Structure of comparatives (see chapter 2, example (79), repeated here as (162)). This structure is headed by a degree morpheme (‘-er’ or *more* or *less*). The reader may recall that this structure assumes constituency between the gradable adjective and the degree head ‘-er’, to the exclusion of the SOC (syntactically, the PP).

(162)

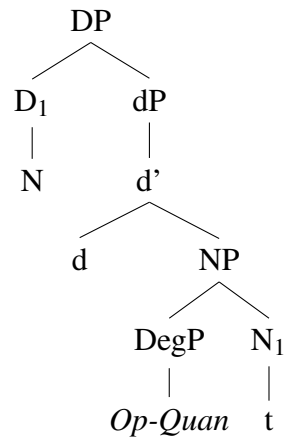


Under this approach, no movement of the Degree head *-er* is assumed. The degree morpheme *-er* is not quantificational and is thus, interpreted in situ. However, a degree variable can (and must) move, if Degree Abstraction is to take place within the embedded clause (see chapter 1), as [McNabb and Kennedy \(2009\)](#) suggest that PA *ma* comparatives involve degree abstraction in the SOC. This is, according to [McNabb and Kennedy \(2009\)](#), what constitutes the main difference between Quality and Quantity gradable predicates. In particular, it is suggested that a Quantity degree variable does not move to Spec-CP, while a Quality degree variable does.

(163) Internal structure of the DP in ‘Quality’ comparatives ([McNabb and Kennedy, 2009](#))



- (164) Internal structure of the DP in ‘Quantity’ comparatives (McNabb and Kennedy, 2009)



The problem for Quality gradable predicates arises when the quality degree variable moves to Spec of CP via the functional projections of DP, leaving behind an uninterpretable [+WH] feature in the embedded DP that has no phonetic realization in PA. Since there is no phonetic realization available for the uninterpretable feature left behind in the embedded DP, then the sentence incurs a PF-violation. This violation can be remedied by deleting the XP which contains the offending material (i.e. the entire DP), which is in this case the embedded DP. Hence, no material is allowed to be pronounced in the Direct Object position of *ma* comparatives when a Quality gradable adjective is used. Therefore, the ungrammatical sentence in (161a), repeated here as (165), becomes grammatical when we delete the Direct Object DP, that contains that is the cause of the PF-violation, as illustrated in (166)

- (165) * *samer iftara ktaab akbar min ma Nuha iftarat fanta*
 Samer bought book bigger from *ma* Nuha bought.F bag
 ‘Samer bought a **bigger** book than Nuha bought bag.’
- (166) *samer iftara ktaab akbar min ma Nuha iftarat*
 Samer bought book bigger from *ma* Nuha bought.F
 ‘Samer bought a bigger book than Nuha bought.’

What this analysis is missing, though, is that there are cases where ‘quality’ gradable predicates DO allow for material to be pronounced in Direct Object position. For example, the gradable predicate *asraʕ* ‘faster’ is surely not ‘quantity’. It can only be a ‘quality’

gradable predicate, in McNabb and Kennedy’s (2009) terminology. Changing the ‘quality’ gradable predicate *akbar* ‘bigger’ to another ‘quality’ gradable predicate *asraʕ* ‘faster’ renders the sentence in (161a) (repeated here as (167a) grammatical (c.f. (167b)), both in PA and in JA, without deleting the embedded Direct Object DP, as illustrated below.

- (167) a. * *samer iftara kutub akbar min ma Nuha iftarat fanta*
 Samer bought books bigger from *ma* Nuha bought.F bag
 ‘Samer bought **bigger** books than Nuha bought bag.’
- b. *samer iftara ktaab asraʕ min ma Nuha iftarat fanta*
 Samer bought book faster from *ma* Nuha bought.F bag
 ‘Samer bought a book **faster** than Nuha bought a bag.’

This, however, will not in any way require a reanalysis on the part of McNabb and Kennedy (2009), since the use of a gradable predicate like ‘faster’ will not involve a degree operator moving from within a DP. This is because adverbial gradable predicates, are as the name suggests, adverbial adjuncts. Accordingly, the idea here is not to refute a McNabb and Kennedy (2009) analysis, but to suggest a possibly more uniform and holistic picture of the data at hand. The crucial point here is that in example (161b), repeated below as (168), *akthar* ‘more’ can be either adjectival or adverbial, which leads to the potential ambiguity than can be translated in the English sentences in (169).

- (168) *samer iftara kutub akthar min ma Nuha iftarat fantaat*
 Samer bought books more from *ma* Nuha bought.F bags
 ‘Samer bought **more** books than Nuha bought bags.’

- (169) a. Samer bought books more than Nuha bought bags.
 b. Samer bought more books than Nuha bought bags.

What this means is that the difference in grammaticality may not be due to a difference between ‘quality’ and ‘quantity’ gradable predicates, but may be seen as a difference between Adjectival and Adverbial comparison. This will take into account all three scenarios that we illustrated; namely, with the ‘faster’, ‘bigger’, and ‘more’ as gradable predicates.

On a further note, McNabb and Kennedy (2009) note that in no other context is degree variable movement to Spec-CP allowed. To illustrate, notice how the following construction

(known as Degree Questions (Beck et al., 2009)) are not available in JA or PA, but are in a language that is known to allow for degree abstraction in the SOC; namely, English.

- (170) a. **How tall** is John?
 b. * **kam/gadiesh** **Taweel** John?
 How.many/how.much tall John
 ‘How **tall** is John’ (c.f. (170c))
 c. **kam/gadiesh** **Tuul** John?
 how.many/how/much **height** John
 ‘How much is the **height** of John?’

To sum up, we will need to investigate, like we have done with phrasal *min* comparatives and *illi* comparatives, the underlying structure of the complement of *min* in *ma* comparatives and apply our tests (Negative Island Effects, Subcomparatives (of Degree and of Number), to the JA *ma* comparative. This is ever more so needed at this stage because there does not exist one uniform analysis in the literature concerning the semantics or syntax of *ma* comparatives. We have mentioned McNabb and Kennedy’s (2009) analysis. However, as we will come to see in the next section, it is highly likely that there exists two different types of *ma* comparatives. But it is not clear which the McNabb and Kennedy (2009) analysis considers. Moreover, while McNabb and Kennedy (2009) consider the complement of *min* in *ma* comparatives as clausal, Shlonsky (2002) (though not discussing it under the topic of comparatives) claims that it is a Free Relative construction. We begin in the next section with an observation that may pave the way to an alternative analysis, and will eventually help shed light on whether the claim that all JA comparatives are phrasal (given our claims about the selectional properties of the preposition *min*) is accurate.

4.2 Two Types of *ma* Comparatives and Terminology

In the previous section, we observed that if we switch the ‘quality’ gradable predicate to one that is adverbial, like *asraʕ* ‘faster’, that the sentence allows for a Direct Object DP to be pronounced in the embedded clause. This constitutes a difference within the ‘quality’ type of gradable predicates. I would like to suggest that, perhaps we are dealing with two

different types of *ma* comparatives, that may require two separate analyses. The sentence in (171) is a typical example of what we have been referring to as *ma* comparatives, using the Quantity gradable predicate ‘more’. In particular, the *ma* comparative below has two different readings (cf. (171a) and (171b) below).

- (171) Ali akal baskut akthar min **ma** Rami akal
 Ali ate biscuits more from *ma* Rami ate
 ‘Ali ate more biscuits than Rami did.’
- a. ‘Ali ate more biscuits than what(ever) Rami ate.’ (i.e. an **amount of biscuits** that exceeds **the amount of whatever** Rami ate)
- b. ‘Ali performed the **act of eating** biscuits **more** than Rami did.’

I wish to argue that there are two readings for (171), precisely because (i) the comparative predicate *akthar* ‘more’ is ambiguous between being adjectival and adverbial, as I briefly mentioned above, and (ii) this difference leads to two different structures of *ma* comparatives. Does this mean there are two types of *ma* and does this mean that two different analyses will be required? Traditionally, in Modern Standard Arabic grammars, there are several uses of *ma*, including interrogative *ma*, negation *ma*, etc. (see Wright and Caspari (2011); Badawi et al. (2013), for example). We are concerned here with those types of *ma* that are considered to be *complementizers in comparative constructions* (see Shlonsky (2002) for evidence that *ma* is a complementizer). The literature discusses one such type (out of the context of comparatives); namely the *Free Relative ma* as defined in Shlonsky (2002). The term ‘Free Relative *ma*’ comparatives will be used to identify the *ma* comparative that gives rise to the reading in (171a). I will, henceforth, refer to the *ma* comparative that gives rise to the reading in (171b) as ‘*Degree ma*’ comparatives. Our example sentence in (171) does not help in distinguishing the two types, but for now, we can observe that Free Relative *ma* results in an Adjectival Comparative Reading (i.e. it modifies Nominals (in this case *baskut* ‘biscuits’)), while Degree *ma* results in a reading involving *eventuality* (i.e. it describes events/actions/degrees).

Accordingly, the following sections seek to identify how Free Relative *ma* and Degree *ma* comparatives, the latter of which are not previously discussed in the literature, can

be distinguished. In particular, we would like to know if the existence of two types of *ma* comparatives requires two separate analyses or if one analysis can explain both types. There are two sides to this question. This first is the distinction between the reading in (171a) and (171b). Since (171) has a reading similar to a Free Relative reading, whereby what is compared is the biscuits that Ali ate to ‘whatever it is that Rami ate’, then the most plausible suggestion is that individual comparison is at work, as opposed to *degree* comparison. However, in the second reading (c.f. (171b)), what is compared, based on the reading, is the *frequency* of the action being performed (i.e. frequency of performing the act of eating). It is impossible for frequency to yield an ‘individual’ denotation. The only possibility is degree. Our first question, therefore, will ask if the two readings may be unified under one analysis, or if they might require two separate analyses.

Second, within the first reading itself (c.f. reading (171b)), we find two sub-readings: a) **What** Ali ate is compared to **what** Rami ate, and b) the **amount** of what Ali ate is compared to the **amount** of what Rami ate. Will the existence of an *amount* reading within the Free Relative type force a degree comparative analysis for Free Relative *ma*, or will it be the case that, just like *illi* comparatives (which we now know involve individual comparison), Free Relative *ma* comparison is also comparison of individuals, and may be truth conditionally identical to *illi* comparatives. To find out, we will need to check for the underlying structure of the complement of *min* in each type of *ma* comparative. We also need to apply our tests of Negative Island Effects, Subcomparatives, and Variation in Acceptability to each. If we find that the two types differ in syntactic structure or in test data judgments, then we may need two separate analyses for each. Accordingly, section 4.3 is devoted to the Adjectival reading that we get from Free Relative *ma* comparatives. Section 4.4 is devoted to the second reading (the Adverbial reading) that we get from the Degree *ma* comparative type.

4.3 The Adjectival Reading

4.3.1 The Syntax of Free Relative *ma* Comparatives

In this section, the reader is advised to keep in mind the claim that we have been maintaining since the beginning of this research; namely, that all JA comparatives are phrasal

comparatives, syntactically, since the preposition *min* never selects for CPs. The Free Relative *ma* comparative confirms our claims about the selectional properties of *min*. Particularly, we find that it is very similar to *illi* comparatives in a number of ways. First, they are similar in that they compare objects/individuals. In fact, Free Relative *ma* is referred to, in the Arabic Grammars, as the ‘*ma* meaning *allaḏi*’, which means the ‘*ma* meaning *that*’. As we observed in chapter 3, *allaḏi* is the MSA word for JA *illi*, which can be translated as ‘that’. Moreover, Free Relative *ma* can function as (say) the subject or the object of the sentence, can be translated as ‘what’, and is more common in MSA than it is in JA.

- (172) a. **ma** akala-(ho) Ali.un Tayeb.an
 What ate(-it) Ali.NOM delicious.ACC
 ‘What Ali ate was delicious.’ MSA
- b. samiʔt.u ma Qaala-ho Ali.un
 heard.1SG what said.it Ali.NOM
 ‘I heard what Ali said.’ MSA

Like *illi* comparatives, a resumptive pronoun is used with Free Relative *ma* in MSA, as in (172b), above.³

So far we have been using the term ‘Free Relative’ *ma* to identify the type of *ma* comparative with a reading that describes an object (see (171a) above). What other solid evidence do we have that Free Relative *ma* comparatives are in fact Free Relatives? What evidence do we have to support the idea that they are phrasal comparatives, not clausal (i.e. the complement of *min* is a phrasal)? Besides, we have so far, maintained the hypothesis that since the preposition *min* never selects for a CP, then there is no independent reason to suspect that it could select for a CP in comparatives. Perhaps the strongest piece of evidence for this claim and the idea that Free Relative *ma* comparatives are phrasal comparatives

³ Native speakers of JA suggest that a resumptive pronoun is obligatory in Free Relative *ma* comparatives in MSA, but cannot be used in Free Relative *ma* comparatives of JA. The reader is reminded that there are no native speakers of MSA. Therefore, it is important to remember, that this type of *ma* comparative is more frequent in MSA than in JA. For this reason, we will mostly use MSA sentences as examples. When a JA sentence is used, the only distinguishing factor between Free Relative *ma* and degree *ma* will be the type of nominal that may precede *ma*, as we will see shortly. For Degree *ma* comparatives, on the other hand, it is important to keep in mind (as we will see shortly) that a resumptive pronoun is *never* used either in MSA or JA Degree *ma* comparatives, and this fact receives a uniform judgment from all native speakers.

comes from the fact that Free Relative *ma* can be preceded by a quantifier, like *kul* ‘all/every’, both in JA and in MSA, as illustrated in the following examples.

- (173) a. ktaabi ayla min **kul** ma Rami ftara
 my.book more.expensive from all what Rami bought
 ‘My book is more expensive than all of what Rami bought.’ JA
- b. kitaabi ayla min **kul.a** ma ftara-hu Rami
 my.book more.expensive from all.ACC what bought-them Rami
 ‘My book is more expensive than all of what Rami bought.’ MSA

Quantifiers like *kul* ‘all/every’ never modify CPs in JA nor in MSA, but usually modify nominals. The following examples are from JA.

- (174) a. Ali akal kul [_{NP} il-baskut illi Rami jaab-oh]
 Ali ate all [def.biscuits that Rami brought-it]
 ‘Ali ate all of the biscuits that Rami brought.’
- b. * Ali akal kul [_{CP} Rami jaab il-baskut]
 Ali ate all [Rami brought def.biscuits]
 ‘*Ali ate all Rami brought cookies.’

Moreover, Free Relative *ma* can be used in a comparative (cf. (175a) below), and it can be replaced with *illi* to achieve a similar meaning (cf. (175c)).

- (175) a. ma akala-(ho) Ali aTyab min **ma** akala-(ho) Rami
 what ate-(it) Ali more.delicious from what ate-(it) Rami
 ‘What Ali ate was more delicious than what Rami ate.’ MSA
- b. illi akal-oh Ali aTyab min **ma** Rami akal
 illi ate-(it) Ali tastier from what Rami ate
 ‘What Ali ate was more delicious than what Rami ate.’ JA
- c. illi akala-(ho) Ali aTyab min **illi** akala-(ho) Rami
 illi ate-(it) Ali more.delicious from illi ate-(it) Rami
 ‘That which Ali ate was more delicious than that which Rami ate.’ JA

Shlonsky (2002) suggests that *ma*-Free Relatives (in Palestinian Arabic) are, as the name suggests, Free Relatives, and analyzes them as having the following syntactic structure.⁴ We will adopt this structure, as well, for JA Free Relative *ma* comparatives.

- (176) Ali akal baskut aTyab min [DP kul [NP pro [CP Op₁ [C' **ma** [IP akalt-u t₁]]]]
 Ali ate biscuits tastier from [DP all [NP pro [CP Op₁ [C' *what* [IP ate.PL t₁]]]]
 ‘Ali ate more delicious biscuits that all of what you have eaten.’

The reader may notice that one difference between this structure and that proposed for *illi* comparatives is that the Operator moves from the relativized position to the Spec of CP of the *ma*-clause; the reason being that there is no resumptive pronoun use in the relativized position in Palestinian or JA Free Relative *ma* constructions. MSA Free Relative *ma* comparatives, on the other hand, would require a base-generated Operator in the Spec of CP, since a resumptive pronoun does appear, as follows.

- (177) akal.a Ali.un baskut.an aTyab.a min [DP kul.i [NP pro [CP Op [C' ate.ACC Ali.NOM biscuits.ACC tastier.ACC from [DP all.GEN [NP pro [CP Op [C' **ma** [IP akalt-umu-**hu**]]]]
what [IP ate.PL.-**it**]]]]
 ‘Ali ate more delicious biscuits that all of what you have eaten.’

To summarize our main points so far, Free Relative *ma* comparatives are phrasal comparatives, in the sense that what is the complement of *min* is a DP Free Relative construction with *pro* as the head NP. Free Relative *ma* comparatives may be distinguished in MSA rather easily since there would be a resumptive pronoun present in the relativized position in the embedded *ma*-clause, a Quantifier like *kul* ‘all/every’ may appear preceding *ma*, and the reading resulting from the Free Relative *ma* comparative is Nominal in nature in that it describes an object/individual as opposed to an event/action. In short, then, Free Relative *ma* comparatives are Adjectival phrasal Comparatives.

⁴ For Shlonsky’s (2002) Palestinian Free Relative *ma* construction, there is a gap instead of a resumptive pronoun in the relativized position. For this reason, the syntactic structure proposed by Shlonsky (2002) involves Operator movement from the relativized position (the gap) to Spec of CP in the embedded *ma*-clause. MSA, on the other hand would require a base generated Operator in Spec of CP as MSA makes use of a resumptive pronoun in the relativized position of Free Relative *ma* constructions.

4.3.2 Data and Analysis of Free Relative *ma* Comparatives

Given our conclusions about the underlying syntax of Free Relative *ma* comparatives complement of *min* (as a phrasal construction), we are led to the conclusion (based on the claims of the Direct Analysis (Heim, 1985; Bhatt and Takahashi, 2011)), that this type of *ma* usage should give rise to an SOC that is of type $\langle e \rangle$, an individual. Since *ma* Free Relative comparatives are very similar to *illi* comparatives in that they both involve a DP embedding a CP and have an SOC which denotes an object or an individual, then we can expect that Free Relative *ma* comparatives should exhibit similar behavior with respect to the three tests we applied to *illi* comparatives; namely, Negative Island Effects, Subcomparatives (of Degree and/or of Number), and Variation in Acceptability. Particularly, Free Relative *ma* comparatives should not show any sign of degree or degree abstraction in the SOC, just like *illi* comparatives, since it is a phrasal comparative.

This prediction is borne out. First, like *illi* comparatives, Free Relative *ma* comparatives lack Negative Island Effects. The example in (178b) from MSA is illustrative to this point.

(178) Lack of Negative Island Effects

- a. Ali iftara ktaab aʕla min **illi ma Hada** iftara-h
Ali bought book expensive.more from *that* no person bought-it
‘*Ali bought a more expensive book than no body did.’
- b. Ali iftara ktaab aʕla min **ma** lam yaftare-ho aHad
Ali bought book more.expensive from *what* not bought-it anyone
‘*Ali bought a more expensive book than what no one bought.’

As we discussed in the previous chapter, a lack of Negative Island Effects was taken to be an indication that the SOC involved in the comparative under question was of the semantic type $\langle e \rangle$, denoting an individual. As we can see in (178b), Free Relative *ma* comparatives do not exhibit Negative Island Effects. This is expected if the complement of *min* in Free Relative *ma* comparatives was indeed underlyingly phrasal. Therefore, the underlying syntax of Free Relative *ma* comparatives, the predictions of the selectional properties of the

preposition *min* and the semantic type predicted for the SOC of Free Relative *ma* comparatives, are all in line with what each would predict for the other in terms of semantic type of the SOC.

Second, Free Relative *ma* comparatives are predicted to behave similarly to *illi* comparatives with respect to Subcomparatives of Degree; Subcomparatives of Degree must similarly not be allowed. However, with respect to Subcomparatives of Degree, there are only two ways that we can know for certain that our example in (179b) actually makes use of the Free Relative *ma* as opposed to the Degree *ma* comparative. The first distinguishing factor is the existence of the pre-nominal modifier *kul* ‘all/every’. The second distinguishing factor is the reading we get from the sentence in (179b); it describes objects/individuals, not actions/events.⁵

(179) Lack of Subcomparatives of Degree

- a. *il-sikeeneh aTwal min illi il-durj yameeg
 def.knife taller from *that* def.cupboard deep
 ‘The knife is longer than the cupboard is deep.’
- b. *il-sikeeneh aTwal min (kul) ma il-durj yameeg
 def.knife taller from (all) what def.cupboard deep
 ‘*The knife is longer than what the cupboard is deep.’

Just like *illi* comparatives, the sentence in (179b) can become grammatical if the SOC is Nominalized, as in the following.

(180) il-sikeeneh aTwal min **yumug** il-durj
 def.knife taller from depth def.cupboard
 ‘The knife is longer than the depth of the cupboard.’

Fortunately, an example from Subcomparatives of *Number* for Free Relative *ma* comparatives is easier to construct (i.e. we can easily be certain that it is an instance of Free Relative *ma* as opposed to Degree *ma* due to the existence of a resumptive pronoun, indicating

⁵ There can not be a resumptive pronoun in (179b) (which will help us distinguish the two *ma* comparatives from one another more clearly) since it is the Adjectives that are compared.

that it is more like *illi* comparatives, denoting individuals). As we expect, Free Relative *ma* lacks Subcomparatives of Number, just as *illi* comparatives do.⁶

(181) Lack of Subcomparatives of Number

- a. * Ali akal baskut akthar min **illi** Muna aklat-oh **muz**
 Ali ate biscuits more from *that* Muna ate-it bananas
 ‘Ali ate more biscuits than Muna ate bananas.’
- b. * Ali akal baskut akthar min kul **ma** Muna aklat **muz**
 Ali ate biscuits more from all what Muna ate bananas
 ‘Ali ate more biscuits than Muna ate bananas.’ JA
- c. * Ali akal baskut akthar min **ma** aklat-oh Muna **muz**
 Ali ate biscuits more from all what Muna ate-it bananas
 ‘Ali ate more biscuits than Muna ate bananas.’ MSA

As the reader may recall from our discussion in the previous chapter, a lack of Subcomparatives indicates a lack of degree abstraction in the SOC. This is exactly what we would expect if the SOC of Free Relative *ma* comparatives (like that of *illi* comparatives) is of the semantic type <e>, denoting an individual.

To summarize where we stand regarding Free Relative *ma* comparatives, we can safely say that Free Relative *ma* comparatives are phrasal comparatives, have an SOC that denotes an individual, and lack degree abstraction in the embedded clause. In short, they are similar to *illi* comparatives. We also noted that Free Relative *ma*, as the name implies, are used for Adjectival comparison (as opposed to Adverbial comparison like ‘John ran **faster** than Mary.’). This means that Free Relative *ma* comparatives must show a variation in grammaticality between Adverbial and Adjectival Comparison. This prediction is borne out in the following.

⁶ The reader may notice that the quantifier *kul* ‘all/every’ appears in between *min* and *ma* in example (181b). this is a necessary step to distinguish it from Degree *ma* since in JA, as mentioned earlier, Free Relative *ma* does not make use of a resumptive pronoun, which may help to distinguish Free Relative *ma* from Degree *ma*. The MSA example in (181c) does make use of a Resumptive Pronoun, and thus, we can be sure that it is an instance of Free Relative *ma*, not Degree *ma*, and so the quantifier *kul* is not inserted.

- (182) a. Ali ishtara famsiyyeh **ayla** min (kul) **ma** Sarah
 Ali bought umbrella more.expensive from (all/every) what Sarah
 ishtara.t
 bought.FEM
 ‘Ali bought an umbrella more expensive than (all of) what Sarah bought.’
- b. * Ali ishtara famsiyyeh **asraf** min (kul) **ma** Sarah ishtara.t
 Ali bought umbrella faster from (all/every) what Sarah bought.FEM
 ‘*Ali bought an umbrella faster than (all of) what Sarah bought.’

The fact that changing only the gradable predicate (‘longer’ vs. ‘faster’) in the previous examples results in variation in acceptability indicates that Free Relative *ma* comparatives behave differently between Adjectival and Adverbial gradable predicates. The variation in grammaticality in the previous example provides further support for the idea we mentioned above, that Free Relative *ma* SOCs are syntactically phrasal, and they produce Adjectival Comparatives. The reader is reminded that *illi* comparatives also exhibited the same Variation in Acceptability between Adverbial and Adjectival gradable predicates.

- (183) a. Ali ishtara famsiyyeh **ayla** min **illi** Sarah ishtara.t-ha
 Ali bought umbrella more.expensive from that Sarah bought.FEM-it
 ‘Ali bought a more expensive umbrella than (the one) that Sarah bought.’
- b. * Ali ishtara famsiyyeh **asraf** min **illi** Sarah ishtara.t-ha
 Ali bought umbrella faster from that Sarah bought.FEM-it
 Lit: Ali performed the act of buying an umbrella faster than the umbrella that Sarah bought.
 = *Ali bought an umbrella faster than (the one) that Sarah bought.’

As a final piece of supporting evidence to the end that Free Relative *ma* comparatives are similar to *illi* comparatives, we notice that, in the following examples, Free Relative *ma* comparatives are all grammatical, similar to *illi* comparatives, in the types of sentences that are typically used (see Beck et al. (2004); Oda (2008); Beck et al. (2009)) to test for the possibility of a Contextual Analysis.

- (184) a. Ali ishtara famsiyyeh **ayla** min (kul) **ma** Sarah ishtara.t
 Ali bought umbrella more.expensive from (all/every) *what* Sarah bought
 ‘Ali bought a more expensive umbrella than (all of) what Sarah bought.’
- b. Ali ishtara famsiyyeh **aTwal** min (kul) **ma** Sarah ishtara.t
 Ali bought umbrella longer from (all/every) *what* Sarah bought.FEM.it
 ‘Ali bought a longer umbrella than (all of) what Sarah bought.’
- c. Ali ishtara famsiyyaat **akthar** min kul **ma** Sarah ishtara.t
 Ali bought umbrellas more from all/every *what* Sarah bought.FEM.them
 ‘Ali bought more umbrellas than all of what Sarah bought.’

The fact that there is no variation in acceptability between the use of gradable adjectives indicating *price*, *length*, or *quantity* of (an) umbrella(s) *bought*, was taken in the previous chapter to indicate that *illi* comparatives were not to be analyzed as Contextual Comparatives. The relevant examples are repeated below.

- (185) a. Ali ishtara famsiyyeh **ayla** min **illi** Sarah ishtara.t-ha
 Ali bought umbrella more.expensive from *illi* Sarah bought.FEM.it
 ‘Ali bought a more expensive umbrella than Sarah did.’
- b. Ali ishtara famsiyyeh **aTwal** min **illi** Sarah ishtara.t-ha
 Ali bought umbrella longer from *illi* Sarah bought.FEM.it
 ‘Ali bought a longer umbrella than Sarah did.’
- c. Ali ishtara famsiyyaat **akthar** min **illi** Sarah ishtara.t-hin
 Ali bought umbrellas more from *illi* Sarah bought.FEM.them
 ‘Ali bought more umbrellas than Sarah did.’

The same can be said here for Free Relative *ma* comparatives. Since there is no variation in acceptability with regards to pragmatically affected gradable predicates, then Free Relative *ma* comparatives, provide further support for the fact that JA comparatives are Compositional in their semantics (see chapter (2), as well as Beck et al. (2004, 2009) for further discussions on Contextual Comparison).

4.3.3 The Semantics of Free Relative *ma* Comparatives

Regarding the semantics of Free Relatives in English, Jacobson (1988, 1995) makes use of a Definite Description semantics. Jacobson regards Free Relatives as *predicative*

expressions that achieve an NP meaning via type-shifting. However, [Rullmann \(1995\)](#) argues that type-shifting is not necessary as the maximality operator can be directly attributed to the semantics via the *Wh*-word itself. Accordingly, an English Free Relative like that in (186a) translates as (186b), which can be expressed in an iota expression in (186c).

- (186) a. what John ate
 b. $\text{MAX}(\lambda x. \text{John ordered } x)$
 c. $\iota x[\text{John ordered } x \wedge \forall x'. [\text{John ordered } x' \rightarrow x' \leq x]]$
 d. = the sum of all the things that John ate

As [Tredinnick \(2005\)](#) stresses that the iota operator is traditionally used for singular expressions. The Free Relative ‘What John ate’, however, may include plural expressions as well, (for example, if John ate several different items). [Tredinnick \(2005\)](#) follows [Sharvy \(1980\)](#) in allowing for plurals in the expression of iota to achieve a presupposition like that illustrated in (187).

- (187) $\exists x[P(x) \wedge \forall y (P(y) \rightarrow y \leq x) \wedge Q(x)]$

According to [Tredinnick \(2005\)](#), redefining the iota operator as a maximality operator allows for the achievement of *exhaustivity* in the case of plurals and *uniqueness* in the case of singulars.

The same operation is at work in Free Relative *ma* constructions. The justification is that both the English Free Relatives, on the one hand, and the JA and MSA Free Relative *ma* constructions, on the other hand, produce the same *presuppositions* and *denotations*, as illustrated below.

- (188) a. $\llbracket \text{what John ate} \rrbracket = \iota x. \text{John ate } x$
- i. *Presupposition*: $\exists x[\text{John ate } x \wedge \forall y[\text{John ate } y \rightarrow y \leq x]]$
 - ii. *Denotation*: the unique (sum) individual x such that $\forall y[\text{John ate } y \rightarrow y \leq x]$
- b. $\llbracket \text{ma Rami akal 'what Rami ate'} \rrbracket = \iota x. \text{Rami } \textit{akal}'\text{ate}' x$
- i. *Presupposition*: $\exists x[\text{Rami } \textit{akal}'\text{ate}' x \wedge \forall y[\text{Rami } \textit{akal}'\text{ate}' y \rightarrow y \leq x]]$
 - ii. *Denotation*: the unique (sum) individual x such that $\forall y[\text{Rami } \textit{akal}'\text{ate}' y \rightarrow y \leq x]$
- c. $\llbracket \text{ma akala-hu rami 'what Rami ate'} \rrbracket = \iota x. \text{Rami } \textit{akal}'\text{ate}' x$
- i. *Presupposition*: $\exists x[\text{Rami } \textit{akal}'\text{ate}' x \wedge \forall y[\text{Rami } \textit{akal}'\text{ate}' y \rightarrow y \leq x]]$
 - ii. *Denotation*: the unique (sum) individual x such that $\forall y[\text{Rami } \textit{akal}'\text{ate}' y \rightarrow y \leq x]$

The result is an SOC of Free Relative *ma* comparatives that is of type $\langle e \rangle$. Being very similar to *illi* comparatives, which also have an SOC of type $\langle e \rangle$, we will not go into further details about the detailed semantic composition. What we need to focus on is whether this analysis may fit for Degree *ma* comparatives. This will be the topic of the next section.

4.4 The Adverbial Reading

In this section, we examine the Degree *ma* comparative, which as we observed in section 4.2, gives rise to an Adverbial Comparative reading. In particular, we examine the distinguishing factors between Degree *ma* and FR *ma* comparatives in section 4.4.1. We will attempt to explain why the two types differ by making reference the Matrix clause syntax of Degree *ma* comparatives. In section 4.4.2, we will examine some data from Degree *ma* comparatives that show that there is a contrast in grammaticality within Degree *ma* comparatives based on the type of gradable predicate used. Along the way, it may be wise to keep the two hypotheses that we posited earlier in the forefront; namely, a) that all JA comparatives are expected to be phrasal comparatives since the selectional properties of the preposition *min* indicate that they only select for phrasal complements, and b) that we most likely will need two separate analyses (one for Free Relative *ma* (henceforth, *FR ma comparative*) and

one for Degree *ma* comparatives), given that Degree *ma* comparatives result in eventuality readings which can in no way be type <e>, like FR *ma* comparatives result in.

4.4.1 Distinguishing Degree *ma* from FR *ma* Comparatives

4.4.1.1 Adverbial vs Adjectival Gradable Predicates

Moving along, let us start by illustrating one key difference between the two *ma* comparatives, that will come in handy. Degree *ma* can only be used as an Adverbial comparative. This means that the use of Adjectival gradable predicates like ‘bigger’ or ‘taller’ automatically disqualifies Degree *ma*, since it only produces Adverbial readings. The vice versa is also true. Degree *ma* also never makes use of a resumptive pronoun. But even without this fact, the gradable predicate factor, alone, should be enough of a distinction, as the following example illustrates.

- (189) a. Ali rakaD **asraʕ** min ma Rami rakaD
 Ali ran faster from *ma* Rami ran
 ‘Ali ran faster than Rami ran.’ *Degree ma*
- b. Ali akal baskut **aTyab** min ma Rami akal
 Ali ate biscuits tastier from *ma* Rami ate
 ‘Ali ate tastier biscuits than what Rami ate.’ *FR ma*

The sentences in (189) are easily distinguishable. The Degree *ma* corresponds to the Adverbial reading, while the FR *ma* corresponds to the Free Relative Adjectival reading.

On a further note, Degree *ma* comparatives do not only refer to ‘frequency’ of an action. They may also refer to the ‘length of time’ of an action, or ‘distance’ of running, for example. Crucially, though, these terms are not mentioned, and so a degree reading is obtainable. Take for instance the three possible interpretations of the following Degree *ma* comparative.

(190) Ali rakaD akthar min ma Rami rakaD
 Ali ran more from *ma* Rami ran
 ‘Ali ran more than Rami did.’

- a. Ali ran for a **longer period of time** than Rami did.
- b. Ali ran **more frequently** than Rami did.
- c. Ali ran a **greater distance** than Rami did.

None of these readings can be obtained via a Free Relative *ma* comparative, which only refers to individuals, and in fact, the use of FR *ma* comparatives renders the sentence ungrammatical.

(191) * rakaD.a Ali.un akthar.a min ma rakaDa-hu Rami
 ran.ACC Ali.NOM more.ACC from *what* ran-it Rami
 ‘*Ali ran more than that which Rami ran.’

However, it is important to keep in mind that the reading in (190c), for instance, may also be obtained by making use of *illi* or FR *ma*. The only difference is that the phrase ‘great distance’ must be used in order to obtain an individual denotation. Take the following *illi* comparative as illustration to this point. The FR *ma* comparative example receives a slightly improved grammaticality judgment than the one in (191).

- (192) a. Ali rakaD **masaafeh** aTwal min **il-masaafeh** illi Rami rakaD-ha
 Ali ran distance longer from def.distance that Rami ran-it
 ‘Ali ran a greater distance than the distance that Rami ran.’
- b. ? rakaD.a Ali.un **masaafatan** akthar.a min ma rakaDa-ha Rami
 ran.ACC Ali.NOM distance more.ACC from *what* ran-it Rami
 ‘?Ali ran a greater distance than that which Rami ran.’

4.4.1.2 The Matrix Clause Syntax as Another Distinguishing Factor

The examples in the previous section were easily distinguished as either instances of FR *ma* comparatives or Degree *ma* comparatives, based on whether the gradable predicate used was adverbial or adjectival. But what about the following sentence? There are two possible readings as indicated in (193a) and (193b).

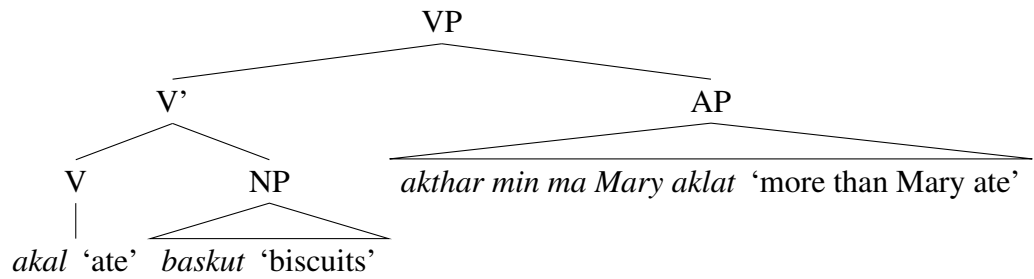
- (193) Ali iftara sayarh **asraʕ** min ma Rami iftara
 Ali bought car faster from *ma* Rami bought
 c.f English ‘Ali bought a faster car than Rami did’
- a. Ali performed the act of buying faster than Rami performed the act. (i.e. Degree *ma* Reading)
 - b. Ali bought a car that was faster than what(ever) Rami bought. (i.e. FR *ma* Reading)

A similar problem arises when the quantity gradable predicate *akthar* ‘more’ is used, as per our original example repeated here as (194), which results in two different readings shown in (194a) and (194b).

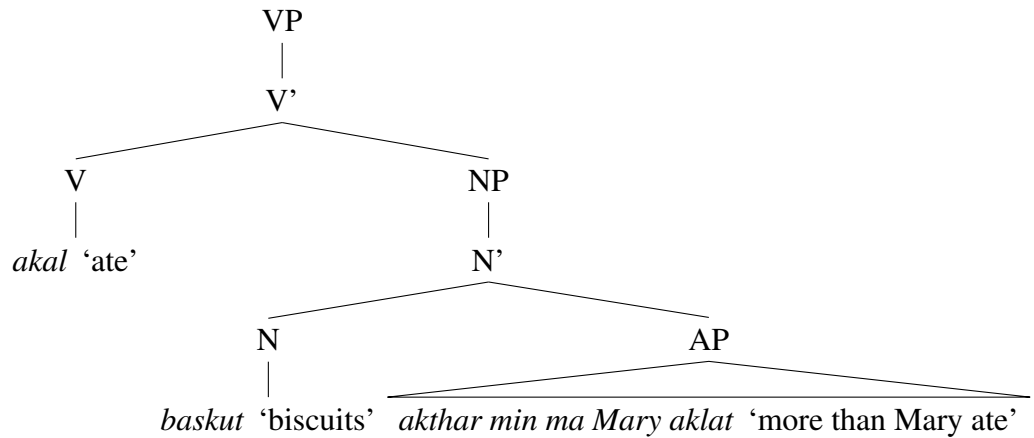
- (194) Ali akal baskut **akthar** min **ma** Rami akal
 Ali ate biscuits more from *ma* Rami ate
 ‘Ali ate more biscuits than Rami did.’
- a. ‘Ali ate more biscuits than what(ever) Rami ate.’ (i.e. an **amount of biscuits** that exceeds **the amount of whatever** Rami ate)
 - b. ‘Ali performed the **act of eating** biscuits **more frequently** than Rami did.’

As I have hinted at earlier in this chapter, there is an ambiguity regarding *akthar* ‘more’ between an adjective and an adverb and this ambiguity corresponds to two different comparative strategies: FR *ma* comparatives which describe individuals and Degree *ma* comparatives which involve eventuality. But how do these two different readings come about in the first place? We will see that the Matrix clause syntax of Degree *ma* comparatives may be the root cause of such contrasts in grammaticality. In particular, these contrasts arise from having the JA AP **follow** the constituent it modifies (see chapter 2). This is different from English where an AP modifier **precedes** what it modifies in Adjectival Comparative constructions, but follows in Adverbial Comparative constructions (c.f. (196)). In JA, Adjectival and Adverbial constructions have indistinguishable linear order from the Surface Representation (c.f. (195)), resulting in multiple possible readings.

(195) a. JA Adverbial Comparative

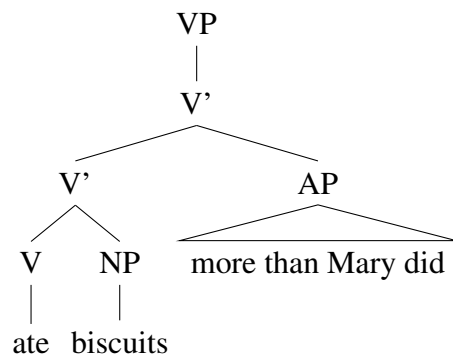


b. JA Adjectival Comparative

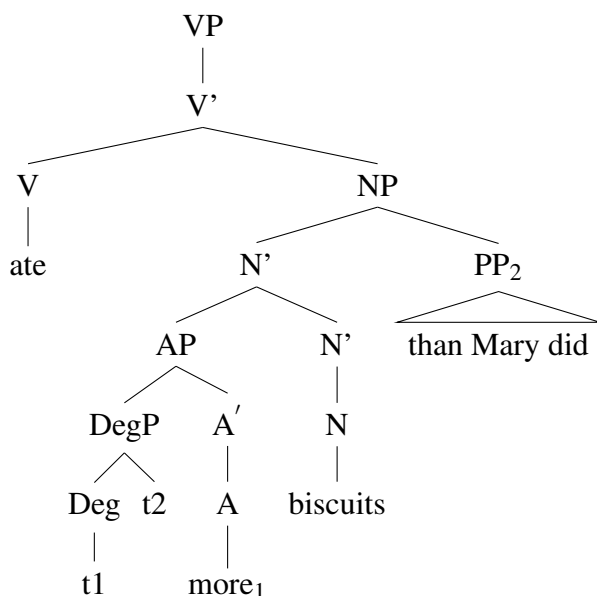


The English linear order, on the other hand, makes it clear from the Surface Representation, whether an Adverbial comparative reading, or an Adjectival Comparative reading should be derived.

(196) a. English Adverbial Comparative



b. English Adjectival Comparative



This means that the DegP ‘more’ in the English sentence below can only be describing the ‘biscuits’, while in the JA sentence, **multiple possibilities** are available; it could be describing the ‘biscuits’ (the NP) or the act of ‘eating biscuits’ (the VP containing the verb AND the NP).

(197) John ate more biscuits than Mary did.’

(198) Ali akal baskut akthar min ma Rami akal
 Ali ate biscuits more from *ma* Rami ate
 c.f ‘Ali ate more biscuits than Rami ate.’

a. Ali **ate more biscuits** than Rami ate

b. Ali **ate biscuits more** than Rami ate.’

Accordingly, we can conclude the following as an essential difference between *illi* comparatives and Free Relative *ma* comparatives, on the one hand, and Degree *ma* comparatives, on the other: the former are used when the structure of constituency is like that of (198a) above, where the DegP modifies the Noun, resulting in an Adjectival comparative and an Adjectival reading, while Degree *ma* comparatives are invoked when the structure is like that of (198b), where the DegP modifies the VP to achieve an Adverbial comparative,

and a corresponding Adverbial eventuality reading. These basic differences between the two types of *ma* comparatives will suffice for our purposes here. In the next section, we will come across more distinctions.

4.4.2 Puzzling Data of a Contrast in Grammaticality

The reader is reminded that Japanese comparatives without the nominalizer *no* exhibit a contrast in grammaticality between comparatives making use of Quantity or Quality predicates (c.f. (199b) and (199a)), and between predicates that are predicted by the discourse topic and those that are not, such as speaking of price or speaking of specifications of an object when the discourse speaks of ‘buying’ an object (c.f. 199c and 199b).

(199) Japanese

- a. Taroo-wa [Hanako-ga katta yori] **takusan(-no)** kasa-o
 Taroo-TOP [Hanako.NOM bought YORI] many(-GEN) umbrella.ACC
 katta
 bought
 ‘Taroo bought more umbrellas than Hanako did.’
- b. ?* Taroo-wa [Hanako-ga katta yori] **nagai** kasa-o katta.
 Taroo.TOP [Hanako.NOM bought YORI] long umbrella.ACC bought
 ‘Taroo bought a longer umbrella than Hanako did.’
- c. ? Taroo-wa [Hanako-ga katta yori (mo)] **takai** kasa-o
 Taroo-TOP [Hanako-NOM bought *yori* (mo)] expensive umbrella-ACC
 katta.
 bought
 ‘Taroo bought a more expensive umbrella than Hanako did.’

Similarly, Degree *ma* comparatives have a slightly different distribution to the data in (199). To make sure that we are illustrating Degree *ma* comparatives, the following examples will be taken from MSA. Since a resumptive pronoun is not used, the Degree *ma* comparative reading is induced.

- (200) a. iftara Ali.un shamsiyaat **akthar.a** min **ma** iftara Rami
 bought Ali.NOM umbrellas.ACC more from *ma* bought Rami
 ‘Ali bought umbrellas more than Rami bought.’

- b. *iftara Ali.un shamsiyeh **aγ la** min **ma** iftara Rami
 bought Ali.NOM umbrella more.expensive from *ma* bought Rami
 ‘*Ali bought an umbrella more expensive than Rami bought.’
- c. *iftara Ali.un shamsiyeh **aTwal.a** min **ma** iftara Rami
 bought Ali.NOM umbrella taller from *ma* Rami bought
 ‘*Ali bought an umbrella longer than Rami bought.’

In the above examples, only the comparative where the gradable predicate is ‘more’ (of Quantity) is grammatical with Degree *ma* comparatives. Since a Degree *ma* comparative is used, and since Degree *ma* comparatives are only used for eventuality, then a gradable predicate capable of modifying eventuality must be used. In this case, it is the gradable predicate *akthar* ‘more’, which can modify the verbal domain. For this reason, the sentence in (200a) is grammatical. On the other hand, as we discussed in the previous chapter, the difference in grammaticality between the use of a predicate like ‘expensive’ and ‘longer’ cannot be attributed to discourse related sources, since we have already made it clear that JA comparatives are not contextual, but compositional.⁷ Moreover, we do not find any difference in grammaticality judgment between (200b) and (200c) in the first place; they are both ungrammatical. What could be the source of this ungrammaticality?

The answer comes from what we have concluded about the use of Degree *ma*, in general. Degree *ma* comparatives are used to invoke an Adverbial reading. Since the gradable predicates *aTwal* ‘longer’ and *aγ la* ‘more expensive’ cannot modify the verbal domain, the sentences are ungrammatical. We now know that (200b), for instance, could become grammatical if we eliminate either one of the offending sources (either use a clear case of Free Relative *ma* or change the DegP to *akthar* ‘more’, which CAN modify events).

- (201) a. ishtara Ali.un **famsiyyeh aγ la** min **kul** ma ishtarat-**hu**
 bought Ali.NOM umbrella more.expensive from all/every what bought-it
 Sarah
 Sarah

⁷ In the work of McNabb and Kennedy (2009) on comparatives in Palestinian Arabic, a sentence like the one in ((200c) is predicted to be grammatical. We do not share the same grammaticality judgment with regards to Quality gradable predicates in Degree *ma* comparatives. Specifically, McNabb and Kennedy (2009) do not distinguish two types of *ma* comparatives. We return to this subject in the final section (section 4.6.2) of this chapter where we compare our analysis with that of McNabb and Kennedy (2009).

‘Ali bought an umbrella that is more expensive than all of what Sarah bought.’

MSA

- b. Ali ishtara **jamsiyyeh aḡ la** min **kul** ma Sarah ishtarat
Ali bought umbrella more.expensive from all/every what Sarah bought
‘Ali bought an umbrella that is more expensive than all of what Sarah bought.’

JA

- c. Ali ishtara **jamsiyyaat akthar** min **ma** Sarah ishtara.t
Ali bought umbrellas **more** from *ma* Sarah bought.FEM
‘Ali bought umbrellas more than Sarah bought.’ (i.e. Ali performed the act of
buying more that Sarah performed it.) JA

Accordingly, the issues of difference in grammaticality based on which gradable predicate is used has now been solved, only by referring to one difference between FR *ma* and Degree *ma*; that the latter exists only in Adverbial comparison.

4.4.3 Applying the Semantic Tests to Degree *ma*-Comparatives

In chapter 1, we mentioned some problems related to JA comparatives with *ma*. This section is devoted to detailing the full extent of these problems. Given that Degree *ma* comparatives involve eventuality in their interpretations, we concluded that in no way can the SOC of a Degree *ma* comparative denote an individual type $\langle e \rangle$, like the FR *ma* comparative SOC does. This fact, alone seems to challenge the claim we have maintained all along that all JA comparatives are phrasal comparatives (given that the Direct Analysis suggests that phrasal comparatives involve type $\langle e \rangle$ SOC). So what is the semantic type of the SOC in Degree *ma* comparatives? Let us take this issue one step at a time and try to limit the possible types of SOC that the Degree *ma* comparative may make use of. As we have discussed in chapter 1 and in chapter 2, only three possible types of SOC exist. Their logical distribution is summarized as follows.

(202) Possible Types of SOC

- a. A *Degree Description* Type <d,t>
With Clausal Comparatives that involve Degree Abstraction
'John ate more cookies than **Mary did bananas.**'
- b. A *Degree* Type <d>
With Phrasal Comparatives where the SOC directly names a Degree
'John is taller than **6 feet.**'
- c. An *individual* Type <e>
With underlyingly Phrasal Comparatives where the SOC does not directly name a Degree.
'John is taller than **the door.**'

There are, thus, only two possible options left for the semantic type of the SOC in *ma* comparatives; a Degree Description (type <d,t>) and a Degree (type <d>). How can we tell which one? One way is to test for degree abstraction, since degree abstraction is not required in a type <d> SOC, but is required in a clausal type <d,t> SOC. It makes sense, then, to apply our semantic tests to the *ma* comparative. Therefore, in this section, we will present the relevant data on Degree *ma* comparatives based on our semantic tests to Degree *ma* comparatives. Since it is impossible for the SOC of Degree *ma* comparatives to denote an individual, then the possibility of Degree *ma* comparatives being clausal comparatives becomes quite relevant. If [McNabb and Kennedy \(2009\)](#) were correct in suggesting a clausal comparative structure for 'ma comparatives', then, following the Direct analysis, we should see behavior that indicates degree abstraction and a type <d,t> SOC. But that is not the case entirely. Although we will find Negative Island Effects, we will not find any evidence suggesting degree abstraction in the SOC (i.e. no evidence for a type <d,t> SOC).

4.4.3.1 Existence of Negative Island Effects

As we observed earlier, *illi* comparatives and Free Relative *ma* comparatives do not exhibit any Negative Island effects (NIEs).

- (203) a. * John bought a more expensive book than no one did.

- b. Ali iftara ktaab aʕla min **illi ma Hada** iftara-h
 Ali bought book expensive.more from *that* no person bought-it
 ‘Ali bought a more expensive book than the one that no body bought.’
- c. Ali iftara ktaab aʕla min **ma** lam yaftare-ho aHad
 Ali bought book more.expensive from *what* not bought-it anyone
 ‘*Ali bought a more expensive book than what no one bought.’

We have attributed this to the fact that the SOC of *illi* and Free Relative *ma* comparatives was of the semantic type <e> and so, did not involve degrees in the semantics of the SOC. This means that the problem of an undefined maximal degree (the NIE) is not applicable in the first place. However, the JA comparative with Degree *ma* DOES exhibit NIEs, as illustrated in the JA example (204a), and the MSA example in (204b) below.⁸

- (204) a. * Ali rakaD asraʕ min ma **ma** Hada rakaD
 Ali ran faster from *ma* no person ran
 ‘Ali ran faster than no one did.’ JA
- b. * rakaDa Ali.un asraʕa min ma **lam** yarkoD.u aHad.un
 ran.ACC Ali.NOM faster from *ma* not run person.NOM
 ‘Ali ran faster than no one did.’ MSA

If we were to suggest a preliminary analysis based only on the grammaticality judgments of (204), then we are put on a path to suggest that the sentences in (204) are ungrammatical due to the NIE, and thus, it may be the case that MAX is undefined. For example, if no one other than Ali ran faster than 8 mph, then it is also true that no one ran 10 mph, or 15 mph. In this case, there is no maximal degree of SPEED that can be defined. Accordingly, there must be some basis for a degree variable in the SOC, as we mentioned in the beginning of this section (i.e. the SOC of *ma* comparatives may be of the semantic type <d> or <d,t>, but not <e>). So far, then, this fact alone does not provide evidence for one or the other, but does at least support the conclusion that a type <e> SOC is impossible.

⁸ We are using the Adverbial Comparative in the examples in (204), because, if we were to use an Adjectival Comparatives, there would be no way to distinguish it from Free Relative *ma* comparatives. The reader is reminded, also that one of the differences between Free Relative *ma* comparatives and Degree *ma* comparatives was in the reading we arrive at. Only Degree *ma* comparatives produce an eventuality reading.

4.4.3.2 Lack of Subcomparatives

Subcomparatives can be used as a useful tool to test for degree abstraction. If, as we saw in the previous section, there is, to some extent an SOC denoting degrees in Degree *ma* comparatives, then it wouldn't be too far fetched to suggest that Degree *ma* comparatives should allow Subcomparatives of Degree, given that McNabb and Kennedy (2009) suggest a CP syntax for the complement of *min* in *ma* comparatives that denote degrees. Recall that subcomparatives of degree require an SOC that denotes degrees (not individuals), and requires degree abstraction in the SOC.

We have already seen that *illi* comparatives and Free Relative *ma* comparatives do not allow Subcomparatives of Degree or of Number, which was attributed to the fact that the SOC of *illi* comparatives denoted individuals (and that the existence of a resumptive pronoun in the embedded clause of *illi* comparatives blocks the different Direct Object of the Subcomparative of Number). However, Degree *ma* comparatives indicate an existence of degree in the SOC, based on the NIE data, and also, it does not make use of a resumptive pronoun in the Direct Object position of the embedded clause, meaning that Degree Operator movement may be possible for purposes of degree abstraction.

- (205) Ali iftara ktaab asraʕ min ma Rami iftara
Ali bought book faster from *ma* Rami bought
'Ali bought a book faster than Rami did.'

If we were on the right track in suggesting in the previous chapter that it was the existence of a resumptive pronoun in *illi* comparatives that was one reason behind the ungrammaticality of Subcomparatives of Number in *illi* comparatives and Free Relative *ma* comparatives, then we predict that Degree *ma* comparatives should allow Subcomparatives of Number, given that the embedded clause of Degree *ma* comparatives does not make use of a resumptive pronoun, and is certainly not type <e>. McNabb and Kennedy (2009) suggest that Subcomparatives of Number do exist with, what they refer to as, '*ma* comparatives'. Notice the difference between the use of *illi* in (206a) and *ma* in (206b) with regards to Subcomparatives of Number.

- (206) a. * Ali iftara kutub **akthar** min **illi** Rami iftara-h **muz**
 Ali bought books more from that Rami bought-it bananas
 ‘*Ali bought more books than (the books) that Rami bought bananas.’
 c.f. ‘Ali bought more books than Rami bought bananas.’
- b. Ali iftara kutub **akthar** min **ma** Rami iftara **muz**
 Ali bought books more from *ma* Rami bought bananas
 Lit: Ali bought books more than Rami bought bananas
 c.f. ‘Ali bought more books than Rami bought bananas.’

The sentence in (206b) provides further support for the distinction we made earlier between two types of *ma* comparatives. Since we are using in (206b) a gradable predicate of Number, then both types of *ma* comparatives are possible. But the fact that the quantifier *kul* ‘all/every’ is not used and the fact the Free Relatives, in general, do not allow for material to spelled out in the Direct Object position, then a Free Relative *ma* reading can easily be ruled out. Notice that the use of the quantifier *kul* renders the sentence in (206b), ungrammatical, as illustrated in (207).

- (207) * Ali iftara kutub **akthar** min **kul ma** Rami iftara **muz**
 Ali bought books more from all *ma* Rami bought bananas
 Lit: ‘*Ali bought books more than all of what Rami bought bananas.’

The fact that (206b) is grammatical with the direct object ‘bananas’ indicates that it is a Degree *ma* comparative. But is the sentence in (206b) really a subcomparative? McNabb and Kennedy (2009) suggest that it is so, based on the assumption that the reading that a sentence like that in (206b) amounts to is a comparison between the amount of biscuits that Ali ate and the amount of bananas that Rami ate. Under such a reading, it would be quite identical to the reading we get from the English Adjectival comparative in (208a), but not the reading we get from the Adverbial comparative in (208b)

- (208) a. John **ate more biscuits** than Mary ate bananas.
 b. John **ate biscuits more** than Mary ate bananas.

But we do not share McNabb and Kennedy's (2009) judgment on the possible reading for a sentence like (206b). A more accurate reading of (206b) is that *Ali performed the action of eating more than Muna performed the action of eating*. However, this type of example is confusing indeed. That is because, with consumption predicates, like 'eat', one can only measure which event occurred more than the other by measured the outcome of each event, meaning by measuring how many cookies are left in Ali's plate, for example, and comparing with how many cookies are left in Rami's plate, given that they both started out with the same number of biscuits. What is agreed upon by Native Speakers of JA, however, is that the JA comparative in (206b) does not amount to a reading like that in (208a).

Like its JA origin, the English translation in (209) cannot be comparing the number of biscuits; it can only be comparing the frequency of the action, regardless of the overall total number of biscuits consumed by each ate the end.

- (209) Ali akal baskut bi-kamiyyeh galeeleh akthar min ma Rami akal baskut/muz
 Ali ate biscuits in-quantity small.F more from *ma* Rami ate biscuits/bananas
 bi-kamiyyeh kpeereh
 in-quantity a lot
 'Ali ate a small quantity of biscuits more than Rami ate a large quantity of biscuits/bananas.'

For these reasons, I do not believe that JA Degree *ma* allows for subcomparatives. A true subcomparative requires degree abstraction, meaning that a degree variable QP must move to Spec of CP. In English Subcomparatives of Number, for instance, this movement is illustrated as follows.

- (210) John ate more biscuits [_{CP} Op_{QUAN} than Mary ate [_{DegP} t_l bananas].

Evidence for this sort of movement comes from the ban on overt degree QPs where we would expect a trace.

- (211) * John ate more biscuits than Mary ate **three** bananas.'

However, notice that native speakers of English find that the following sentence, with an Adverbial structure, is slightly better and that in (213), even better.

(212) ?? John **ate biscuits more** than Mary ate **three** bananas.'

(213) ? John **ate three biscuits more** than Mary ate **three** bananas.'

According to native speakers of English, the sentence in (212) does not refer to the number of biscuits and the number of bananas consumed by each person, but rather means something like the following. Imagine that there are several eating sessions, perhaps 10 sessions. In some of these sessions, John would participate by eating a number of biscuits. Mary also participated in some of these sessions by eating three bananas each session. However, John attended these eating sessions more frequently than Mary did. So, for instance, if there were a total of 10 eating sessions, then John attended (say) 7 sessions and Mary attended 3 sessions. This way, the sentence in (212) makes sense.

In fact, in JA too, a sentence like (212) is possible using Degree *ma*, although native speakers consider it to be only slightly marginal for reasons of 'weirdness' of the situation described, and not because it is 'ungrammatical'.

(214) ? Ali iftara kutub **akthar** min **ma** Rami iftara palap **muzat**
Ali bought books more from *ma* Rami bought three bananas.F
c.f. '?Ali bought books more than Rami bought three bananas.'

The conclusion to be drawn here is that there are no subcomparatives of number with Degree *ma*. As long as Degree *ma* is used for Adverbial comparison, the meaning intended by a subcomparative of number, like that in (208a), repeated here as (215a), can never be obtained. We can only arrive at the meaning intended by a sentence like that in (215b).

(215) a. John **ate more biscuits** that Mary ate bananas.

b. John **ate biscuits more** than Mary ate bananas.

So how do we convey the intended meaning of a true subcomparative of number like that in (215a), in JA, without it being a subcomparative? The answer is by using *illi* comparatives to compare the items eaten directly to each other.

- (216) Ali akal **baskut** akthar min **il-muz** illi Rami akal-oh
 Ali ate biscuits more from def.bananas that Rami ate-them
 ‘Ali ate more biscuits than the bananas that Rami ate.’

Any native speaker of JA would automatically utter the sentence in (216) if asked to translate from English ‘Ali ate more biscuits than Rami ate bananas’. This method will not work with Free Relative *ma*, on the other hand, since, as the reader may recall, Free Relative *ma* comparatives (and Free Relatives in general) do not permit the pronunciation of an overt Direct Object. It appears, then, that there is no evidence for degree abstraction in the SOC of Degree *ma* comparatives (like *illi* and FR *ma* comparatives).

4.4.4 Summary

We started out this section with the conclusion that the SOC of Degree *ma* comparatives must either be of type <d> or of type <d,t>. We arrived at this conclusion because in the previous section, because we found out that Degree *ma* comparatives cannot amount to individual comparison (type <e>) and the only possible options left were type <d> and type <d,t>. This was also supported since *we found that* there were NIEs in Degree *ma* comparatives, which require an undefined maximal degree. After that, we started from the claim made in McNabb and Kennedy (2009) that the complement of *min* in *ma* comparatives is clausal, and we attempted to find evidence for a type <d,t> SOC (which can only come about in clausal comparison), by testing for degree abstraction in the SOC. No evidence of a type <d,t> SOC could be found, however. Degree *ma* was ungrammatical with subcomparatives of degree and subcomparatives of number which require degree abstraction in the SOC.

Moreover, we mentioned in section (4.1) that McNabb and Kennedy (2009), who do suggest that subcomparatives exist with *ma* comparatives, themselves note that in no other context is degree variable movement in the SOC to Spec-CP allowed, in the first place. Although their work was on Palestinian Arabic, the same results can be found in JA, as well. To illustrate, notice how in (217b) a construction known as a Degree Question (Beck et al.,

2009) is not available in JA or PA, but is available in a language that is known to allow for degree abstraction in the SOC; namely, English.⁹

- (217) a. **How tall** is John?
 b. * **kam/gadiesh** **Taweel** John?
 How.many/how.much tall John
 ‘How **tall** is John’ JA and PA

The next logical step, then, is to look for evidence indicating a type <d> SOC. This will be the topic for the next section.

4.5 A Hidden Degree Nominal Analysis (Sudo, 2009)

Sudo (2009) proposes an analysis for Japanese comparatives, based on what he calls *Hidden Degree Nominals*. A degree nominal is a DP that is not type <e>, but type <d>. Sudo, thus suggests a phrasal comparative analysis for Japanese comparatives like that in (218a), where a hidden degree nominal (*kasikosa* ‘smartness’ in (218b)) is deleted, thus making the sentence appear as if it were a clausal comparative, when in fact it is phrasal underlyingly.

- (218) a. John-wa [Mary-ga kitaisita]-yori kasikoi
 John-TOP [Mary-NOM expected]-than smart
 ‘John is smarter than Mary expected.’ *Surface Form*
 b. John-wa [Mary-ga kitaisita **kasikosa**]-yori kasikoi
 John-TOP [Mary-NOM expected **smartness**]-than smart
 ‘John is smarter than **the smartness** Mary expected.’ *Underlying Form*

Under a Sudo (2009) degree nominal analysis, the word *kasikosa* ‘smartness’ is deleted under identity with the word *kasikoi* ‘smart’ in the matrix clause. Since the two words are not exactly the same, morphologically speaking (cf. *kasikoi* vs. *kasikosa*), Sudo (2009) suggests that this identity requirement is fulfilled by *identity of roots*. So the root of $\sqrt{\text{kasikosa}}$ is ‘*kasikoi*’, and it is this root that must be in identity with the root of the word

⁹ Moreover, Corver (1993) has argued against the claim that there is a *Wh*-like movement of a quantifier element in subcomparatives (in English and Dutch), and that the suggested movement of QPs in subcomparatives in the literature is strange, in that similar *Wh*-movements are not allowed in the grammar (as the Left Branch Condition is violated (see Corver (1993) for details)).

$\sqrt{\textit{kasikoi}}$, which is also ‘*kasikoi*’. However, it is important for this type of analysis that the existence of this degree nominal (i.e. not eliding it) is still grammatical. The fact that it is still grammatical can be seen from example (218b).

The outcome of such an analysis is that the Degree Nominal may serve as a type <d> nominal dominating a CP, and that both of them together make up the SOC. What this achieves is the ability for a comparative to be syntactically phrasal, but show behavior specific to degrees. This sounds rather familiar to our situation with Degree *ma* comparatives. To refresh our memory a bit, we noticed that Degree *ma* comparatives a) cannot have an SOC that is type <e>, b) do not show evidence for a type <d,t> SOC, and c) involve NIEs which necessarily require some form of degree in the SOC. This sounds like a matching situation with that of Japanese (see Sudo (2009) for details on Japanese comparatives). Besides, the only option left to test is the option that the SOC of Degree *ma* comparatives is actually type <d>. Not only would this solve our problems, but also be in line with the assumption we wish to maintain that the preposition *min* only selects for Nominal complements and that all JA comparatives are underlyingly phrasal comparatives.

Let us see what evidence we have for degree nominals. First, the notion of ‘degree nominals’ is not at all strange to the Arabic language. The following example illustrates its existence.

- (219) a. Ali tiʕib min **kuḅur** ma liʕib
 Ali fell.tired from intensity *ma* played.2SG.M
 Lit: ‘Ali became tired due to the intensity to which he played.’
 c.f. ‘Ali got tired because of how much he played.’
- b. Salma Xaafa.t min **surʕat** ma nizil il-maTar
 Salam became.afraid from speed *ma* fell def.rain
 Lit: ‘Salma became afraid due to the speed with which the rain fell.’
 c.f. ‘Salma was afraid of how fast the rain dropped.’

A degree nominal in JA may be followed by another degree nominal. One observable difference in JA between a degree nominal and any other type of head noun is that the degree nominal does not take the definiteness marker, as can be seen from the following example.

- (220) Salma Xaafa.t min **kupur surfat** ma marag ilQiTaar
 Salam became.afraid from intensity speed *ma* passed def.train
 Lit: ‘Salma became afraid due to the intensity of speed with which the train passed by.’
 c.f. ‘Salma was afraid (because) of how fast the train passed by.’

Now the question is whether we find the use of a hidden degree nominal in JA Degree *ma* comparatives, as well. The reader is reminded that for a Sudo (2009) degree nominal analysis to be a viable option, one prerequisite is that the use of an overt degree nominal is still grammatical. This is exactly what we find with Degree *ma* comparatives, as illustrated below.

- (221) a. Ali raKad asraf min *ma* Rami rakaD
 Ali ran faster from *ma* Rami ran
 ‘Ali ran faster than Rami did.’
 b. Ali raKad asraf min **sorfat** ma Rami rakaD
 Ali ran faster from speed *ma* Rami ran
 ‘Ali ran faster than Rami did.’

Degree nominal use in Degree *ma* comparatives is also available in PA and in MSA.

- (222) a. Ali kan yitDamar bi-daraja akbar min **darajat** ma Muna kanat
 Ali used.to complain in.degree bigger from degree *ma* Muna used.to
 titDamar
 complain.FEM
 ‘Ali used to complain to a greater extent/degree than Muna used to complain.’
 PA
 b. habbat il-riyyaH bi-Quwwa akbar min **Quwwat** ma SaQaTat al-?amTaar
 blow def.winds in.strength bigger from strength *ma* fell def.rain
 Lit: The wind blew stronger than the strength of which the rain dropped. MSA

This is actually quite astonishing because, usually, *ma* does not allow an overt head to precede it (only *illi* does). But with degree nominals, it is a different story.

- (223) a. * Ali kan yitDamar akthar min **(il-)taDamur** ma Muna kanat
 Ali used.to complain more from (def.-)complaining *ma* Muna used.to
 titDamar
 complain
 ‘*Ali used to complain more than the complaining of Muna.’ *non degree
 nominal*
- b. Ali kan yitDamar akthar min **darajat** ma Muna kanat titDamar
 Ali used.to complain more from degree *ma* Muna used.to complain
 ‘Ali used to complain more than Muna used to complain.’ *degree nominal*

Toshiko Oda (Personal Communication) raises an interesting point concerning the availability Degree nominals and Concrete nominals. In Sudo’s (2009) Degree Nominal analysis of Japanese comparatives, it is claimed that both Degree nominals and Concrete nominals in *yorimo* comparatives are possible as hidden nominals. In some cases, however, only concrete nominals are possible.

- (224) John-wa [Bill-ga kata]-yori takusanno hon-o katta
 John-TOP Bill-NOM bought-YORI many book-ACC bought
 ‘John bought more books than Bill bought.’
- a. John-wa [Bill-ga kata **ryoo**]-yori takusanno hon-o katta
 John-TOP Bill-NOM bought amount-YORI many book-ACC bought
 ‘John bought more books than the amount of books that Bill bought.’
- b. John-wa [Bill-ga kata **hon**]-yori takusanno hon-o katta
 John-TOP Bill-NOM bought book-YORI many book-ACC bought
 ‘John bought more books than the books that Bill bought.’
- (225) John-wa [Mary-ga yatotta]-yori kasikoi hito-o mituketa
 John-TOP Mary-NOM hired-YORI smart person-ACC found
 Lit. ‘John found a smarter person than Mary hired.’
- a. * John-wa [Mary-ga yatotta **kasikosa**]-yori kasikoi hito-o
 John-TOP Mary-NOM hired smartness-YORI smart person-ACC
 mituketa
 found
 Lit. ‘John found a smarter person than the smartness Mary hired.’

- b. John-wa [Mary-ga yatotta **hito**]-yori kasikoi hito-o mituketa
 John-TOP Mary-NOM hired person-YORI smart person-ACC found
 Lit. ‘John found a smarter person than the person that Mary hired.’

In JA Degree *ma* comparatives, on the other hand, Concrete Degree nominals are ungrammatical, perhaps because a type <d> SOC is required for the use of Degree ‘ma’ comparatives.

- (226) * Ali laga zalameh apka min **il-zalameh** ma Mary fayanat
 Ali found man smarter from def.man ma Mary hired
 ‘Ali found a man smarter than the man Mary hired.’

Notice that with *illi*, the sentence becomes grammatical, as we would expect.

- (227) Ali laga zalameh apka min (il-zalameh) illi Mary fayanat-oh
 Ali found man smarter from (def.man) that Mary hired-him
 ‘Ali found a man that is smarter than the man that Mary hired.’

Moreover, even if we were to suggest the use of FR ‘ma’, the sentence would still be ungrammatical since FR-*ma* cannot be understood as referring to a person. It must be used with inanimate objects. Otherwise, we should be able to use a resumptive pronoun with ‘ma’ and the result should refer to *a smart person that Mary hired*, but that is not the case.

- (228) * Ali laga zalameh aka min ma Mary fayanat-oh
 Ali found man smarter from ma Mary hired-him
 ‘Ali found a man smarter than Mary hired.’

But there is more to be said here. The sentence which uses *ma* is ungrammatical in all cases (i.e. with a Degree nominal, a Concrete nominal, and without any nominal).

- (229) * Ali laga zalameh aka min ma Mary fayanat
 Ali found man smarter from ma Mary hired
 ‘Ali found a man smarter than Mary hired.’

In Japanese, as can be seen from the examples in (225) above, the use of a concrete nominal results in a grammatical sentence. The is the same as in JA when *illi* is used. In other words, the hidden nominal in the Japanese sentences can correspond to either JA Degree *ma*

or JA *illi*. When it corresponds to *illi*, the sentence is grammatical, and thus patterns with Japanese. Likewise, the judgments are similar to Japanese when a Degree nominal is used (both in JA and in Japanese the result is ungrammaticality). The difference with Japanese comes from the use of FR-*ma*. FR-*ma* only allows for inanimate objects.

Moving on, if we were to take the option of the SOC being type <d>, we first need to ask if the language allows for *min* to be followed by a type <d> SOC in other constructions (i.e. does the language allow for *direct* comparison to an overt degree). We find that such constructions, in fact, do exist. JA allows for direct comparison to an overt degree (of type <d>), as in the following.

- (230) Ali aTwal min [_{<d>} **mitrein**]
 Ali taller from [_{<d>} two.meters]
 ‘Ali is taller than [_{<d>} 2 meters.]’
- (231) il-kursi aḅgal min [_{<d>} **40 kilo**]
 def.chair heavier from [_{<d>} 40 kilograms]
 ‘The chair is heavier than 40 kilograms.’
- (232) darajat il-Haraara akthar min [_{<d>} **50 c^o**]
 degree def.heat more from [_{<d>} 50 c^o]
 ‘The temperature is more than [_{<d>} 50 degrees c^o].’

This raises another question about the possibility of clausal comparatives in JA. Toshiko Oda (Personal Communication) raises an interesting question; Is it possible to say something to the effect of ‘Ali ran faster than I thought.’ in JA using ‘ma’, and would that force us to abandon the claim that JA only has phrasal comparatives (perhaps suggest the existence of underlyingly clausal comparatives)? I do not think that underlyingly clausal comparatives exist in JA. ‘illi’ comparatives are not perfectly grammatical with this structure, but they are not as bad as one might expect. As for using ‘ma’, the sentence is perfectly grammatical, as can be seen below, but the real question is what reading does it amount to? We find that it is actually a Free Relative reading, not a Degree ‘ma’ reading. In fact, in MSA a Resumptive Pronoun is used, indicating a Free Relative ‘ma’ construction.

- (233) ? Ali rakaD asraʕ min illi itwaQaʕt-oh
 Ali ran faster from that thought-it
 ‘Ali ran faster than I thought.’
- (234) a. Ali rakaD asraʕ min ma itwaQaʕ
 Ali ran faster from what I.expected
 ‘Ali ran faster than what I thought.’ <JA>
- b. Ali.un rakaD.a asraʕ.a min ma tawaQaʕta-ho
 Ali.NOM ran.ACC faster.ACC from what I.thought-it
 ‘Ali ran faster than what I thought.’ <MSA>

Moreover, as can be seen from example (235) below, there is no such thing as the existence of a resumptive pronoun with a Degree Nominal. This indicates, again, that the sentences in (234) above are indeed FR-ma comparatives.

- (235) * Ali rakaD asraʕ min ma Rami rakaD-oh
 Ali ran faster from ma Rami ran-it
 ‘Ali ran faster than Rami did.’

Furthermore, there is one critical difference between JA and Japanese in this regard. Unlike Japanese (see (236a) below), JA does not allow for the degree reading when predicates like ‘thought’ are used.

- (236) a. Ali-wa [watashi-ga omotta (**hayasa**) yori(mo)] hayaku hashitta
 Ali-TOP I-NOM thought (**speed**) YORI fast ran
 ‘Ali ran faster than I thought.’
- b. * Ali rakaD asraʕ min surʕat ma itwaQaʕt
 Ali ran faster from speed ma thought.1SG
 ‘*Ali ran faster than the speed that I thought.’
- (237) Ali rakaD asraʕ min ma itwaQaʕt
 Ali ran faster from ma thought.1SG
 ‘Ali ran faster than I thought.’
- a. ‘Ali ran faster than what I thought.’
- b. * ‘Ali ran faster than I thought.’

It is not clear to me at this point why this difference between JA and Japanese exists. Perhaps it has to do with the specific behaviors of relative clauses in both languages. Japanese is known to be Internally Headed while JA is not.

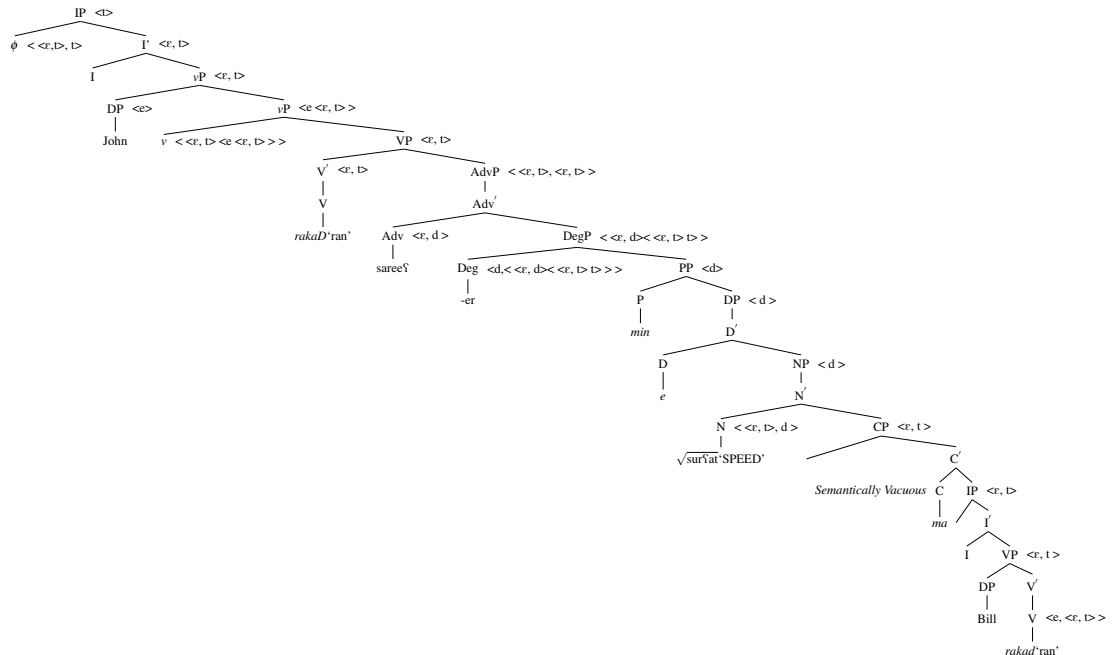
Moving along, the following example illustrates the syntactic deletion under root identity with the antecedent of the degree nominal.

- (238) Ali raKaD $\sqrt{\text{asra}\text{f}}$ min [_{DP} $\sqrt{\text{sur}\text{fa}\text{t}}$ [_{CP} ma Rami rakaD]]
 Ali ran faster from [speed [ma Rami ran]]
 ‘Ali ran faster than Rami did.’

Accordingly, we can now apply a compositional semantics to Degree *ma* comparatives. I will use the example in (239) for this illustration, the relevant structure of which is illustrated in (240).

- (239) John rakaD asra f min ma Bill rakad
 John ran faster from *ma* Bill ran
 ‘John ran faster than Bill did.’

(240)



With this structure that takes into account that Degree *ma* comparatives are only Adverbial in nature, the following illustrates how a semantic composition would apply to (239).

(241) **The Semantic Composition:**

$\llbracket \text{John} \rrbracket = \text{John}$

$\llbracket \text{Bill} \rrbracket = \text{Bill}$

$\llbracket \text{V} \rrbracket = \lambda e \text{ Run}(e)$

$\llbracket \text{Adv} \rrbracket = \llbracket \text{fast} \rrbracket = \lambda e. \lambda d. \text{fast}(e)(d)$

$\llbracket \text{-er} \rrbracket = \lambda d'. \lambda G. \lambda e. \text{MAX}\{d: G(e)(d)\} > d'$

$\llbracket \sqrt{\text{sur}} \text{at} \text{'SPEED'} \rrbracket = \lambda R \in D_{\langle E, t \rangle}. \text{MAX}\{d: \exists e. R(e) \wedge \text{SPEED}(e)(d)\}$

$\llbracket \text{PP}_{\langle d \rangle} \rrbracket = \text{MAX}\{d: \exists e'. \text{SPEED}(e')(d) \wedge \text{Agent}(\text{Bill}, e') \wedge \text{Run}(e')\}$

$\llbracket \text{-er PP} \rrbracket =$

$\lambda G. \lambda e. \text{MAX}\{d: G(e)(d)\} > \text{MAX}\{d: \exists e'. \text{SPEED}(e')(d) \wedge \text{Agent}(\text{Bill}, e') \wedge \text{Run}(e')\}$

$\llbracket \text{AdvP} \rrbracket = \llbracket \llbracket \text{DegP} \rrbracket \rrbracket (\llbracket \text{Adv} \rrbracket)$

$= \lambda e. \text{MAX}\{d: \lambda e. \lambda d. \text{fast}(e)(d)\} > \text{MAX}\{d: \exists e'. \text{SPEED}(e')(d) \wedge \text{Agent}(\text{Bill}, e') \wedge \text{Run}(e')\}$

$\llbracket \text{VP} \rrbracket = \text{MAX}\{d: \exists e. \text{Run}(e) \wedge \text{fast}(e)(d)\} >$

$\text{MAX}\{d: \exists e'. \text{SPEED}(e')(d) \wedge \text{Agent}(\text{Bill}, e') \wedge \text{Run}(e')\}$

$\llbracket v \rrbracket = [\lambda P_{\langle E, t \rangle}. [\lambda x. [\lambda e. P(e) = 1 \ \& \ \text{Agent}(x)(e)]]]$

$\llbracket (239) \rrbracket = (\exists e. \text{Run}(e) \wedge \text{Agent}(\text{John}, e) \wedge \text{MAX}\{d: \text{fast}(e)(d)\}) >$

$\text{MAX}\{d: \exists e'. \text{SPEED}(e')(d) \wedge \text{Agent}(\text{Bill}, e') \wedge \text{Run}(e')\}$

Accordingly, 'degree' is not supplied by the embedded clause in any way, like it is in English clausal comparatives. Instead, the Degree Nominal takes care of the missing degree semantics of the embedded clause, making it possible for a phrasal comparative to behave like a clausal comparative.

4.6 Tying Up Loose Ends

4.6.1 Revisiting Subcomparatives and Negative Island Effects

We mentioned in section (4.4.3.1) that NIEs existed in Degree *ma* comparatives, as illustrate below.

- (242) * Ali rakaD **asraʕ** min ma **ma Hada** rakaD
Ali ran faster from *ma* no one ran
‘*Ali ran faster than no one did.’

If we are to maintain the idea that Degree *ma* comparatives are phrasal comparatives, then where does the undefined maximal degree come from? The Negative Island Effect we observe with Degree *ma* comparatives is due to the fact that there is no maximal degree (of (say) SPEED) that can be defined. With our degree nominal analysis, we can now see that MAX applies via the degree nominal. This would explain why the sentence is ungrammatical, given that the semantics would fail to generate a maximal degree of (say) speed. If John ran 8 mph, then it is true that nobody ran faster than 8 mph. But it is also true that nobody ran faster than 10 mph, or 15 mph. Therefore, a maximal degree of speed cannot be defined, as illustrated below.

- (243) MAX Undefined
- MAX(λd . John ran *d*-fast) > MAX($\lambda d'$. nobody ran *d'*-fast)
 - The degree *d* such that John ran *d*-fast exceeds the degree *d'* such that nobody ran *d'*-fast.

Accordingly, the MAX effect comes from the MAX applied through the Degree Nominal, not through degree abstraction in the embedded *ma* clause.

The question we need to ask now is whether the ungrammatical Degree *ma* comparatives which exhibit NIEs could become grammatical if the Degree Nominal is overt. This question comes from Toshiko Oda (via Personal Communication). As Oda points out, Japanese ungrammatical comparatives that exhibit NIEs become considerably better if the Degree Nominal is overt, as the following illustrates.

(244) Japanese examples (Personal Communication with Toshiko Oda)

- a. * Ali-wa [imamade daremo hasi-re-na-katta yori(mo)] hayaku hashitta
Ali-TOP until.now anyone ran-can-NEG-PAST YORI fast ran
Lit: 'Ali ran faster than no one could until now.'
- b. Ali-wa [imamade daremo hasi-re-na-katta **hayasa** yori(mo)] hayaku
Ali-TOP until.now anyone ran-can-NEG-PAST speed YORI fast
hashitta
ran
Lit: 'Ali ran faster than the speed that no one could until now.'

This is not the case in JA, however, an overt degree nominal cannot save comparative from NIE. The following examples are illustrative.

- (245) a. * Ali rakaD asraŋ min ma ma Hada rakaD
Ali ran faster from ma no person ran
'*Ali ran faster than no one did.'
- b. * Ali rakaD asraŋ min **surŋat** ma ma Hada rakaD
Ali ran faster from speed ma no person ran
'*Ali ran faster than speed that no one ran.'

The following is still ungrammatical, unlike the marginal Japanese counterpart.

- (246) * Ali rakaD asraŋ min ma ma Hada gidir Hata il-ʔan
Ali ran faster from ma no person could until now
'*Ali ran faster than no one could until now.'

The reason for such behavior is most likely due to the definiteness of the degree nominal. JA and Japanese are slightly different in this regard. In JA, the degree nominal is understood to be definite and receives a semantics of definiteness. Also, the use of the definite marker 'il-' is ungrammatical, indicating that it is already inherently definite.

- (247) a. Ali rakaD asraŋ min **surŋat** ma Rami rakaD
Ali ran faster from speed ma Rami ran
'Ali ran faster than Rami ran.'
- b. * Ali rakaD asraŋ min **il-surŋat** ma Rami rakaD
Ali ran faster from def.speed ma Rami ran
'Ali ran faster than Rami ran.'

In Japanese, on the other hand, the empty head relative is definite, but when the Degree Nominal is overt then the option of the Degree Nominal being indefinite becomes available. In other words, the silent version must be definite, but the overt one allows for the indefinite reading, thus circumventing the Negative Island Effect.

4.6.2 The Selectional Properties of the Preposition *min*

At this point, we have covered all three types of JA comparatives (*illi*, *ma*, and phrasal *min* comparatives). When we first started our discussions in chapter 2, we found that the Standard Marker in JA was a preposition. This was one difference between English and JA, in that the Standard Marker ‘than’ in English is (in clausal comparatives cases) considered a complementizer. The JA Standard Marker *min*, on the other hand, is a preposition, and our initial observation was that the preposition *min* never selects for CPs, only phrasal elements. We still needed to test this hypothesis for each type of JA comparative, since two of them, especially *ma* comparatives, have clausal material in the complement of *min*, with no overt NP head embedding the clausal material. Nevertheless, throughout our discussions on each type of JA comparative, we did not find any evidence against our claims that the preposition *min* selects for phrasal complements, meaning all JA comparatives are considered phrasal comparatives.

However, this assumption is challenged by the findings of [McNabb and Kennedy \(2009\)](#), who, as we mentioned in section 4.1, investigate Palestinian Arabic comparatives. The main focus of their work was on the *ma* comparative. In comparing our findings with that of [McNabb and Kennedy \(2009\)](#) for Palestinian, we find a gap between our analysis and theirs. Particularly, the complement of *min* in Palestinian Arabic *ma* comparatives is analyzed as being a CP underlyingly, while the complement of *min* in JA *ma* comparatives is analyzed as DP underlyingly, given the degree nominal analysis. PA *ma* comparatives are analyzed as involving degree abstraction in the SOC, while we have come to the conclusion that JA does not allow for degree abstraction in the SOC. Throughout the previous sections, we have offered our alternative analysis to that in [McNabb and Kennedy \(2009\)](#), but, in this section, we would like to ask if it is really the case that two very similar dialects of Arabic

(JA and PA) could differ so dramatically (i.e. PA allows for degree abstraction in the SOC of *ma* comparatives, but JA does not). This should come as a surprise since Palestinian Arabic (henceforth, PA) and JA are linguistically very similar (main differences are in the phonetic and phonological components of the grammar). Moreover, it makes little sense for PA to allow clausal comparatives (i.e. *min* allows for CP complements) and JA to disallow it. Even if this difference may be attributed to some Parameter of variation, the question still arises as to what this Parameter might be and what is behind it.

Our assumption is that there should not be any difference between JA and PA regarding what is allowed to be underlyingly available at the language's disposal for comparative constructions. Accordingly, this section is devoted to investigating (briefly) whether a phrasal comparative analysis, on par with our analysis here for JA, might be a more motivated analysis. If it is the case that PA actually does NOT allow for clausal comparatives, then we will need to ask if our analysis may account for the PA data presented in [McNabb and Kennedy \(2009\)](#).

No claims are made about the underlying syntax of *illi* comparatives in PA. [McNabb and Kennedy \(2009\)](#) only state that *illi* comparatives 'behave' like English phrasal comparatives in that they target the *individual* or *identity* of what has been eaten (the cookies). But as we have seen with JA Degree *ma* comparatives, the 'behavior' (i.e. the denotation of the SOC as degree denoting or individual denoting) does not always match the syntactic structure. In particular, we saw that JA Degree *ma* comparatives have an SOC that denotes a degree, but a syntax that is phrasal. [McNabb and Kennedy \(2009\)](#) suggest that PA *ma* comparatives target the *Degree* of what has been eaten (i.e. the number of cookies in the previous example), and therefore 'behave' like English clausal comparatives. We explained that Degree *ma* comparatives target degrees. These degrees can refer to frequency of an action (in most cases), length of time of an action, etc., but not the number of items eaten. This idea, coupled with [Shlonsky's \(2002\)](#) suggestion that *ma* is a complementizer in PA, led them to believe that the complement of *min* in *ma* comparatives was a CP underlyingly.

Let us discuss this observation in detail for a moment. The fact that *ma* is a complementizer does not refute the idea that the *ma* clause is itself embedded in a DP. [McNabb and](#)

Kennedy (2009) also state that since PA *ma* comparatives make use of a Gap in the relativized position, as opposed to a resumptive pronoun like *illi* comparatives do. However, recall that we concluded that Degree *ma* comparatives were adverbial comparatives. As such, they should not require the use of resumptive pronouns because it is not required that an operator moves from adjunct position in Degree *ma* comparatives. This fact, then, does not prove that the complement of *min* in PA *ma* comparatives is a CP. Accordingly, there seems to be no clear evidence for the claim that the complement of *min* in PA *ma* comparatives is a CP.

In fact, Shlonsky (2002) following Rizzi (1990), suggests that the CP headed by the complementizer *ma* in PA, is, following Rizzi's (1990) terms, [+Predicational] (see chapter 3 for details). In Rizzi's (1990) terms, a CP that is [+Predicational] 'must be predicated of a subject of predication', meaning there must be an NP taking the [+Predicational] CP as a complement. Moreover, Shlonsky (2002) classifies PA *ma* constructions as Free Relatives and adopts the structure in (176), repeated here as (248).¹⁰

- (248) Ali akal baskut aTyab min [DP kul [NP pro [CP Op₁ [C' **ma** [IP akalt-u t₁]]]]
 Ali ate biscuits tastier from [DP all [NP pro [CP Op₁ [C' what [IP ate.PL t₁]]]]
 'Ali ate more delicious biscuits that all of what you have eaten.'

In addition, we mentioned in the previous section that even PA makes use of degree nominals with *ma* comparatives. Below is the relevant example.

- (249) Ali kan yitDamar bi-daraja akbar min **darajat** ma Muna kanat
 Ali used.to complain in.degree bigger from degree *ma* Muna used.to
 titDamar
 complain.FEM
 Lit: Ali used to complain to a greater extent/degree than Muna used to complain.'
 PA

The following are also grammatical in PA.

¹⁰ Shlonsky (2002) does not make a distinction, like we do here, between two different types of *ma*.

(250) PA

- a. Ali raKad asraʕ min ma Rami rakaD
Ali ran faster from *ma* Rami ran
'Ali ran faster than Rami did.'
- b. Ali raKad asraʕ min **surʕat** ma Rami rakaD
Ali ran faster from speed *ma* Rami ran
'Ali ran faster than Rami did.'

Therefore, we can conclude that there is no unexplainable difference between PA and JA with respect to the selectional properties of the preposition *min* and the resulting underlyingly allowed types of comparatives (as phrasal or clausal comparatives). PA *ma* comparatives, like JA comparatives, must be phrasal comparatives. This is a favorable conclusion since, as we discussed earlier, PA and JA are too linguistically similar to differ to such a great extent in the selectional properties of the preposition *min*. As it seems, then, we started with an observation that the preposition *min* never selects for CPs. This observation gained further support as shown by the phrasal nature of all three types of JA comparatives and the grammaticality judgments we observed for each, which could not have been explained if it were not for the idea that they are indeed phrasal comparatives, despite the Surface clausal look.

On a further note, though, it is not clear what we can label the complement of *min* in Degree *ma* comparatives as. The closest option is to suggest that Degree *ma* constructions, like Free Relative *ma* and *illi* comparatives, are relative clause-like constructions, given that they also allow for some nominal elements intervening between *min* and *ma* (in this case, the degree nominal). Regardless of what we label it as, since *ma* allows for nominal elements to precede it, then we can safely assume a DP embedding the *ma*-CP. This is a favorable conclusion as it provides further evidence for the selectional properties of the preposition *min*, and also provides a unified analysis for both JA and PA.¹¹ Accordingly, the underlying

¹¹ There is one noticeable difference to relative clause-like structure, though, as we mentioned earlier. The nominal preceding *ma* in Degree *ma* comparatives cannot take the definite article *il-*.

(i) * Ali raKad asraʕ min [_{DP} **il-surʕat** [_{CP} ma Rami rakaD]]
Ali ran faster from [def.speed [*ma* Rami ran]]

form of the complement of *min* in Degree *ma* comparatives in both JA and PA must be phrasal, as illustrated in the following.

- (251) Ali rakaD asraʕ min [DP [NP (surʕat) [CP [C^o ma [IP Rami [VP rakaD]]]]]]
 Ali ran faster from [DP [NP (speed) [CP [C^o ma [IP Rami [VP ran]]]]]]
 ‘Ali ran faster than the speed with which Rami ran.’

4.7 Summary

To summarize, our discussions in this chapter have revealed, once again, that JA SOCs can only be syntactically phrasal (i.e. JA only has phrasal comparatives, no clausal comparatives). We started out by differentiating between two types of *ma* used for comparatives; the Free Relative *ma* and the Degree *ma*. Free Relative *ma* comparatives were found to be similar to *illi* comparatives in that they made use of an SOC that was semantically of type <e>. Our main problems arise with the Degree *ma* comparatives. We asked whether or not the analysis given to Free Relative *ma* comparatives would do for Degree *ma* comparatives. We quickly found out that that was not the case, and two separate analyses were required. The fact that only phrasal comparatives exist created a problem at the beginning of this chapter where we observed that there are some characteristic behaviors of degree in the SOC of Degree *ma* comparatives. In particular, we found that Degree *ma* comparatives still exhibited Negative Island Effects and had interpretations indicating degrees linked to events. There was also a contrast in grammaticality which showed ungrammatical constructions where Adjectival Comparatives were used. By examining this and the syntax of the complement of *min* in Degree *ma* comparatives, we found that Degree *ma* comparatives were indeed only used as Adverbial Comparatives. We followed with an analysis based on Sudo’s (2009) ‘Degree Nominals’. This enabled us to explain the ‘degree’ aspect of Degree *ma* comparatives while staying true to the syntax which indicated only phrasal comparatives with Degree *ma*.

‘Ali ran faster than Rami did.’

If a native speaker encounters the definite article on the nominal in question, then he/she would automatically assume that the complementizer in the embedded CP must be *illi*, not *ma*.

On a further note, our discussions above have uncovered two potential problems for the literature on comparatives. First, the DP we posited as embedding the *ma*-CP must contribute to the semantics a type $\langle d \rangle$ argument, but notice that this fact, in and of itself, contradicts the predictions of the Direct Analysis which predicts that an underlyingly phrasal SOC should be of type $\langle e \rangle$. However, given our discussion above, we find that our underlyingly phrasal SOC in *ma*-comparatives is actually type $\langle d \rangle$. The Direct Analysis, therefore, does not account for the data at hand and must be amended in a way that will allow for type $\langle d \rangle$ DPs which embed CPs. Second, recall the Degree Abstraction Parameter (DAP) (Beck et al., 2009; Hohaus et al., 2014). This parameter needs to be more explicit for the data we presented, since it only addresses whether a language **has** degree abstraction or **not**, in general. But, our data show an interesting and unexpected puzzle; namely that the Matrix clause involves degree abstraction (given the *minimum requirement readings and the scope ambiguity with intensional predicates*), but disallows degree abstraction in the embedded clause. This is unexpected since, as far as I know, this is unattested in cross-linguistic studies. The normal case is that a language either allows degree abstraction (in the matrix and the embedded clause) or it does not allow it (in both the matrix and the embedded clause).

I would like to suggest a potential reason why JA allows degree abstraction in the matrix clause, but disallows it in the embedded clause. My suggestion is that perhaps the DAP is on the right track with the matrix clause, but needs to account for morpho-syntactic factors affecting degree abstraction in the embedded clause. Recall that *min* is a preposition and does not allow CP arguments. Perhaps the fact that the complement of *min* is phrasal affects the availability of degree abstraction in the embedded *ma*-clause. Since the SOC is a phrase, there is no way that it can be of type $\langle d, t \rangle$, which is the semantic type required for degree abstraction in the embedded clause. A similar conclusion is suggested in Bhatt and Takahashi (2011) where they argue that variations in comparative constructions cross-linguistically are not to be determined by *parameters* per se, but via the morpho-syntactic properties of the languages themselves. Since the JA Standard Marker is the preposition *min*, which never selects for CPs, the suggestion here is that JA makes up for the lack of a CP as an SOC by allowing for a *Degree Nominal* instead. This would explain the variation between

English and Japanese on the one hand, and JA on the other, without the appeal to Parameters.

Chapter 5

CONCLUSIONS AND FUTURE RESEARCH

Comparative constructions have been a central topic for semanticists over the past 30 years. (see [Von Stechow \(1984\)](#); [Stassen \(1985\)](#); [Heim \(1985\)](#); [Kennedy \(1997\)](#); [Heim \(2001\)](#); [Von Fintel and Heim \(2002\)](#); [Beck et al. \(2004\)](#); [McNabb and Kennedy \(2009\)](#), among others). This research endeavored to add to the existing body of literature by investigating comparative constructions in Jordanian Arabic (JA), which is one dialect of colloquial Arabic spoken in Jordan, and is one member of the Levant Arabic language group spoken in the Levant States of the Middle-East.

Let us begin by refreshing our memory with respect to the three types of JA comparatives we investigated throughout this research.

- (252) a. Ali akal baskut akthar **min** Sarah
Ali ate biscuits more from Sarah
'Ali ate more biscuits than Sarah ate.' Phrasal *min* Comparative
- b. Ali akal baskut akthar **min illi** Sarah aklat-oh
Ali ate biscuits more from *illi* Sarah ate-them
'Ali ate more biscuits than Sarah did.' *illi-Type Comparative*
- c. Ali akal baskut akthar **min ma** Sarah aklat
Ali ate biscuits more from *ma* Sarah ate
'Ali ate more biscuits than Sarah did.' *ma-Type Comparative*

In concluding this work, we will discuss three main aspects of the issue: a) conclusions specific to the topics at hand in this research (see section [5.1](#)), b) conclusions to be drawn for the general debates in the literature on the topic of the syntax and semantics of comparatives (see section [5.2](#)). The latter will be divided into two parts: a) suggestions for future research across languages (see section [5.2.1](#)), and b) suggestions for future research within JA (see section [5.2.2](#)).

5.1 Research Summary and JA Specific Conclusions

Some of the main questions of this research had arisen simply by taking a look at the surface structure of the three types of JA comparatives above. To start with, the Phrasal *min* comparative has a surface form that is considered to be a typical example of a phrasal comparative. The other two types (the *illi*-type and the *ma*-type), involve clausal material in the complement of *min*. This led us to the first set of major questions: a) Are there underlyingly clausal comparatives in JA (like there are in English), b) Are there underlyingly phrasal comparatives (like (say) Japanese), c) Are phrasal *min* comparatives derived from a clausal comparative source (the Reduction Analysis), or are they underlyingly phrasal (the Direct analysis)?

Furthermore, a set of more detailed questions were brought to the forefront when we noticed that there was a difference between *illi* comparatives and *ma* comparatives with respect to grammaticality judgments. As the reader may remember, *ma* comparatives exhibited a variation in grammaticality based on what type of gradable predicate was used. However, when we use ‘illi’ instead of ‘ma’, the sentence becomes grammatical and, in fact, we found that it was grammatical with the comparative adjective *akthar* ‘more’, as well.

We also noticed that the latter two types of JA comparatives also differed in their grammaticality judgments pertaining to negative island effects, and subcomparatives. While *illi* comparatives banned all types of subcomparatives, the *ma*-type allowed for subcomparatives of number.

These three issues were the starting point of our intent to investigate comparative constructions in JA. From there, we set a path of investigation, which involved the examination of each type of JA comparative with respect to questions like a) is it underlyingly phrasal or clausal, b) what is the semantic type of the SOC, and c) is there degree abstraction involved in the SOC? On a more specific note, however, the main problem was within the initial *ma* comparative data. *ma* comparatives exhibited negative island effects and allowed for subcomparatives of number, but did not allow for subcomparatives of degree. What this meant was that *ma* comparatives showed characteristic behavior of both comparatives with type <e> SOCs and comparatives with type <d>/<d,t> SOCs. As such, a more rigorous analysis

was required.

Therefore, we started out in chapter 2 with the investigation of phrasal *min* comparatives. Our objectives were to determine where JA comparatives fell within the cross-linguistic picture of comparatives regarding syntactic structure, and semantic composition. Two main issues were to be investigated: a) Do JA comparatives make use of the contextual strategy of comparison or the compositional strategy? b) What is the most suitable matrix clause syntax that we must assume for all JA comparatives (the Classical architecture or the Deg-Headed architecture)? c) Are JA phrasal *min* comparatives derived from underlyingly clausal comparatives (i.e. Does JA allow for both underlyingly clausal comparatives and underlyingly phrasal comparatives, or only one of them)?

Chapter 2 concluded that JA comparatives were not of the contextual type. JA comparatives make use of the compositional semantic strategy whereby a free degree variable is supplied from within the composition itself, not from the context. Furthermore, we found that the most suitable structure for the matrix clause of JA comparatives was the Classical structure assumed in works like Heim (1985), the most convincing factor of which was the evidence that JA comparatives required the ability to move the degree head ‘-er’ and the SOC at LF in a scope position where it can bind a degree variable, an operation that is impossible if one were to assume the Deg-headed structure (and its relevant semantic assumptions). Chapter 2 concluded with examples of a syntactic analysis and a semantic derivation of phrasal *min* comparatives. On a further note, the chapter also brought into the forefront the assumption that the preposition *min* (which acts as the semantic standard marker) does not select for clausal material. The latter assumption, however, we were forced to hold onto until we tested it against the *illi* and *ma* comparatives data.

Chapter 3 examined the *illi*-type comparative, with respect to the underlying syntax of the complement of *min*, the existence of degree abstraction in the SOC, and the semantic type of the SOC. Providing evidence that was constant with our assumptions about the selectional properties of the preposition *min*, we found that *illi* comparatives involved a complement of *min* that was phrasal. In particular, we found that the complement of *min* in *illi* comparatives was a relative clause-like structure, and the nominal elements were allowed to intervene

between *min* and *illi*. Semantically, the *illi* comparative was found to have an SOC of type <e>, denoting an individual, rather than a degree. This makes sense if *illi* comparatives do not allow for subcomparatives, and do not exhibit negative island effects, both of which would require a level of degree semantics. All in all, JA *illi* comparatives were shown to be similar to Japanese comparatives with the nominalizer *no*. This led to the question of whether the two languages may in fact make use of the same semantic strategy (compositional rather than contextual), instead of Japanese comparatives making use of the contextual strategy as suggested in Beck et al. (2009). In fact, we suggested that they do use the same semantic strategy but may differ in the language specific syntax of relative clauses (Japanese relative clauses being internally headed).

Chapter 4 provided support for our initial assumption about the selectional properties of the preposition *min* (that it selects for phrasal constituents, i.e. there are no clausal comparatives in JA). We started out with an observation that there are, in fact, two different types of *ma* when it comes to comparatives. Differentiating between two types of *ma* used for comparatives; the Free Relative *ma* and the Degree *ma*, was our first priority. Free Relative *ma* comparatives were found to be similar to *illi* comparatives in that they made use of an SOC that was semantically of type <e>. This was in line with FR *ma* comparatives' semantic behavior. FR *ma* comparatives (like *illi* comparatives) were found to involve the use of a resumptive pronoun, lack negative island effects, and ban subcomparatives. We then asked whether or not the analysis given to FR *ma* comparatives would fit for Degree *ma* comparatives. We quickly found out that that was not the case, and two separate analyses were required, given that Degree *ma* comparatives resulted in interpretations involving the description of eventuality, which in no way can be type <e>. Therefore, Degree *ma* comparatives were concluded to be essentially different from FR *ma* comparatives.

The fact that only phrasal comparatives exist created a problem at the beginning of this chapter where we observed that there are some characteristic behaviors of degree in the SOC of Degree *ma* comparatives. In particular, we found that Degree *ma* comparatives still exhibited Negative Island Effects and had interpretations indicating degrees linked to

eventuality. There was also a contrast in grammaticality which showed ungrammatical constructions where Adjectival Comparatives were used. By examining this and the syntax of the complement of *min* in Degree *ma* comparatives, we found that Degree *ma* comparatives were indeed only used as Adverbial Comparatives. We followed with an analysis based on Sudo's (2009) 'Degree Nominals'. This enabled us to explain the 'degree' aspect of Degree *ma* comparatives while staying true to the syntax which indicated only phrasal comparatives with Degree *ma*.

5.2 General Theoretical Conclusions

5.2.1 Suggestions for Future Research on Other Languages

A commonly asked question in the literature on comparatives is related to the underlying structure of comparative constructions. (Heim, 1985; Lechner, 2001; Kennedy, 2007; Beck et al., 2009; Bhatt and Takahashi, 2011) In particular, two main views (as discussed in chapter 1) are available: a) The Reduction Analysis (see Lechner (2001) which states that surface phrasal comparatives (in most cases) are underlyingly clausal (i.e. clausal comparatives are the only underlying option available), and b) The Direct Analysis (see Heim (1985); Bhatt and Takahashi (2011)) which states that underlyingly phrasal comparatives are available as well. Similarly, the literature asks whether there are languages which lack one or the other all together (i.e. no underlyingly phrasal comparatives or no underlyingly clausal comparatives). With respect to this issue, we can connect our findings about JA comparatives with the general literature by providing our conclusion about JA comparatives, namely, that underlyingly clausal comparatives do **not** exist. All JA comparatives are underlyingly phrasal. This should come as a surprise to the reduction analysis, but be well in line with the direct analysis. Bhatt and Takahashi (2011), for example, provides evidence that some languages may indeed lack one of these two options all together (particularly, Hindi-Urdu). The direct analysis is, thus more in line with our conclusions as it permits for the existence of purely underlyingly phrasal options for comparative constructions. But, as stated in the previous chapter, the direct analysis may need to account for underlyingly phrasal comparatives that involve the use of degree nominals, like our degree *ma* comparatives, for instance. The

general claim of the Direct Analysis (see [Kennedy \(2007\)](#)) is that an underlyingly phrasal SOC is most likely type <e>. Degree *ma* comparatives, however, were shown to be phrasal and at the same time it was shown that a type <e> SOC for them was impossible, due to the fact that they describe eventuality in their interpretations. Clearly, then, more research is required on this issue. In particular, in light of our findings here and similar findings in [Sudo \(2009\)](#) for Japanese, for instance, the question arises as to whether we need to take a second look at languages that are already claimed to only involve underlyingly phrasal comparatives and see whether a degree nominal analysis may be a workable option.

Related to the previous point is the commonly raised question in the literature regarding degree-less languages. Are there languages which completely/partially lack a degree-based semantics? Certainly this issue may require us to revisit already discussed languages in search of alternative analyses. Take, for example, [Beck et al.'s \(2009\)](#) analysis of Japanese comparatives, where it was suggested that Japanese lacks a degree-based semantics for comparatives all together. As discussed in the previous chapter, [Sudo \(2009\)](#) provides an alternative analysis whereby degree is not lacking in Japanese comparatives, but takes on a different form and strategy; namely a degree nominal form/strategy. Perhaps, then, the question we need to ask is how do languages differ in terms of the available strategies they have for expressing degree in comparatives?

A question I would like to suggest for future research is what factors out there play a role in determining which strategy (an English-like strategy or a Degree Nominal-like strategy) a language makes use of to denote degrees in comparative constructions? Is it some linguistic parameter, or is it the specific syntax of that language? [Bhatt and Takahashi \(2011\)](#) argue that it is the latter. They suggest that languages differ in terms of the selectional properties of the standard marker (syntactically in JA the preposition *min*). These differences are what causes variability in what is underlyingly allowed in the language (phrasal or clausal). So, if, as is the case with JA, the standard Marker can syntactically only select for a DP, then it makes sense that the language will only have underlyingly phrasal comparatives. But then the question is whether a degree based semantics is ruled out. We have shown in our work on JA comparatives that this is not the case. A degree semantics still can play a role in JA

comparatives although the selectional properties of *min* indicate only phrasal comparatives underlyingly. How would the idea that there are different strategies to manifest degree affect research into comparatives of other languages? What is more, what are the exact effects of the selectional properties on the limitations of expression of degree?

Our discussions on Degree *ma* comparatives have uncovered two potential problems for the literature on comparatives. First, we find that our underlyingly phrasal SOC in Degree *ma*-comparatives is actually type $\langle d \rangle$. The Direct Analysis, therefore, does not account for the data at hand and must be amended in a way that will allow for type $\langle d \rangle$ DPs which embed CPs. Moreover, the Degree Abstraction Parameter (DAP) (Beck et al., 2009; Hohaus et al., 2014) needs to be more explicit for the data we presented, since it only addresses whether a language **has** degree abstraction or **not**, in general.

But, our data show an interesting and unexpected puzzle; namely that the Matrix clause involves degree abstraction (given the *minimum requirement readings* and *the scope ambiguity with intensional predicates*), but disallows degree abstraction in the embedded clause. This is unexpected since, as far as I know, this is unattested in cross-linguistic studies. The normal case is that a language either allows degree abstraction (in the matrix and the embedded clause) or it does not allow it (in both the matrix and the embedded clause).

I would like to suggest a potential reason why JA allows degree abstraction in the matrix clause, but disallows it in the embedded clause. My suggestion is that perhaps the DAP is on the right track with the matrix clause, but needs to take into consideration the morpho-syntactic factors affecting degree abstraction in the embedded clause. Recall that *min* is a preposition and does not allow CP arguments. Perhaps the fact that the complement of *min* is phrasal affects the availability of degree abstraction in the embedded *ma*-clause. Since the SOC is a phrase, there is no way that it can be of type $\langle d, t \rangle$, which is the semantic type required for degree abstraction in the embedded clause. A similar conclusion is suggested in Bhatt and Takahashi (2011) where they argue that variations in comparative constructions cross-linguistically are not to be determined by *parameters* per se, but via the morpho-syntactic properties of the languages themselves. Since the JA Standard Marker is the preposition *min*, which never selects for CPs, the suggestion here is that JA makes up for

the lack of a CP as an SOC by allowing for a *Degree Nominal* instead. These are topics that I leave for future research on comparatives of other languages.

5.2.2 Suggestions for Future Research within JA

The Degree *ma* construction is quite puzzling. Despite its appearance, we have, nevertheless, concluded that it must be a relative clause-like construction. It is different from JA relative clauses in the sense that no resumptive pronoun is used with *Degree ma*. As we mentioned earlier, it is not clear what type of relative clause account fits the Degree *ma* comparative. Moreover, another difference regarding the behavior of relative clauses is that typically, a head noun is allowed to be overt. With Degree *ma*, on the other hand, we have seen that this is not the case. Degree *ma* does not allow for any overt head nominal, and to make matters even more puzzling, when a Degree nominal is used as head of the Degree *ma* relative clause, it is allowed. The questions we need to ask are, thus, why are head nominals not allowed with Degree *ma*, despite it being a structure most likely like a relative clause? Why, also, is it possible for Degree nominals to appear? These questions are not dealt with in the Generative framework, and in fact, the former question raises concerns for typical accounts of relative clauses in Arabic, in general. In particular, no Generative account that I am aware of suggests the existence of a relative clause in Arabic that does not make use of a resumptive pronoun and that typically does not allow for overt head nominals.

Furthermore, it is not clear what type of relative clause construction may involve a head nominal that is semantically definite but does not allow for definiteness to be overtly manifest on the Degree Nominal. I am not aware of any Generative account of such a relative clause-like construction. What is the relationship, if any, with the fact that Degree *ma* constructions, typically do not allow for an overt head nominal and the fact that the only ones that are allowed to be overt (namely, Degree nominals) are not allowed to take the definite marker *il-*? The semantics of the Degree *ma* construction has shown there to be definiteness in the computation, so what syntactic reason is behind the blockage of overt definiteness with Degree nominals?

Another issue is as follows: what is it that makes *ma* comparatives involve two possible constructions with two different uses and meanings, but disallows such behavior for *illi* comparatives (i.e. why is it not the case that, like *ma* comparatives, *illi* comparatives may also have two different sub-types)? I can only speculate at this point (since, as we mentioned, there is no clear Generative account in this regard) and suggest that perhaps it may be due to the syntax of Free Relatives in JA. The reader may have noticed that *ma* was taken to be a complementizer in both FR-*ma* comparatives and Degree *ma* comparatives (see [Shlonsky \(2002\)](#) for similar views). The literature on Free Relatives, however, suggests multiple possibilities, all of which include overt Spec-CP material, not Complementizer material (see, for instance, [Bresnan and Grimshaw \(1978\)](#); [Van Riemsdijk \(2006\)](#)). For example, in English ‘This cost more than what you bought.’, ‘what’ is taken to be in Spec-CP. It is clear that more work needs to be done to uncover the true nature of free relatives in JA in general and its relationship to *ma* comparatives in particular. The latter three issues are suggested as projects for future research on Degree nominals, in general, and the syntax of relative clauses in Arabic.

Concerning future research within JA, I would like to also suggest a few ideas concerning the effects of the selectional properties of *min* on other constructions of gradable comparison in JA. These topics are not directly linked to any one type of JA comparative, but are related to them all. Gradable predicates are not confined to *comparative* constructions. Take the following constructions, for example. They all involve some type of degree and a gradable predicate like ‘tall’.

- | | | |
|-------|---------------------------------------|--|
| (253) | a. John is taller than 6 feet. | Comparison to a Degree (<i>CompDeg</i>) |
| | b. John is 2 inches taller than Mary. | Difference Comparative (<i>DiffComp</i>) |
| | c. How tall is John? | Degree Question (<i>DegQ</i>) |
| | d. John is 6 feet tall. | Overt Measure Phrase (MP) |

The dissertation has focused on the most researched type of gradable constructions; namely, the comparative construction. The following, however, explores the existence of other types of gradable constructions in JA, such as those in (253) above.

5.2.2.1 Difference Comparison, Overt Measure Phrases and Degree Questions

In JA, we find that the following types of gradable constructions from (253) do exist, but not with the use of a gradable adjective, but rather by nominal constructions. Only the ‘Comparison to a Degree’ construction utilizes a gradable adjective like its English counterpart.

- (254) a. John is taller than 2 meters. Comparison to a Degree (*CompDeg*)
b. Ali aTwal min mitrein
Ali taller from 2.meters
'Ali is taller than 2 meters.'

All of the other gradable constructions in (253), exist in JA only in a nominalized fashion.

- (255) John is **2 inches** taller than Mary. Difference Comparison (*DiffComp*)
a. * John **ipnein inch** aTwal min Mary
John two inches taller from Mary
'John is 2 inches taller than Mary'
b. John aTwal min Mary **bi-ipnein inch**
John taller from Mary by-two inches
Lit: 'John is taller than Mary by 2 inches.'

- (256) John is **6 feet** tall. Overt Measure Phrase (*MP*)
a. * John **6 Qadam Taweel**
John six feet tall
'John is six feet tall.'
b. *Tuul* John **6 Qadam**
Height John 6 feet
Lit: 'The height of John is 6 feet.'

- (257) **How tall** is John? Degree Question (*DegQ*)
a. * **gadiesh** *Taweel* John?
How.much tall John
'How tall is John?'

- b. **gadiesh** *Tuul* John?
how.much height John
Lit: 'How much is the height of John?'

Beck et al. (2009) suggest the following three parameters for cross-linguistic variation of gradable constructions.

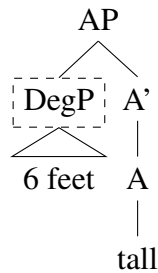
- (258) a. Degree Semantics Parameter (DSP):
A language does/does not have gradable predicates (type <d,<e,t> > and related). i.e. lexical items that introduce degree arguments.
- b. Degree Abstraction Parameter (DAP) (Beck et al., 2004):
A language does/ does not have binding of degree variable in the syntax.
- c. Degree Phrase Parameter (DegPP):
The degree argument position of a gradable predicate may/may not be overtly filled.

In the previous chapters I already discussed the second parameter (i.e. the DAP). I will not repeat this here. The existence of Difference Comparatives is taken to be an indication that there is a positive setting for what Beck et al. (2009) call the Degree Semantics Parameter, which is stated as follows. To test for the DSP one must ask the following:

- (i) Does the language have a family of expressions that plausibly manipulate degree arguments: comparative, superlative, equative morphemes, items parallel to *too* and *enough*?
- (ii) Does the language have expressions that plausibly refer to degrees and combine with degree operators: comparison with a degree (CompDeg), difference comparative (DiffC)?

To test for the DegPP, one must ask whether the language allows the degree argument position of the AP to be overtly filled as in the following.

(259)

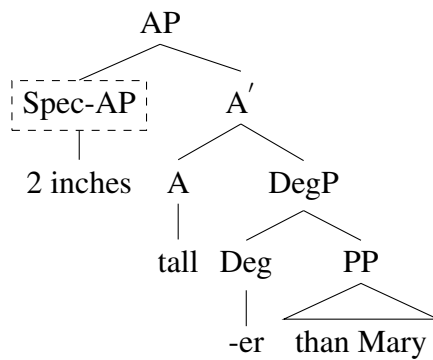


If the Spec of AP (the position of the DegP) can be overtly filled, then expressions like overt Measure Phrases and Degree Questions should be available. Accordingly, since JA lacks MPs and DegPs, then JA has a negative setting for the DegPP. One question that future research may wish to pursue is why JA has a negative setting for this parameter, in the first place. What causes the negative setting of DegPP? Another related question is why JA has a different form for the Difference Comparison whereby the differential phrase is linearly the right-most element and introduced by a *by*-Phrase. It is clear that JA has a positive setting for the DSP (the parameter responsible for Difference Comparatives), since it has comparatives, gradable adjectives, superlatives, comparison with a degree, etc. So why, then does it lack the expression of the difference comparison in a manner similar to the English-style difference comparative (i.e. without a *by*-phrase)?

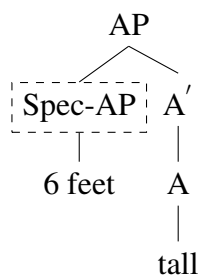
I suggest a direction that future research may wish to pursue; namely, that both of these questions can be answered based on the syntax we assume for JA gradable predicates. This will explain the facts observed above, and also, question the need for two parameters to rule out what are essentially one and the same issue. Let us assume for the time being the basic syntactic structure required for a difference comparative and an overt Measure Phrase construction in English.¹

¹ Notice that the Adjective is to the left of the DegP, which is not the same structure assumed in the previous chapters for English. This is intended for illustrative purposes only, in order to make a simple point that will require a more extensive discussion otherwise.

(260) Difference Comparative

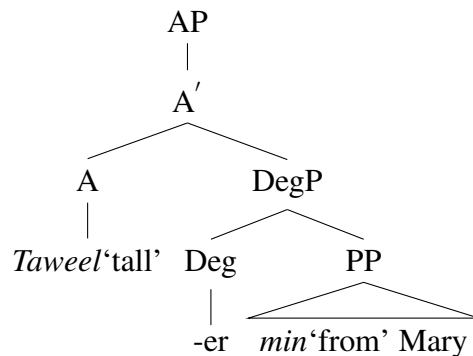


(261) Overt Measure Phrase Construction



Recall the JA Gradable AP structure, repeated here as (262).

(262)



Notice that in (262), Spec-AP is not filled. So what is to prevent JA from filling an unfilled Spec-AP with an overt degree to form a Difference Comparative (cf. (260)) or an overt Measure Phrase construction (cf. (261))? This is one more topic I will leave for future research.

5.2.2.2 *too-Excessive and as Adjective as Constructions*

The following constructions from English have very different JA counterparts. Again, the nominal method is used instead of gradable adjectives. The first set of examples (cf. (263) and (264)) concerns *too-Excessive* constructions.

- (263) a. *too-Excessive*
b. The water is *too* hot.
= It is not possible for me to use it (to shower, for example).
c. The box is *too* heavy.
It is not possible for me to carry it.
d. The couch is *too* big. = There is no way it can fit through the door.
- (264) a. il-may Hamyeh ktheer
def.water hot a lot
'The water is very hot'
= I will be careful when use it (to shower, for example)
≠ It will burn me if I use it (to shower, for example)
- b. il-Sandoog þgeel ktheer
def.box heavy a lot
Lit: 'The box is very heavy.'
= I will fell tired after carrying it.
≠ It is impossible to carry it.
- c. il-kanabayeh kbeer-eh ktheer
def.couch big.FEM a lot
Lit: 'The couch is very big.'
= I will need to pause and think about how I can fit it through the door.
≠ It is impossible to fit through the door. I will have to tear down a wall or buy a smaller couch.

The following examples illustrate the 'Equative' construction and its JA counterpart.

(265) *as* Adjective *as* Equative

- a. John is *as* tall *as* Mary
- b. John nafs Tuul Mary
John same height Mary
Lit: 'John is the same height as Mary.'

We would expect that JA should have these constructions readily available just as English, since JA, like English, has as positive setting for the DSP. However, that is not the case. *Too-Excessive* and Equatives are clearly missing. What could explain this pattern? Surely appealing to parameters might not provide a detailed enough answer. My suggestion is that we must, once again, recognize the differences between JA and English with respect to the selectional properties of what is considered to be the Standard Marker. Future research may also find it fruitful to investigate the differences between the two languages in regards to what is allowed to constitute the degree head in both languages.

5.3 Summary

In this chapter, we summarized the main problems and findings of our research on JA comparatives. We also suggested conclusions related to the general literature on comparatives and suggested topics for future research (both cross-linguistic and language-specific topics). Though Modern Standard Arabic may be thought of as a language that has been extensively studied, one aspect (namely, comparatives) have not received much attention. Even more so is the Jordanian Arabic dialect, or any other Arabic dialect, for that matter, regarding research on comparatives. From our research, we found that there is more than meets the eye regarding similarities between JA and Japanese. Accordingly, I would like to conclude this research with one final suggestion for future research. The suggestion is that more work needs to be done on cross-linguistic similarities/differences between languages with respect to comparatives. One way to start such an investigation is to take the suggestion we made in this research and that suggested in [Bhatt and Takahashi \(2011\)](#) as well, regarding the selectional properties of whatever stands as the Standard Marker in that language, and take that as a major distinguishing factor between what can be expected of languages with

respect to comparatives. For instance, we found that Palestinian Arabic, Modern Standard Arabic, Jordanian Arabic, and Japanese all involve the use of a Standard Marker that selects for phrasal constituents. We also found that this was closely related to the fact that underlyingly clausal comparatives were missing in each language/dialect. Perhaps, then, future research may want to shed some light on the relationship between the selectional properties of whatever plays the semantic role of Standard Marker and what types of comparatives are shown to exist in that language underlyingly.

BIBLIOGRAPHY

- Abney, S. P. (1987), *The English noun phrase in its sentential aspect*, PhD thesis, Massachusetts Institute of Technology.
- Aoun, J. E., Benmamoun, E. and Choueiri, L. (2009), *The syntax of Arabic*, Cambridge University Press.
- Badawi, E. S., Carter, M. and Gully, A. (2013), *Modern written Arabic: A comprehensive grammar*, Routledge.
- Beck, S., Hohaus, V. and Tiemann, S. (2012), A note on phrasal comparatives, in 'Semantics and Linguistic Theory', Vol. 22, pp. 146–165.
- Beck, S., Krasikova, S., Fleischer, D., Gergel, R., Hofstetter, S., Savelsberg, C., Vanderelst, J. and Villalta, E. (2009), 'Crosslinguistic variation in comparison constructions', *Linguistic variation yearbook* 9(1), 1–66.
- Beck, S., Oda, T. and Sugisaki, K. (2004), 'Parametric variation in the semantics of comparison: Japanese vs. English', *Journal of East Asian Linguistics* 13, 289–344.
URL: <http://link.springer.com/article/10.1007/s10831-004-1289-0>
- Bhatt, R. and Pancheva, R. (2004), 'Late merger of degree clauses', *Linguistic Inquiry* 35(1), 1–45.
- Bhatt, R. and Takahashi, S. (2011), 'Reduced and unreduced phrasal comparatives', *Natural Language & Linguistic Theory* 29(3), 581–620.
URL: <http://link.springer.com/10.1007/s11049-011-9137-1>
- Bresnan, J. (1975), 'Comparative deletion and constraints on transformations', *Linguistic Analysis* 1(1), 25–74.

- Bresnan, J. and Grimshaw, J. (1978), 'The syntax of free relatives in english', *Linguistic Inquiry* **9**(3), 331–391.
- Bresnan, J. W. (1973a), 'Syntax of the comparative clause construction in english', *Linguistic inquiry* pp. 275–343.
- Bresnan, J. W. (1973b), 'Syntax of the comparative clause construction in english', *Linguistic inquiry* **4**(3), 275–343.
- Chomsky, N. (1965), 'Aspects of the theory of syntax cambridge', *Multilingual Matters: MIT Press* .
- Chomsky, N. (1973), 'Conditions on transformations. a festschrift for morris halle, ed. by stephen r. anderson & paul kiparsky, 232-86', *New York: Holt* .
- Chomsky, N. (1977), *On wh-movement*, na.
- Chomsky, N. (1980), 'On binding', *Linguistic inquiry* **11**(1), 1–46.
- Chomsky, N. (1981), 'Principles and parameters in syntactic theory', *Explanation in linguistics: The logical problem of language acquisition* **32**, 75.
- Chomsky, N. (1986), *Barriers*, Vol. 13, MIT press.
- Chomsky, N. (1991), 'Some notes on economy of derivation and representation. principles and parameters in comparative grammar, dir. r. freidin, 417-54'.
- Corver, N. (1993), 'A note on subcomparatives', *Linguistic Inquiry* pp. 773–781.
- Cresswell, M. (1977), 'J. 1977. the semantics of degree', *Montague grammar* pp. 261–292.
- Embick, D. and Noyer, R. (2001), 'Movement operations after syntax', *Linguistic inquiry* **32**(4), 555–595.
- Grimshaw, J. (1987), 'Subdeletion', *Linguistic Inquiry* **18**(4), 659–669.
- Heim, I. (1985), 'Notes on comparatives and related matters', *Unpublished ms., University of Texas, Austin* .
- Heim, I. (2000), 'Degree Operators and Scope', *Proceedings of SALT 10, Cornell University* (1), 214–239.

- Heim, I. (2001), 'Semantics and morphology of person and logophoricity', *Ms., Tübingen* .
- Hendrick, R. (1978), 'The phrase structure of adjectives and comparatives', *Linguistic Analysis Seattle, Wash.* **4**(3), 255–297.
- Higginbotham, J. (1983), 'Logical form, binding, and nominals', *Linguistic inquiry* **14**(3), 395–420.
- Hohaus, V., Tiemann, S. and Beck, S. (2014), 'Acquisition of Comparison Constructions', *Language Acquisition* **21**(3), 215–249.
URL: <http://www.tandfonline.com/doi/abs/10.1080/10489223.2014.892914>
- Ishii, Y. (1991), 'Operators and empty categories in Japanese'.
- Izvorski, R. (1995), A dp-shell for comparatives, in 'Proceedings of ConSOLE III', pp. 99–121.
- Jacobson, P. (1988), The syntax and semantics of free relatives in English, in 'LSA Winter Meeting, New Orleans'.
- Jacobson, P. (1995), On the quantificational force of English free relatives, in 'Quantification in natural languages', Springer, pp. 451–486.
- Kennedy, C. (1997), 'Comparison and polar opposition', *Proceedings of SALT* pp. 240–257.
URL: <http://elanguage.net/journals/salt/article/download/7.240/1667>
- Kennedy, C. (2005), 'Variation in the expression of comparison', *Ms., talk given at Cornell University* .
- Kennedy, C. (2007), Modes of comparison, in 'Proceedings from the annual meeting of the Chicago Linguistic Society', Vol. 43, Chicago Linguistic Society, pp. 141–165.
- Larson, R. (1991), 'The projection of dp (and degp)', *Unpublished manuscript, Stony Brook University* .
- Lechner, W. (1999), 'Comparatives and dp-structure'.
- Lechner, W. (2001), 'Reduced and phrasal comparatives', *Natural Language & Linguistic Theory* **19**(4), 683–735.

- McCloskey, J. (2011), 'Resumptive pronouns, \bar{a} -binding, and levels of representations in irish', *Resumptive pronouns at the interfaces* **5**, 65.
- McNabb, Y. and Kennedy, C. (2009), 'Extraction and deletion in palestinian arabic comparatives'.
- Merchant, J. (2009), 'Phrasal and clausal comparatives in Greek and the abstractness of syntax', *Journal of Greek Linguistics* **9**, 134–164.
- Oda, T. (2008), *Degree constructions in Japanese*, ProQuest.
- Reinhart, T. and Reuland, E. (1993), 'Reflexivity', *Linguistic inquiry* **24**(4), 657–720.
- Rizzi, L. (1990), *Relativized minimality.*, The MIT Press.
- Ross, J. R. (1967), 'Constraints on variables in syntax.'
- Rullmann, H. (1995), *Maximality in the semantics of wh-constructions*, PhD thesis, University of Massachusetts Amherst.
- Ryding, K. C. (2005), *A reference grammar of modern standard Arabic*, Cambridge university press.
- Sapir, E. (1944), 'Grading, a study in semantics', *Philosophy of science* **11**(2), 93–116.
- Sawada, O. (2007), Pragmatic aspects of implicit comparison, in '81st Annual Meeting of the Linguistic Society of America. Anaheim, CA'.
- Sells, P. (1984), 'Syntax and semantics of resumptive pronouns', *Linguistic review* **4**(3), 261–267.
- Sharvy, R. (1980), 'A more general theory of definite descriptions', *The philosophical review* **89**(4), 607–624.
- Shlonsky, U. (2002), Constituent questions in palestinian arabic, in 'Themes in Arabic and Hebrew syntax', Springer, pp. 137–159.
- Shlonsky, U. (2004), 'The form of semitic noun phrases', *Lingua* **114**(12), 1465–1526.
- Stassen, L. (1985), *Comparison and universal grammar*, Blackwell.
- Sudo, Y. (2009), Invisible degree nominals in japanese clausal comparatives, in 'Proceedings

- of the 5th Workshop on Altaic in Formal Linguistics. MITWPL, Cambridge, Mass', pp. 285–295.
- Tredinnick, V. A. (2005), On the semantics of free relatives with-ever, PhD thesis, University of Pennsylvania.
- Ultan, R. (1972), 'Some features of basic comparative constructions. working papers on language universals, no. 9.'
- Van Riemsdijk, H. (2006), 'Free relatives', *The Blackwell companion to syntax* pp. 338–382.
- Von Stechow, A. (1984), 'Comparing semantic theories of comparison', *Journal of semantics* 3(1), 1–77.
- Wheeler, S. C. (1972), 'Attributives and their modifiers', *Noûs* pp. 310–334.
- Wright, W. and Caspari, C. P. (2011), *A grammar of the Arabic language*, Cosimo, Inc.