

Licensing Conditions for Indefinite Pronouns in Modern Hebrew

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Abstract

The dissertation investigates syntactic and semantic aspects of the indefinite pronoun system in Modern Hebrew and consists of an experimental part and a theoretical part. The experimental part presents the grammaticality judgment task conducted to test three theoretical questions: (1) the relation between negation and the licensing of *af* ‘any’ and *kol* ‘any’; (2) the contrast between *eyze* ‘some’ and *eyzešehu* ‘some’ in terms of specificity; and (3) the correlation between syntactic position and free choice readings. Three main theoretical findings are contributed by this work. First, it is shown that from a typological viewpoint, Hebrew, a Semitic language, patterns with Romance and Germanic languages, rather than Japanese-type languages, in having indefinite pronouns specialized for particular operators available in the discourse. Second, the thesis proposes a novel unified syntax-semantics for *kol* which accounts for its interpretational variability. Working with the Kratzer and Shimoyama (2002) framework, where indefinite pronouns generate sets of individual alternatives, the semantics of a *kol*-modified noun phrase is formalized as a variable and containing a restriction. When this restriction ranges over kinds, *kol* receives a generic reading; when the restriction is over a contextually specified set of entities, *kol* has an episodic reading. In these cases, the *kol*-phrase moves to the argument position of a universal quantifier which binds the individual alternatives generated by the *kol*-phrase. If *kol* stays in situ, the individual alternatives are allowed to expand into propositional alternatives, resulting in the free choice reading. Third, I discuss the DP-internal structure of [*eyze*(N)*še-hu* (N)] and [(N) *kol*(N)*še-hu*], treating *še-hu* as a CP. I propose that there is a correlation between the postnominal position and the free choice readings of these pronouns, suggesting that domain restrictions, usually derived in the semantics-pragmatics, may also be encoded in the syntax. If this hypothesis is on the right track, it could provide us with a better understanding of how and when in the process of language acquisition domain restrictions found with indefinite pronouns are acquired.

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List of Abbreviations

Hebrew transcription:

' = glottal stop and pharyngeal fricative (the letters *alef*, and *ayn*)

x = pharyngeal [h] as in **Bach** (the letter *het*)

h = as in **hay** (the letter *hey*)

š = 'sh' as in **shoes** (the letter *shin*)

č = 'ts' as in **cats** (the letter *tsadek*)

Notation

* = unacceptable item in a given context

= ungrammatical sentence, unavailable reading of item

? = slightly dispreferred/questionable reading

?? = dispreferred/unacceptable reading

1	first person
2	second person
3	third person
ACC	Accusative case marker
ANOVA	Analysis of Variation
approx	approximation
arg	argument
C(P)	Complementizer (Phrase)
CL(P)	Classifier (Phrase)
CN	Common Noun
CS	Construct State
D(P)	Determiner (Phrase)
DE	Downward Entailing
def	definite
Distr	distributive
DKP	Derived Kind Predication
DW	Domain Widening
EXCL(- <i>op</i>)	exclusiveness operator
EXH(- <i>op</i>)	exhaustivity operator
f	feminine
FC	Free Choice
FUT	Future Tense
GEN(- <i>op</i>)	generic operator
ign	ignorance
IMP	Imperative
IND	Indicative
INDEF, indef	indefinite
indiff	indifference
INF	Infinitive

IP	Inflection Phrase
IS	Immediate Scope
LD	Long-Distance
LF	Logical Form
m	masculine
N(P)	Noun (Phrase)
NC(I)	Negative Concord (Item)
NEG, Neg(P)	Negation (Phrase)
NMP	Nominal Mapping Parameter
NPI	Negative Polarity Item
NQ	Negative Quantifier
Nr	number
Num(P)	Number (Phrase)
Obj	Object
PAST	Past Tense
PF	Phonological Form
pl	plural
pred	predicate
PREP	Preposition
PRES	Present Tense
Pron, pro	Pronoun
PS	Polarity Sensitive
QR	Quantifier Raising
Sbj	Subject
sg	singular
Spec	specifier
St.Dev.	Standard Deviation
SUBJ	Subjunctive
t	trace
TP	Tense Phrase
<i>v</i> P, V(P)	Verb (Phrase)

Chapter 1

Introduction

1.1 General overview

The dissertation explores the syntax-semantics of indefinite pronouns in Hebrew.¹ From a crosslinguistic perspective, this study is relevant for theories of quantification in natural language, especially with respect to the range of interpretations and domain restrictions imposed on indefinite pronouns by semantic and pragmatic factors. From a language-specific point of view, this study aims to provide a deeper understanding of the indefinite pronoun system in Hebrew and of the particular conditions that play a role in the licensing of indefinite pronouns in this language.

The indefinite pronouns debate dates back to the 1970s and is still very much ongoing today. Indefinite pronouns have been argued to show quantificational force – existential (e.g. Horn 1972, Fauconnier 1979) and/or universal (e.g. Horn 1972, Carlson 1981,

¹I follow Haspelmath (1997) in using the term ‘pronoun’ to comprise indefinite determiners that belong to series of indefinite pronouns, such as English *some* and *any*, and German *irgendein*. “Determiners are not pronouns because they do not replace anything [e.g. a noun], but in traditional grammar determiners are often treated as pronouns or at least together with pronouns” (Haspelmath, 1997:11). From a functional point of view, Haspelmath considers as ‘indefinite pronouns’ items/determiners whose function is to express indefinite reference.

Dayal 1998). Indefinite pronouns have also been argued to be non-quantificational elements (e.g. Heim 1982, Kamp 1981) – discourse variables which are bound for interpretational purposes by operators available in the context. Finally, some researchers have argued that indefinite pronouns are in fact ambiguous between quantificational and non-quantificational or referential (e.g. Fodor and Sag 1982). A cornerstone idea due to Partee (1986) took this a step further and proposed that indefinite pronouns might be of different types – referential, predicative or quantificational, even within one language, an idea which marked the beginning of crosslinguistic investigations within the tradition of formal semantics, and has initiated hypotheses with respect to possible parameters producing interpretational variability in noun phrases (Kratzer, 2005:3).

In this work, based on the discussion of the Hebrew data, I adopt a non-quantificational approach to indefinite determiners, inspired, a.o., by Heim (1982), Partee (1986), and Kratzer and Shimoyama (2002). This approach aims at preserving a common semantic core for indefinite determiners crosslinguistically – the property of triggering sets of individual alternatives indicating pragmatic information, similarly to *wh*-words (Hamblin 1973, Karttunen 1977, Groenendijk and Stokhof 1984, Aloni 2007), while at the same time accounting for language-specific distributional and interpretational differences.

This dissertation examines in detail the indefinite pronoun system in Modern Hebrew, a Semitic language, and addresses language-specific issues in comparison with similar phenomena extensively studied in languages belonging to other language families – such as Romance and Germanic. The intention is to find out whether these phenomena should be considered as language-specific strategies, or as general properties of natural languages. The main claim of the dissertation is that indefinite pronouns in Hebrew are specialized for distinct operators (in the sense of Kratzer and Shimoyama 2002), which renders them closer typologically to Romance and Germanic languages. For example, I show that Hebrew and Spanish share similar agreement strategies in the licensing of free choice indefinites. The advantage of this approach is that it provides a way of unifying core semantic properties observed with indefinite pronouns crosslinguistically. One such

property is that indefinite pronouns may be interpreted as variables. In addition, this approach is suggestive of a parameter differentiating two types of languages with respect to the source of interpretational variability found with indefinite pronouns. In type 1 languages, such as Japanese, indefinite pronouns are not restricted in their association with discourse operators, which means that their meaning depends on that of the first operator they encounter and are bound by. In type 2 languages, such as German, Spanish and Hebrew, indefinite pronouns associate with particular operators, and are typically not licensed if a different operator intervenes between them and their specific binder.²

In this study, I take as a starting point Haspelmath's (1997) typological study of indefinite pronouns across languages, summarized for Hebrew in Table 1.1.

I examine seemingly parallel pairs of indefinite pronouns in Hebrew. *Af* 'any' and *kol* 'any', for example, have been mentioned in the literature as being negative polarity items on a par with English *any* (Landau 2004, Levy 2008). However, working with indefinite pronouns is always surprising in that seemingly equivalent lexical items turn out on closer inspection to be quite different. If examined in detail, we find that each of these items has its own licensing conditions and is often specialized for particular discourse functions.

²I use the term "intervener" to refer generally to syntactic or semantic restrictions within a binding domain.

Table 1.1: Indefinite pronouns series in Hebrew

	Interrogative	Specific/ Nonspecific <i>šehu</i>	Negative polarity <i>iš</i>	Free choice <i>kol</i>	Negative <i>af/šum</i>
Person	<i>mi</i> who	<i>mišehu</i> someone	<i>iš</i> noone		<i>af exad</i> noone
Thing	<i>ma</i> what	<i>mašehu</i> something	<i>davar</i> nothing	<i>kol davar</i> anything	<i>šum davar</i> nothing
Place	<i>eyfo</i> where	<i>eyfošehu</i> somewhere		<i>kol makom</i> any/everywhere	<i>be-šum makom</i> <i>be-af makom</i> nowhere
Time	<i>matay</i> when	<i>matayšehu</i> sometime		<i>kol zman</i> any time	<i>af paam</i> never
Manner	<i>ex</i> how	<i>exšehu</i> somehow			
Determiner	<i>eyze</i> which	<i>eyzešehu</i> some a certain		<i>kol</i> any, each every, all	<i>af, šum</i> any, no

1.2 Syntactic and semantic assumptions

This study makes the following theoretical assumptions. Syntactically, I follow the Minimalist Program as proposed by Chomsky (1995, 2001, 2004). I adopt the distinction between interpretable and uninterpretable *features* in that uninterpretable features are unsaturated and need to be checked/valued by interpretable features. For example, an indefinite determiner specified for an uninterpretable feature [uNeg] will need to have this feature checked by an interpretable [iNeg] feature elsewhere in its immediate context. Checking ‘deletes’ uninterpretable features, but not interpretable features, which remain relevant for the interfaces – the interpretative component (LF) and the phonological component (PF). The two operations via which checking may happen are *Move* and *Agree*. I further assume the notion of *phases* according to which *vP* and *CP* are

phases, and a *phase extension* mechanism along the lines of Den Dikken (2006, 2007). In terms of feature checking, an uninterpretable feature in an embedded finite CP may become “visible” for checking by an interpretable feature in a higher CP only if it is able to move cyclically (percolate) to the edge of the next phase.

Another type of movement that is employed in this work is a Quantifier Raising–type movement as proposed by May (1977). This movement is motivated by type-mismatch in semantic composition and its corresponding semantic rule is predicate abstraction, defined in (1b).

Semantically, the present work is set within the Formal Semantics tradition. I adopt the interpretation system outlined in Kratzer and Shimoyama (2002) and Kratzer (2005). The relevant rules of semantic composition are presented in (1). A Hamblin–style semantics assumes that similarly to interrogatives (for which it was originally designed), indefinite pronouns also introduce sets of individual alternatives. This constitutes a shift from “traditional” formal semantics where lexical items denote singleton sets (i.e. properties).

A set of individual alternatives, generated by the indefinite–modified noun phrase, combines via Hamblin Functional Application with the verb phrase, thus expanding into a set of propositional alternatives. These propositional alternatives are then selected/bound by operators available in the context. Some indefinite pronouns are selected by the first operator they encounter, as is the case in Japanese, while other indefinite pronouns can only combine with particular operators, as is the case of German *irgendein*, which may only be bound by an existential operator (Kratzer and Shimoyama 2002, Kratzer 2005).

(1) a. Hamblin Functional Application:

If α is a branching node with daughters β and γ , and $[[\beta]]^{w,g} \subseteq D_\sigma$ and $[[\gamma]]^{w,g} \subseteq D_{\langle\sigma\tau\rangle}$, then $[[\alpha]]^{w,g} = \{a \in D_\tau: \exists b \exists c [b \in [[\beta]]^{w,g} \ \& \ c \in [[\gamma]]^{w,g} \ \& \ a = c(b)]\}$.

- b. Predicate abstraction:
 If α is a branching node whose daughters are an index i and β , where $[[\beta]]^{w,g} \subseteq D_\sigma$, then $[[\alpha]]^{w,g} = \{f: f \in D_{\langle e\sigma \rangle} \ \& \ \forall a [f(a) \in [[\beta]]^{w,g[a/i]}]\}$.
- c. Pronouns and traces: For any index i , $[[i]]^{w,g} = \{g(i)\}$

I will consider indefinite/bare noun phrases (in Hebrew) to denote sets of individual alternatives on a par with wh-words. A wh-question denotes the set of its possible answers, as illustrated in (2).

- (2) Wh-interrogatives:
 - a. *Who sneezed?*
 - b. $[[who]] = \{\text{John, Jim, John+Jim, ...}\}$
 - c. $[[who \text{ sneezed}]] = \{\text{John sneezed, Jim sneezed, John+Jim sneezed, ...}\}$

The denotation of the question in (2a) is the set of propositional alternatives in (2c). Similarly, the denotations of sentences containing a bare singular noun phrase (in Hebrew) or an indefinite noun phrase (crosslinguistically) are taken to be sets of propositional alternatives, as exemplified in (3c) and (4c). Note that (3b) and (4b) differ with respect to the number of individuals in their domain; the extension of the bare noun is a singleton set, while the extension of the *kol*-noun is a set of individuals that must contain at least two members.

- (3) Bare singular noun:
 - a. *student xipes otax.*
 student was-looking ACC-you
 ‘A student was looking for you.’
 - b. $[[student]] = \{\text{John, Jim, ...}\}$

- c. $[[\text{(3a)}]] = \{\text{John was looking for you, Jim was looking for you, ...}\}$
- (4) Indefinite pronoun + noun:
- a. *kol yeled kibel ugia.*
 KOL child received cookie
 ‘Each child received a cookie’
- b. $[[\textit{kol-child}]] = \{\text{John, Jim, John+Jim, ...}\}$
- c. $[[\text{(4a)}]] = \{\text{John received a cookie, Jim received a cookie, John+Jim received cookies, ...}\}$

This approach to indefinite pronouns as introducing sets of alternatives has gained many supporters in recent research, for example, Kratzer and Shimoyama (2002) and Kratzer (2005) for German *irgendein* ‘any’ and Japanese indefinite pronouns, Aloni (2007) for Italian and English, Alonso-Ovalle and Menéndez-Benito (2003, 2008) for Spanish *algún* ‘some’, Menéndez-Benito (2005b) for Spanish *cualquier* ‘any’, Kagan and Spector (2008) for Hebrew *eyze* ‘some’, among many others. This system allows us to explain crosslinguistic variation in a principled way: if an indefinite expression is sensitive to a particular operator, this would explain why it is not licensed if a different operator intervenes; similarly, it also explain interpretational variability in languages (e.g. Japanese) where indefinite expressions do not show sensitivity to particular operators, and why the respective indeterminate phrases appear to not conform to syntactic (locality) constraints and intervention effects found with Indo-European languages.

The dissertation is organized as follows.

1.3 Dissertation outline

This dissertation investigates defining properties of the indefinite pronoun system in Hebrew in terms of the distribution of labor between syntax, semantics and pragmatics. The aim is to identify the licensing conditions of indefinite pronouns with the future purpose of integrating the findings within the ongoing crosslinguistic research on indefinite pronouns. One of the main claims here is that indefinite pronouns in Hebrew are “specialized” for distinct operators (in the sense of Kratzer and Shimoyama 2002) and that they are subject to restrictions at different interfaces – syntax-semantics, semantics-pragmatics, or syntax-pragmatics.

The dissertation begins by presenting a short experimental study conducted in order to see whether empirical data support the theoretical hypotheses put forth in this work. Chapter 2 outlines the design and conditions employed in the grammaticality judgment task. The main conditions tested the acceptability of the indefinite determiners compared throughout the dissertation, in different contexts. For example, the acceptability of the indefinite determiners *af* and *kol* ‘any, no’ was tested in the *immediate scope* and *long-distance* relative to sentential negation, when embedded under different attitude verbs. The two contrasted verbs – *want* and *know* require different syntactic structures, which affect the agreement relations between items in the matrix clause and items in the embedded clause. The purpose of the task was to identify the sensitivity of *af* and *kol* to negation, in other words, to determine whether a negation operator is responsible for their licensing. This is schematized in (5) and (6).

(5) Immediate scope relative to negation:

- a. [... *want* ... [that ... Neg + finite V ... *af/kol* ...]]
- b. [... *know* ... [that ... Neg + finite V ... *af/kol* ...]]

- (6) Long-distance relative to negation:
- a. [... Neg + *want* ... [that ... finite V ... *af/kol* ...]]
 - b. [... Neg + *know* ... [that ... finite V ... **af/kol* ...]]

Since the experiment tested pairs of indefinite determiners which are then discussed in separate chapters, the results and the discussion of the results are presented in detail in the respective chapters. The results for *af* and *kol* are discussed in Chapter 3 and the results for *eyze-še-hu* and *kol-še-hu* in Chapter 5. The results for *eyze* and *eyze-še-hu* will be included in the Appendix, together with the experimental items.

The theoretical enterprise begins in Chapter 3, where I explore the properties of two indefinite pronouns – *af* and *kol*, corresponding roughly to English *any*. In terms of their function, these two items have been considered to belong to different indefinite series, namely Haspelmath’s (1997) *negative* series versus *free choice* series, respectively. It is observed that even though *af* and *kol* share certain interpretations, such as (7a), they are subject to different licensing conditions (7b). Specifically, *af* is shown to associate with a negation operator – it is specified for a [uNeg] feature. In addition, a syntactic solution is proposed for the unexpected long-distance licensing of *af*, namely *domain extension* in subjunctive complements, which allows [Neg] feature checking between *af* and its licensor in the main clause. The results of the grammaticality judgment task, conducted to test distributional and interpretational properties of *af* and *kol*, support the hypothesis that *af* and *kol* have different licensing mechanisms; particularly important is the finding that *kol* is not syntactically sensitive to negation – compare (7a) with (7b).

- (7) a. **lo** mačati *af/kol* šgiya. [scope of negation]
 NEG found AF/KOL mistake
 ‘I didn’t find any mistake.’

- b. *kol/*af* xatul hofiya. [affirmative context]
 KOL/AF cat appeared
 ‘Each and every cat appeared.’

The observations regarding the distribution and interpretation of *kol* are reexamined in Chapter 4, where it is proposed that *kol* is a universal indefinite pronoun, meaning that it associates with a universal operator and is specified for a $[\forall]$ feature. It is observed that *kol* may have three readings: generic (8a), distributive (8b), and free choice (8c).

- (8) a. *kol* dov ohev dvaš.
 KOL bear likes honey
 ‘Any/Each/Every bear likes honey.’
 i.e. *It is a characteristic of an entity belonging to the bear-kind that they like honey.*
- b. Mira hixzira *kol* sefer la-makom šelo.
 Mira returned KOL book to-place his
 ‘Mira returned each book to its place.’
 i.e. *For each book-entity in a contextually given set of books, it is the case that Mira returned it to its place.*
- c. ani muxan lagur be-*kol* dira.
 I willing live.INF in-KOL apartment
 ‘I’m willing to live in any apartment.’
 i.e. *Any apartment is a possible option.*

I discuss *kol* from two perspectives: (i) the Nominal Mapping Parameter of Chierchia (1998), and (ii) the licensing of universal indefinite pronouns such as English *any* and Spanish *cualquier*, (9), in contexts where indefinite (bare) noun phrases would receive

generic readings (Kadmon and Landman 1993, Dayal 1998, a.o., for English; Menéndez-Benito 2010, for Spanish).

- (9) a. *Cualquier* estudiante debe trabajar duro.
 ‘Any student must work hard.’
 (Menéndez-Benito 2010:51, adapted from Dayal, 1998:435)
- b. Juan tiene que coger **cualquiera* de estas cartas.
 ‘Juan must take any of these cards.’
 (Menéndez-Benito 2010:51)

I link the interpretation of *kol* to genericity and to the fact that bare singulars in Hebrew refer to kinds (in the sense of Chierchia 1998), as well as with Menéndez-Benito’s (2010) idea for Spanish *cualquier*, also a universal indefinite pronoun, where it is shown that *cualquier* is licensed in the exact same contexts where a bare noun would have a generic interpretation. I compare the interpretation of bare singular noun phrases (in Hebrew) to that of *kol*-modified noun phrases and show that the licensing of *kol* cannot be assumed to be related to the licensing of bare noun phrases in this language. I propose that a unified semantics for *kol* is possible under what I will call a “distributivity approach”. The various readings of *kol* may then be understood as distribution over instances of a kind (the generic reading), distribution over individuals belonging to a contextually salient and restricted set (the episodic reading), and distribution over propositional alternatives (the free choice interpretation).

Another aspect of the indefinite pronoun system in Hebrew is discussed in Chapter 5, where I examine a second pair of indefinite pronouns – prenominal *eyze-še-hu* ‘some (or other), a certain’ (10a), and postnominal *kol-še-hu* ‘any, some (or other)’ (10b), as well as their respective split versions [*eyze Noun še-hu*] ‘any’ and [*kol Noun še-hu*] ‘any’ (10c).

- (10) a. ani roča eyze-še-hu sefer.
 I want which-INDEF book
 ‘I want some/a certain book.’
- b. ani roča sefer kol-še-hu
 I want book KOL-INDEF
 ‘I want some/any book.’
- c. ani roča kol/eyze sefer še-hu
 I want KOL/which book INDEF
 ‘I want any book (whatsoever).’

The chapter explores the relationship between syntax and semantics in the licensing of these complex indefinite pronouns and their split nominal versions. For completeness, the above are compared with the *eyze* ‘some (or other)’ and *kol* ‘any, each, every, all’ indefinite modifiers. Pragmatically and semantically, these determiners share properties which have been associated with two separate series of indefinite pronouns, the *še-hu*-series expressing indefiniteness and the *kol*-series expressing free choice (according to Haspelmath’s (1997) typology). What is not discussed in Haspelmath’s typology is the complex *kol-še-hu*, which leaves open the question as to what are the properties of this complex indefinite pronoun.

Chapter 5 has its roots in the observation that an obligatory free choice reading is only available with a postnominal indefinite determiner, either with *kol-še-hu* ‘any, some (or other)’ or with the split version *kol/eyze N še-hu* ‘any’. I suggest that the syntax-semantics of the *še-hu* particle is responsible for the free choice effects. From a syntactic point of view, I analyze *še-hu* as a complementizer phrase, whose structure includes the complementizer *še* ‘that’ and a finite IP complement *hu* ‘be.3sg.m’ (for example). This amounts to a ‘that be’ meaning expressing possibility, a modal effect, indicative of free choice. Furthermore, the pattern observed for free choice interpretations appears to

parallel syntactic agreement patterns. In Hebrew, postnominal modifiers obligatorily and fully ϕ -agree with the noun they modify; in contrast, prenominal agreement is optional and can be partial. A similar pattern is observed in terms of domain restrictions: postnominally, the indefinite pronoun obligatorily receives a maximal free choice interpretation, while prenominally, a free choice reading is optional and may be partially restricted.

Chapter 6 concludes and summarizes the findings with respect to the indefinite pronouns examined throughout the dissertation.

Chapter 7 – the appendix, has two parts. In the first part, section 7.1, I discuss issues for future research with particular attention to the existential indefinite pronouns *eyze* ‘some (or other)’ and *eyzešehu* ‘some, a certain’. I present some of the data gathered so far, in comparison with data and proposals for German *irgendein* and Spanish *algún* existential indefinites, and I mention some ideas that might eventually become part of an account for the interpretational variability observed with these indefinites. In addition, I report the experimental results obtained in the grammaticality judgment task, where *eyze* and *eyzešehu* were contrasted with respect to their ability to express specific (referential) interpretations. The second part, section 7.2, includes the questionnaires (the experimental items) in Hebrew, as they were presented to the participants in the grammaticality judgment task.

Chapter 2

Experimental task

2.1 Research question and hypothesis

Introduction.

The *grammaticality (sentence) judgment* task was concerned with the conditions which determine the use of one indefinite expression versus another, and whether the restrictions are semantic, syntactic or pragmatic in nature, with the purpose of corroborating the use of the indefinite determiners *af* ‘any, no’, *kol* ‘any, no’, *eyze* ‘a, some (or other)’, *eyzešehu* ‘a, some, a certain’, and *kolšehu* ‘any’, under various conditions (to be elaborated below).

Background.

Recent studies (Kratzer 2005, Alonso-Ovalle and Menéndez-Benito 2008, Kagan and Spector 2008), dealing with the properties of indefinite expressions crosslinguistically, have pointed out a common semantic thread unifying the meaning of these indefinites, while at the same time inquiring into the variation that we find with respect to the interpretation of individual indefinite expressions. For example, the indefinite deter-

miners *eyze* ‘a, some, some or other’ and *eyzešehu* ‘some, some or other, a certain’ can sometimes be used interchangeably, as in (1a), while in other contexts the interpretations available for these determiners differ – *eyze* can express approximation, as in (1b), while *eyzešehu* can express specificity, as in (1c).

- (1) a. Tav’i li *eyze/eyzešehu* perax.
 bring.FUT/IMP to-me which/which-INDEF flower
 ‘Bring me some flower.’
- b. Dani hizmin *eyze* šmona xaverim.
 Dani invited which eight friends
 ‘Dani invited some (or other) eight friends.’
- c. Ani mexapeset *eyzešehu* zug garbaim (ha-kxulim im ha-praxim).
 I search which-INDEF pair socks (the-blue with the-flowers)
 ‘I’m looking for a certain pair of socks (the blue ones with the flowers).’

The theoretical questions raised by these data pertain to the restrictions observed with these indefinite determiners and to the possible reasons behind these restrictions – can we derive the available interpretations within a particular component of grammar, be this semantic, syntactic, or pragmatic, or should we turn our attention towards an interface solution?

Research hypothesis.

This study examined the possible range of interpretations that certain indefinite expressions can have. When looking at this type of data, where intuitions regarding meaning differences or similarities can at times be very subtle, it is important to back up theoretical observations and generalizations with empirical evidence. My hypothesis is that these determiners are not free variants of each other, but rather, they fulfill different

semantic, syntactic and pragmatic functions.

Three independent contrasts were tested, each involving different indefinite determiners, as follows.

The first contrast tested the long-distance licensing with respect to main clause negation of the indefinite pronouns *af* and *kol*, when these are embedded under different attitude verbs such as *want* and *know*. The configuration is illustrated in (2).

- (2) a. [... Neg + *want* ... [that ... finite V ... *af/kol* ...]]
 b. [... Neg + *know* ... [that ... finite V ... **af/kol* ...]] (* = prediction¹)

These two attitude verbs were chosen for their specific syntactic requirements and semantic properties. Semantically, *want* is a volitional verb and does not entail the truth of its complement; syntactically, it requires a subjunctive complement, an environment which allows feature checking between items in the main clause and items in the embedded clause. In contrast, the verb *know* is a factive verb that entails the truth of its complement; syntactically, it requires an indicative complement, an environment in which feature checking is not possible between items in the main clause and items in the embedded clause. These notions are explained in detail in Chapter 3. Given these properties, we predict that main clause negation can license *af* or *kol* only in the case of *want*, (3a).

This type of environment was controlled for by using items where *af* and *kol* appear in the immediate scope of negation in the embedded clause, while the main clause contained either *want* or *know* as main verb, as in (3).

- (3) a. [... *want* ... [that ... Neg + finite V ... *af/kol* ...]]
 b. [... *know* ... [that ... Neg + finite V ... *af/kol* ...]]

¹The prediction corresponds to the theory I discuss in Chapter 3.

An additional related control measure tested the sensitivity of *af* and *kol* to negation, specifically, whether *af* and *kol* are licensed in the absence of sentential negation. Compare (4a), where in the absence of negation *af* is unacceptable, with (4b), where both determiners are licensed in the immediate scope of negation.

- (4) a. Raiti **af/kol* anan.
 saw.1sg AF/KOL cloud
 #‘I saw any cloud.’
- b. **Lo** raiti *af/kol* anan.
 NEG saw.1sg AF/KOL cloud
 ‘I didn’t see any cloud.’

The second contrast tested whether the determiner *eyzešehu* is preferred for “specific” readings, in comparison with the determiner *eyze*.

- (5) Ani mexapeset *eyzešehu* zug garbaim (ha-kxulim im ha-praxim). [??*eyze*]
 ‘I’m looking for a certain pair of socks (the blue ones with the flowers).’

It was hypothesized that *eyzešehu* would be the preferred choice in contexts that induce a specific reading. This was attempted via the use of cue words such as *only* and *favorite*, as well as through inverse scope readings with respect to negation.

The third contrast involved the determiners *eyzešehu* and *kolšehu* and their split counterparts – [*eyze N šehu*] and [*kol N šehu*], and tested whether there is a correlation between: (i) the free choice effects observed with these determiners, (ii) split determiner phrases, and (iii) the postnominal syntactic position. An example is given in (6).

- (6) Le-Joe nim'as lexapes sefer mesuyam. Axshav hu muxan likro ...
Joe is tired of looking for a particular book. He's now willing to read ...
- a. *eyzešehu sefer
 which-INDEF book
- b. ?eyze sefer šehu
 which book INDEF
- c. sefer kolšehu
 book KOL-INDEF
- d. kol sefer šehu
 KOL book INDEF
any book

The prediction was that postnominal determiners, and in particular the split version, would be significantly preferred when expressing free choice.

2.2 Method

2.2.1 Participants

The study was conducted with thirty-eight native speakers of Hebrew (thirty-three participants residing in Israel, and five participants Israelis living in Canada for less than five years). Participation was on a voluntary basis.

2.2.2 Materials

Each participant was presented with a questionnaire² containing thirty-two items (pairs of sentences). Each item consisted of two sentences – a background sentence and a target sentence. A sample is provided in Table 2.1.

Table 2.1: Questionnaire sample

Background sentence	Target sentence	<i>I speak like this...</i>
		<i>always sometimes rarely never</i>
Nirit wants the prizes for herself.	She does not want that Rachel will win <u>af</u> ‘any,no’ prize.	X

The participants were instructed to rate the acceptability of target sentences according to whether or not they would use these sentences in day-to-day speech, and taking into consideration the background sentences provided. A 1 to 4 rating scale was given, as follows: *always used* sentence = 4; *sometimes used* = 3; *rarely used* = 2; *never used* = 1. The participants were not time-constrained.

2.2.3 Design

The experiment used a 2x2 design for the main conditions (to be elaborated below), with two lists (questionnaire A and questionnaire B) of thirty-two items each. The items on the two lists were balanced as illustrated in Table 2.2. This sample of the experimental design shows the Long-Distance Licensing (LDL) condition, i.e. the case where the negation licenser was in the matrix clause, while the indefinite determiner licensee was in an embedded clause. The two subconditions (factors) here are: *matrix verb* – 1.*know*, 2.*want*, and *determiner* – 1.*af*; 2.*kol*.

²Many thanks to Ilana Adler (in Israel) for her valuable input on the format of the questionnaire.

Table 2.2: Sample of experimental design (for LDL)

Questionnaire version A (18 participants)	Questionnaire version B (20 participants)
<i>condition 1.1 (know+af) – sentence #1</i>	<i>condition 1.1 (know+af) – sentence #3</i>
<i>condition 1.1 (know+af) – sentence #2</i>	<i>condition 1.1 (know+af) – sentence #4</i>
condition 1.2 (know+kol) – sentence #3	condition 1.2 (know+kol) – sentence #1
condition 1.2 (know+kol) – sentence #4	condition 1.2 (know+kol) – sentence #2
<i>condition 2.1 (want+af) – sentence #1</i>	<i>condition 2.1 (want+af) – sentence #3</i>
<i>condition 2.1 (want+af) – sentence #2</i>	<i>condition 2.1 (want+af) – sentence #4</i>
condition 2.2 (want+kol) – sentence #3	condition 2.2 (want+kol) – sentence #1
condition 2.2 (want+kol) – sentence #4	condition 2.2 (want+kol) – sentence #2

Each item consisted of a background-target paired sentence. The background sentence was always grammatical and was meant to provide context for the target sentence. Some background sentences also provided contextual cues, in that they included, for example, the adverb *only*, in order to check whether the participants accept the referential (specific) reading of the relevant determiners, in this case, *eyze* and *eyzešehu*. Target sentences, which contained the determiners being tested, were kept constant. Since it was expected that *af* and *kol* would be equally acceptable in the immediate scope of sentential negation, the items in this condition were considered as “fillers” and fewer items of this type were tested (at a 1:2 ratio relative to the conditions where differences were expected). The appendix to the dissertation (Chapter 7, section 7.2) includes the list of items, in Hebrew, in the order in which they appeared in questionnaire A and in questionnaire B.

2.2.4 Stimuli

Three main conditions – Long-Distance licensing, Specificity, and Free Choice, and two secondary conditions – Immediate Scope licensing and NPI/Negation licensing, were tested.

The first main condition tested whether the indefinite determiners *af* and *kol* are licensed long-distance (LD) with respect to matrix clause negation and depending on the type of matrix verb – *want* versus *know*. In Hebrew, the volitional verb *want* selects for a subjunctive (finite) clause as complement, while the factive verb *know* selects an indicative clause (this is discussed in Chapter 3). Syntactically, these two constructions differ in that a subjunctive clause can be said to constitute a transparent domain, which would allow long-distance feature agreement between the embedded determiner and its licenser in the main clause; in contrast, an indicative clause selected by a factive verb, such as *know*, constitutes an opaque domain with respect to feature agreement, and therefore, long-distance agree relations are not expected to be possible. Table 2.3 provides a sample set for this condition.

Table 2.3: Sample set of the Long-Distance Licensing condition

Condition	Background sentence	Target sentence (literal gloss)
1.1 <i>know+af</i> (A)	The judges decided to cancel the prizes this year.	Alon does not know that Lilax will win * <u>af</u> ‘any,no’ prize.
1.2 <i>know+kol</i> (B)	The judges decided to cancel the prizes this year.	Moshe does not know that Mina will win <u>kol</u> ‘any,no’ prize.
2.1 <i>want+af</i> (A)	Nirit wants the prizes for herself.	She does not want that Rachel will win <u>af</u> ‘any,no’ prize.
2.2 <i>want+kol</i> (B)	Tova wants the prizes for herself.	She does not want that Oranit will win <u>kol</u> ‘any,no’ prize.

The second main condition tested for specificity readings of the indefinite determiners *eyze* ‘some (or other)’ and *eyzešehu* ‘some, a certain’. It was hypothesized that there is a preference for *eyzešehu* ‘some, a certain’ when referring to specific (discourse familiar) entities. The items in this condition checked for several possibilities, such as whether these indefinites can receive a wide-scope reading in negative contexts (inverse scope), as in the example in (7).

- (7) Guy kana disc šel Madonna aval lo šel Šer. hu lo kana eyze disc.
 Guy bought CD of Madonna but not of Cher. He NEG bought which CD
 ‘Guy bought a Madonna but not a Cher CD. He didn’t buy some CD.’
 → Inverse scope reading: *There is a particular CD that Guy did not buy.*

Another type of item in this condition checked whether *eyze* and *eyzešehu* can refer back to unique referents mentioned previously in the discourse if discourse cues were present, such as the adverb *only* and the adjective *favorite*. A sample set is given in Table 2.4.

Table 2.4: Sample set of the Specificity condition

Condition	Background sentence	Target sentence
1.1 <i>specific eyze</i>	<u>Only</u> Eyal wrote a bad review of Ron’s new designs.	Ron is sad, so I’m guessing that he heard <u>eyzo</u> review...
1.2 <i>specific eyzešehu</i>	<u>Only</u> Yaron wrote a bad review of Eyal’s new designs.	Eyal is sad, so I’m guessing that he heard <u>eyzošehi</u> review...
2.1 <i>nonspecific eyze</i>	Sharon’s new designs received lots of bad reviews.	Sharon is sad so I’m guessing that he heard <u>eyzo</u> review...
2.2 <i>nonspecific eyzešehu</i>	Gil’s new designs received lots of bad reviews.	Gil is sad so I’m guessing that he heard <u>eyzošehi</u> review...

The third main condition tested the hypothesis that there is a correlation between *pre-* versus *post-*nominal position and the availability of free choice readings, in sentences with the indefinite determiners *eyzešehu* ‘some, a certain’ and *kolšehu* ‘any, some’. What sets apart these two determiners is the fact that they participate in split determiner phrases, illustrated below:

- *eyzešehu N* → *eyze N šehu*
- *N kolšehu* → *kol N šehu*

It was hypothesized that the free choice readings are more readily available for the postnominal determiner *kolšehu* and the split versions *eyze N šehu* and *kol N šehu* (theoretical details are discussed in Chapter 5). The prediction was that *kol N šehu*

would be the most preferred determiner in free choice contexts, while *eyzešehu* would be the least preferred (if allowed at all). A sample set of this condition is given in Table 2.5.

Table 2.5: Sample set of the Free Choice condition

Condition	Background sentence	Target sentence
1.1 Split determiner <i>eyze N šehu</i>	Guy wanted to wear the blue sweater but now he’s getting really cold.	He’s willing to wear <u><i>eyze</i></u> sweater <u><i>šehu</i></u> ‘any’.
1.2 Split determiner <i>kol N šehu</i>	Shimshon wanted to wear the blue sweater but now he’s getting really cold.	He’s willing to wear <u><i>kol</i></u> sweater <u><i>šehu</i></u> ‘any’.
2.1 Non-split determiner <i>eyzešehu N</i>	Zvi wanted to wear the blue sweater but now he’s getting really cold.	He’s willing to wear <u>?<i>eyzešehu</i></u> ‘some’ sweater.
2.2 Non-split determiner <i>N kolšehu</i>	Yossi wanted to wear the blue sweater but now he’s getting really cold.	He’s willing to wear sweater <u><i>kolšehu</i></u> ‘any’.

The main conditions – Long-Distance Licensing, Specificity, and Free Choice – are not interrelated, and therefore acted as fillers for each other. In addition, two secondary conditions – Immediate Scope Licensing and NPI/Negation Licensing – were added to complement (control for) the Long-Distance Licensing condition. In the Immediate Scope condition, the determiners appeared in simple sentences in the immediate scope of sentential negation; in the NPI condition, the determiners appeared in simple sentences in the absence of sentential negation.

The Immediate Scope condition consisted of grammatical target sentences containing the determiners *af* and *kol* in the immediate scope of sentential negation, with the matrix verb *know* and with the matrix verb *want* (see sample in Table 2.6). This was meant as a control for the Long-Distance Licensing condition. *Af* and *kol* were expected to be felicitous in the immediate scope of negation irrespective of choice of matrix verb.

Table 2.6: Sample set of the Immediate Scope condition

Condition	Background sentence	Target sentence
1.1 <i>want, af</i>	Keren has put the toys in a secret place.	She wants that Noa will not find <u>af</u> ‘any’ toy.
1.2 <i>want, kol</i>	Rona wants the prizes for herself.	She wants that Ran will not win <u>kol</u> ‘any’ prize.
2.1 <i>know, af</i>	Tedi has been told that there aren’t bears here at all.	He knows that he will not meet <u>af</u> ‘any’ bear during his walk today.
2.2 <i>know, kol</i>	Alex knows that there are no other bears.	He knows that he will not meet <u>kol</u> ‘any’ bear during his walk today.

The NPI/Negation condition consisted of ungrammatical target sentences containing the determiners *af* and *kol* in the absence of sentential negation, shown in Table 2.7. It was expected that the sentence with *af* would be considered ungrammatical. In retrospect, the reason for the unacceptability of these *kol* sentences seems to be due to pragmatic factors (the provided context), rather than syntactic factors (sensitivity to negation).

Table 2.7: Sample set of the NPI/Negation condition

Condition	Background sentence	Target sentence
1.1 <i>af [-Neg] (subj.)</i>	People entered the cave quietly.	* <u>Af</u> ‘no’ bat got scared.
2.1 <i>kol [-Neg] (subj.)</i>	The garden was empty.	<u>Kol</u> ‘no’ bird was there.
1.2 <i>af [-Neg] (obj.)</i>	The night was very cloudy.	I saw * <u>af</u> ‘no’ star.
2.2 <i>kol [-Neg] (obj.)</i>	The plate is full of pears exactly as I left it for you in the morning.	You ate * <u>kol</u> ‘no’ pear.

Finally, the fillers consisted of grammatical background and target sentences unrelated to the topic of indefinite determiners, meaning that they did not contain any of the determiners tested here. There were four filler items per questionnaire. A sample is provided in Table 2.8.

Table 2.8: Sample set of fillers

Condition	Background sentence	Target sentence
<i>Grammatical</i>	We're going strawberry picking tomorrow.	Hopefully it won't rain.

The results of the grammaticality judgment task are discussed for each condition in their respective chapters, with the exception of the *eyze* ‘some (or other)’ versus *eyzešehu* ‘some, a certain’ contrast, which is included in the appendix (Chapter 7, section 7.1.8). Chapter 3 addresses issues pertaining to the licensing of *af* and *kol* in the immediate scope and long-distance relative to negation. Chapter 5 explores the relation between DP-internal structure and free choice readings of *eyze(N)šehu* and *kol(N)šehu*.

Chapter 3

Negative indefinites

This and the following chapters explore the licensing conditions for two seemingly equivalent indefinite pronouns in Hebrew, *af* and *kol*, which have been generally considered to be negative polarity items on a par with English *any* (Landau 2004, Borer 2005, Levy 2008). Assuming that one of the defining properties of negative polarity items is their licensibility in downward entailing or so-called *affective* environments (Klima 1964, Ladusaw 1979), I show that neither of these two items behave as expected in this type of context. Furthermore, although it is clear that they share a semantic core, similarly to other such items crosslinguistically, it is also clear that *af* and *kol* are licensed under different conditions; in other words, they are not sensitive to the same restrictions. Due to its interpretational complexity, the analysis of *kol* is addressed in Chapter 4, where it is proposed that *kol* is a universal indefinite.

I suggest that *af* is a negative concord indefinite. Adopting the framework proposed in Kratzer and Shimoyama (2002), I consider indefinite pronouns in Hebrew as bound variables, and show that they are sensitive to particular licensing operators. *Af* is always sensitive to negation, on a par with negative indefinites in other languages, for example the Polish *ni-* series (Haspelmath 1997, Blaszcak 1999, Penka 2007); its syntactic specification is a [Neg] feature which agrees with and is bound by a negation operator in its immediate context (Ladusaw 1992, Zeijlstra 2004 for [Neg], Linebarger's

1987 Immediate Scope Constraint). In this chapter, I also examine contexts where *af* is not in the immediate scope of its licenser, but it is licensed nonetheless, if it is allowed to do so syntactically.

When we explore the properties of the indefinite pronoun system in Hebrew, these two determiners provide a first piece of evidence for the various interface strategies needed to account for the distribution and interpretation of indefinite pronouns in this language and crosslinguistically.

3.1 Introduction

This chapter investigates the licensing conditions for two indefinite pronouns in Hebrew – *af* ‘any, no’ and *kol* ‘any, each, every, all’. These indefinites have been assumed to be polarity sensitive items on a par with *any* (Landau 2004, Borer 2005, Levy 2008). I show that these indefinites do not always parallel *any* in terms of distribution, available interpretations, quantificational force, and related properties. I begin by showing that *af* is a negative concord item, licensed syntactically. This does not mean that it does not show semantic properties that have been linked to polarity *any* such as domain widening (Kadmon and Landman 1993, a.o), and I show that it does. With respect to *kol*, I argue that it is not a polarity item, even though it appears to be licensed in contexts that allow polarity *any*. I discuss *kol* in detail in Chapter 4.

The main theoretical questions to be addressed in relation to the *af* and *kol* indefinite pronouns are:

1. What are the licensing conditions for *af*?
 - (a) Is *af* an indefinite *specialized*¹ for a negation operator?
 - (b) What is the mechanism that allows *af* to be licensed, unexpectedly, long-distance relative to negation?

¹In the sense of Kratzer and Shimoyama (2002).

2. What are the licensing conditions for *kol*?
 - (a) What are the possible interpretations of *kol*?
 - (b) Given the observation that *kol* appears to be ambiguous between a universal and an existential, can we have a unified account for the interpretations of *kol*?
 - (c) Is *kol* sensitive to particular operators?

The phenomenon of negative polarity has been vastly researched, primarily from the perspective of the *any*-series in English. Recently, there has been a wave of language-specific research into items that fall under the roof of negative indefinites, with the purpose of deriving a theory that will account for their properties crosslinguistically (e.g. Giannakidou 2000, 2006; Penka 2007). In the present chapter, I contrast the syntactic, semantic and pragmatic properties of Hebrew *af* and *kol*. I argue that *af* and *kol* share a core semantics and that their distributional differences are derived by licensing conditions that operate at distinct interfaces: syntax-semantics, in the case of *af*, versus (syntax)-semantics-pragmatics, in the case of *kol*. My aim is to find and explain these licensing conditions.

I hypothesize that *af* is inherently negative and propose that it carries a syntactic [Neg] feature (e.g. Zeijlstra 2004); as such, it associates with a negation operator and is therefore a *specialized indefinite* in the sense of Kratzer and Shimoyama (2002) and Kratzer (2005). This means that *af* is interpretable at the syntax-semantics interface. In contrast to *af*, I propose that *kol* is not inherently negative and as such is not specified for a [Neg] feature. A purely syntactic account cannot explain the behaviour of *kol* since *kol* does not show the sensitivity to negative features expected under a feature-checking account. In Chapter 4, I propose that *kol*, like *af*, is also a *specialized indefinite*, which associates with a universal operator in the semantics. I argue that an implementation in which *kol* is licensed at the syntax-semantics-pragmatics interface would best explain its behaviour.

The present chapter is organized as follows. Section 3.2 explores the assumption that *af* and *kol* are negative polarity items sharing with English *any* properties such as being licensed in negative and downward entailing contexts. A closer observation of their distribution leads to the following conclusions: first, *af* and *kol* are not negative polarity items on a par with English *any*, and second, *af* is a negative concord indefinite specified syntactically for an uninterpretable [Neg] feature, which needs to be checked by an interpretable [Neg] feature elsewhere in its immediate context; given the complexity of *kol* and especially its apparent non-sensitivity to negation, the discussion of *kol* is given its own chapter (Chapter 4). In section 3.3, I propose a syntax-semantics for *af*. Given the predictions from this proposal, we are faced with a puzzle which is discussed in Section 3.4, namely the availability of long-distance licensing of *af* in subjunctive environments. We conclude that long-distance licensing of *af* is allowed via a phase-extension/collapse mechanism. Section 3.5 presents and discusses the results of the experimental task in which the acceptability of *af* was tested in the immediate scope of negation, in non-negative contexts, and in long-distance contexts.

3.2 *Af* and *kol* in negative contexts

This section explores the distribution of *af* and *kol* in contexts which have been discussed in the literature in relation to negation, negative concord, and negative polarity. I start by showing that Hebrew is a negative concord language and that *af* and *kol* are sensitive to different types of negative environments. I continue by presenting arguments for and against the treatment of *af* and *kol* as negative polarity items. I conclude this section by pointing out some crucial differences between *af* and *kol*.

There are several issues that bear importance in determining our way of looking at *af* and *kol*: what kind of language is Hebrew in relation to negation and negative elements, and what are the peculiarities of the environments where these indefinites appear. Hebrew has a variety of indefinite determiners roughly corresponding to the

any series of indefinite determiners in English². In general, determiners which appear to be sensitive to negation have been characterized throughout the literature as being polarity items, negative concord items (which do not contribute semantic negation), and negative indefinites (n-words; these can be inherently negative, i.e. specified for a [Neg] feature).

Three main approaches have been put forward in the literature and can be summarized as follows (Zeijlstra 2004, Penka 2007):

- The first approach, *Factorisation and Absorption* (Zanuttini 1991, Haegeman 1995, Haegeman and Zanuttini 1996, De Swart and Sag 2002), considers all n-words to be semantically negative such that through some semantic process, all the negations melt together into one negative quantifier.
- The second approach takes the opposite perspective and views all n-words as non-negative negative polarity items (Laka 1990, Ladusaw 1992, Giannakidou 1997, 2000).
- Finally, it has been suggested that n-words are ambiguous between a negative and a non-negative interpretation. Van der Wouden and Zwarts (1993) and van der Wouden (1994, 1997) argue that n-words are configurationally ambiguous between semantically negative and non-negative terms. Herburger (2001) argues that n-words are even lexically ambiguous between the two readings.

In light of these approaches, we can now consider the Hebrew data and specifically whether *af* and *kol* are semantically negative (i.e. their meaning includes a negation), or whether they are inherently negative (i.e. they require a negative context, but cannot themselves contribute a negation operator).

Zeijlstra (2004) shows that similarly to Greek, Romanian and Hungarian, Hebrew exhibits Strict Negative Concord, in the sense of Giannakidou (1997, 2000), as defined

²A typology of the series of (negative) indefinites in Hebrew has been presented in Chapter 1 and follows Haspelmath (1997).

below:

- *Negative Concord*: two or more negative elements yield one semantic negation.
- *Strict Negative Concord*: n-words are not allowed to occur by themselves, but have to be accompanied by a single negative marker.

(Giannakidou, 1997, 2000)

Strict Negative Concord in Hebrew is illustrated in (1), where *af* is obligatorily accompanied by the negative marker *lo* ‘not’ both pre- and postverbally (Zeijlstra, 2004:126). Notice that unlike English *any*, (1d), *af* and *kol* do not need to be c-commanded by negation at surface structure, as long as they are in the syntactic scope of negation at LF, as shown in (1c) and (2b).

(1) a. John **lo** mečalčel le-*af* *exad*. vs. #John mečalčel le-*af* *exad*.
 John NEG calls to-AF one John calls to-AF one
 ‘John doesn’t call anybody.’

b. **lo** čilčel *af* *exad*. vs. #čilčel *af* *exad*.
 NEG called AF one called AF one
 ‘Nobody called.’

c. *af* *exad* **lo** čilčel. vs. #*af* *exad* čilčel.
 AF one NEG called AF one called
 ‘Nobody called.’

(adapted from Zeijlstra, 2004:127)

d. #Any cat didn’t appear.

e. *af* *exad* **lo** mečalčel le-*af* *exad*.
 AF one NEG calls to-AF one
 ‘Nobody calls anybody.’

The polarity sensitive (existential) interpretation of *kol* is available under negation, similarly to *af*.

- (2) a. **lo** raiti kol xatul.
 NEG seen.1sg KOL cat
 ‘I didn’t see any cat.’
I didn’t see a cat. (*af* was suggested by native speakers as an alternative for *kol* in this example)
- b. kol xatul **lo** hofiya.
 KOL cat NEG appeared
 ‘No cat appeared.’

Compare (2) with (3), where, in the absence of sentential negation, *kol* has a universal reading.

- (3) a. raiti kol xatul.
 seen.1sg KOL cat
 ‘I saw each and every cat.’
- b. kol xatul hofiya.
 KOL cat appeared
 ‘Each and every cat appeared.’

Levy (2008:142) presents three additional negative contexts which license *af*, but she does not discuss *kol* in these particular contexts. *Af* can appear in the scope of:

1. Two nominal negators: *xoser* ‘lack’ and the prefix *i-* ‘un-’;
2. The prepositional negator *bli* ‘without’;

3. Two adjectival complex negators: *asur* ‘forbidden’ and *i-efšar* ‘impossible’, where the prefix *i-* functions as an adjectival negator.

I have added *kol* to Levy’s data and provided native speakers’ judgments for the available readings of *af* and *kol* in the following examples (which are modified from Levy (2008:142)).

(4) Nominal negators *xoser* ‘lack’ and the prefix *i-* ‘un-’:

- a. **xoser** inyano be-*af/kol* mikčoa metaskel.
 lack interest-his in-AF/KOL subject frustrating
 ‘His lack of interest in any subject is frustrating.’
- b. **i-**hištatfut-xa be-*af/kol* šiur yašpia al ha-čiun šelxa.
 non-attendance-yours in-AF/KOL lesson affect.FUT on the-grade yours
 ‘Nonattendance at any lesson will affect your grade.’

For (4b), two interpretational possibilities were suggested by native speakers³. The first possibility was that *af* would mean *If you miss even one class, it doesn’t matter if you attend the rest of the classes, the grade will still be affected*; *kol* would mean *If you miss all the classes, the grade will be affected, but if you only miss one or two, then the grade will not be affected*. Some of the native speakers who provided this possibility found *kol* unacceptable/odd in this case and preferred to have *kol* modify a definite plural noun to express this meaning (*all the classes*). The second possibility was that *af* would mean *If you miss all the classes, ...*, and *kol* would mean *If you miss even one class, ...*. In addition, one native speaker found *kol* to be ambiguous between an *all* and an *any* interpretation. The readings appear to be due to the relative scope between the implied conditional, and the universal reading of the indefinite pronoun. These data show that *af* and *kol* may be licensed in contexts that do not involve direct sentential

³For these data, eight native speakers provided judgments.

negation.⁴

A second negative context that licenses *af* (Levy 2008) involves the prepositional negator *without*, (5). *Kol* is also licensed in this context and has an existential reading.

(5) Prepositional negator *bli* ‘without’:

- a. hi ba’a **bli** *af/kol* matana.
 she came without AF/KOL present
 ‘She came without any presents.’

The acceptability of *af* and *kol* in (5) may be explained by considering *without* as semantically equivalent to *not with*, in which case we would have a local covert negation licensing these items in its immediate scope.

Similarly, in (6a), a covert negation operator can be said to license *af* and *kol* if we consider *asur* ‘forbidden’ as the semantic equivalent of ‘not allowed’; as shown in (6b), Hebrew has an overt prefixed negator *not* in ‘not-possible’ that, as expected, licenses *af* and *kol*.

(6) Adjectival complex negators *asur* ‘forbidden’ and *i-efšar* ‘impossible’:

- a. **asur** liktof *af/kol* perax.
 forbidden/not-allowed pick.INF AF/KOL flower
 ‘It is forbidden to pick any flowers.’

⁴These data also show that native speakers accept the *af* and *kol* indefinite pronouns with very different interpretations. I address this variability in the syntax-semantics analysis I propose for *af* (in this chapter) and for *kol* in Chapter 4.

- b. **i-efšar** lirot *af/kol* ketem al ha-mapa.
 not-possible see.INF AF/KOL stain on the-tablecloth
 ‘It is impossible to see any stain on the tablecloth.’

Af can also appear in elliptical answers, (7a), and in elliptical exceptive phrases, (7b), but *kol* cannot, which points to semantic and syntactic differences between *af* and *kol* that need to be explored further.⁵

- (7) a. mi ba? *af/*kol* exad.
 who came? AF/KOL one
 ‘Who came? No one.’
- b. axalti hamon tapuxim aval *af/*kol* agas.
 ate.1sg a-lot apples but AF/KOL pear
 ‘I ate a lot of apples but no pear.’ (Lev, 2003:8)

So far we have looked at distributional properties of *af* and *kol* in relation to negation. We have not yet addressed the issue of whether *af* and *kol* actually are polarity items or rather just share some of the relevant semantic properties. The most prominent property that has long been associated with negative polarity items, such as English *any*, is the fact that they are usually licensed in downward entailing (DE) contexts (Ladusaw, 1979). Standard downward entailing contexts (other than negation), as well as the cases of questions and if-clauses are examined next.

Af is not licensed in non-negative downward entailing contexts. *Kol* is acceptable, but its interpretation varies. With the adverb *rarely*, for example, *kol* appears to have an existential or free choice interpretation, (8).⁶

⁵I will not address this particular puzzle in the present work.

⁶This example was judged “not so good” by native speakers.

(8) DE adversative predicate: rarely

- a. Le-itim rehokot hu mekabel kol haxlata.
 rarely he takes KOL decision
 ‘Rarely does he take any decision.’

It is rare that he takes a decision (he usually doesn't take decisions).

More importantly, *kol* is able to receive a universal reading in downward entailing contexts, (9a), and does not need an immediate negation in its environment in order to be licensed. This shows that *kol* is not specified for a [Neg] feature. It should be noted that in this type of (DE) context, *any* receives an existential reading, while *kol*, as shown in (9b), may have an existential or a universal reading. In (9b), the existential reading of *kol* is made possible by the presence of negation; compare with (9a) where in the absence of negation *kol* has a universal interpretation. We conclude that *kol* does not have the same sensitivity to downward entailing contexts as English *any*, in other words, downward entailingness is not what licenses *kol*. This is further supported by data where *kol* is licensed with a universal reading in non-DE contexts, as in (10).

(9) DE adversative predicate: doubt

- a. miška be-safek še- ifgoš kol/*af dov.
 mishka in-doubt that- meet-he.FUT KOL/AF bear
Mishka doesn't think/doubts that he will meet every bear there is. (with emphasis on *kol*)
- b. rina be-safek še- **lo** itnu kol pras le-mošē.
 Rina in-doubt that- NEG give.3pl.FUT KOL prize to-Moses
 ‘Rina doubts that they won't give a/any/every prize to Moses.’

- (10) raiti kol xatul.
 seen.1sg KOL cat
 ‘I saw each and every cat.’

Doubt has sometimes been paraphrased as *not think*, but, at least for Hebrew *af*, the implied negation in (11a) is not sufficient to license it. The idea is that *doubt* gives rise to a negative implicature (see Linebarger (1987), among others, for *any*). This negative implicature may license *kol*, but not *af*. An idea as to why *af* is licensed in (11c), long-distance relative to negation, is that since *think* is a negation-raising verb, if we have a negated *think* in the matrix clause, the negation is actually generated in the embedded clause, (11b). In (11b,c), *kol* is ambiguous between an *a* and an *each and every* interpretation. This ambiguity may be taken to show that the negative implicature is not directly responsible for the licensing of *kol*.

- (11) a. rina be-safek še- ta'ane al kol/*af še'ela.
 rina in-doubt that- answer.2sg.f.FUT about KOL/AF question
Rina doubts that she will answer each and every question.
- b. rina xoševet še- **lo** ta'ane al kol/af še'ela.
 rina thinks that- NEG answer.2sg.f.FUT about KOL/AF question
Rina thinks that she will not answer a/every (kol) /any (af) question.
 ↓
- c. rina **lo** xoševet še- ta'ane al kol/af še'ela.
 rina NEG thinks that- answer.2sg.f.FUT about KOL/AF question
Rina thinks that she will not answer a/every (kol) /any (af) question.

(11a) also provides evidence that *af* and *kol* differ in feature composition. Later in the chapter, I argue that the licensing conditions for *af* include feature checking, and since in this case there is no overt negation operator to carry a [Neg] feature, the [Neg] feature of *af* is not checked and *af* cannot be licensed. *Kol*, on the other hand, by

lacking such a feature, is in a sense less restricted.

Lev (2003) argues against considering *af* and *kol* as polarity items, based on the fact that downward entailing contexts, such as the quantified phrases in (12), are not enough to license *af* and *kol*. For example, *at most three* is downward monotone in its first argument, whereas *at least three* is not. *No* is also a monotone decreasing operator. This explains the licensing positions below, for English (Lev, 2003:4):

- (12) a. At most three people saw *anything*.
 #At least three people saw *anything*.
- b. At most three people didn't see *anything*.
 At least three people didn't see *anything*.

In contrast, if we look at the Hebrew equivalents, the monotonicity of *lexol hayoter* 'at most' and *lefaxot* 'at least' does not seem to play a role in the licensing of *af* and *kol* – *af* is only licensed in the immediate scope of negation, while *kol* receives a universal interpretation and bears emphatic stress.⁷ In (13b), in the immediate scope of negation, *kol* is ambiguous between an existential and a universal interpretation.

- (13) a. *lexol hayoter/lefaxot šloša anašim rau *af/kol seret ba-festival.*
 at most/at least three people saw AF/KOL movie at-the-festival
 'At most/at least three people saw every movie at the festival.' (with
 emphasis on *kol*)

⁷The unstressed, default, form would be *kol* + plural definite noun, i.e. *all the movies*.

- b. lexol hayoter/lefaxot šloša anašim **lo** rau *af/kol* seret
 at most/at least three people NEG saw AF/KOL movie
 ba-festival.
 at-the-festival
 ‘At most/at least three people didn’t see a_{af/kol}/any_{af/kol}/every_{kol} movie at
 the festival.’ (with emphasis on *kol* for the *every* interpretation)

The distribution in (13) is by no means unexpected if *af* and *kol* are not polarity items as such, but rather, they are sensitive to certain operators, instead of discourse monotonicity properties.

Further evidence for this hypothesis may be found if we look at other contexts – questions and *if*-clauses, that have been shown to license negative polarity items, and *any* in particular. English *any* can appear in the absence of negation in questions, (14):

- (14) Did you eat *any* cookies?

As illustrated in (15), in Hebrew, the polarity (existential) reading requires the presence of a negation operator. In the absence of negation, *kol* receives a universal reading. This is one of the cases where *any*, *af* and *kol* are shown to require different licensing conditions.

- (15) QUESTIONS

- a. axalta **af/kol* ugia?
 ate.2sg.m AF/KOL cookie
 ‘Did you eat every cookie?’ (with emphasis on *kol*)
- b. *af/kol* agas **lo** axalta?
 AF/KOL pear NEG ate.3sg.m
 ‘You didn’t eat a/any pear?’ (modified from Lev, 2003:4)

- c. **lo** axalta af/kol agas?
 NEG ate.3sg.m AF/KOL pear
 ‘You didn’t eat a/any?’

In *if*-clauses, *kol* is similar to English *any* in that both of them receive a free choice interpretation.

(16) *If*-CLAUSES

- a. im axalta kol/*af agas tekabel vitamin c
 if ate.2sg.m KOL/AF pear receive.3sg.m.FUT vitamin C
 ‘If you ate a/any pear, you’ll get vitamin C.’
 (modified from Lev, 2003:4)

- b. im haya kol/*af sikuy, az axšav kvar eyn.
 if was KOL/AF chance, then now already there-isn’t
 ‘If there was a/any chance, there isn’t one anymore.’

Finally, the semantic property that *af* and *kol* do share is *widening* of the domain of the common noun phrase that they combine with (in the sense of Kadmon and Landman 1993), meaning that the set introduced by the bare indefinite noun phrase in (17a) is a proper subset of the set introduced by the *af/kol* ‘any’ noun phrase in (17b). In (17b) we are excluding all the possible pears even the ones that we might have considered in (17a), therefore creating a stronger statement.

- (17) a. A: hu **lo** axal agas.
 he NEG ate pear
 ‘He didn’t eat a pear.’

B: But he surely must have eaten at least that tiny red pear.

- b. A: (lo), hu **lo** axal *af/kol* agas, (afilu lo et ha-agas
 (no), he NEG ate AF/KOL pear, (even not ACC the-pear
 ha-katan).
 the-small)
 ‘(No) He didn’t eat any pear, (not even the small one).’
 (modified from Lev (2003:3) with additional context)

Summing up some of the differences between *af* and *kol*, so far, we know that *af* is necessarily bound by overt or covert negation, while *kol* appears to be bound in a variety of ways (to be discussed in detail in Chapter 4). Since it is not clear at this point how *kol* is licensed, in the remainder of this chapter I will focus on *af*, and I will resume deciphering *kol* in Chapter 4.

3.3 The syntax-semantics of *af*

I adopt here the proposal put forth in Kratzer and Shimoyama (2002), namely the idea that the semantics of indefinite nouns (and this extends to the semantics of bare nouns in Hebrew) involves a domain variable D' , interpreted via a variable assignment function g , as in (18):

- (18) For all possible worlds w and variable assignments g :
 $g(D') \subseteq D$ (D is the set of possible individuals)
 $[[\textit{ein}_{D'} \textit{Mann}]]^{w,g} = \{x: x \text{ is a man in } w \ \& \ x \in g(D')\}$
 (Kratzer and Shimoyama, 2002:15)

An indefinite noun phrase, such as *ein mann* ‘a man’ in (18), denotes a subset of the set denoted by the noun. The relevant subset is determined by the domain variable D' ,

whose value may be decided by contextual factors (Kratzer and Shimoyama, 2002:15). One of the roles an indefinite pronoun might have is to widen the domain of the noun phrase it modifies in such a way as to include all individuals members of D , as in (19):

- (19) For $[[\alpha]]^{w,g} \subseteq D_e$,
- a. $[[irgend-\alpha]]^{w,g} = \{x: \exists g'[x \in [[\alpha]]^{w,g'}]\}$
 - b. $[[irgend-[ein_{D'} Mann]]]^{w,g} = \{x: x \text{ is a man in } w \ \& \ x \in g'(D')\} =$
 $= \{x: x \text{ is a man in } w\}$
- (Kratzer and Shimoyama, 2002:15)

In (19), x is a member of the set of entities denoted by the noun under some variable assignment g' ; g' assigns a value to the domain variable D' associated with the noun. The eventual free choice reading of an indefinite pronoun, such as *irgendein*, stems from the combination of this set of entities, of which x is a member, with a quantifier.

Af is a strict negative concord indefinite, which associates with a negative operator available in the context (in the sense of Kratzer and Shimoyama (2002) and Kratzer (2005)). Syntactically, this relation is expressed via feature checking between the [Neg] feature of *af* and the [Neg] feature of an overt or covert negative operator in its immediate context.

I propose the syntax-semantics for *af* shown in (20); the semantics of *af* is the same as the semantics of a free choice, domain widening, indefinite, as in Kratzer and Shimoyama (2002:15).

- (20) a. Syntax: $af_{[Neg]}$
 b. Semantics: $[[af-\alpha]]^{w,g} = \{x: \exists g'[x \in [[\alpha]]^{w,g'}]\}$

The derivation of an *af*-utterance is illustrated in (21).⁸

- (21) a. *af* kelev lo navax.
 AF dog NEG barked
 ‘No dog barked.’
- b. The set of dogs: {Fluffy, Fido}
- c. Lexical entries:
 (i) $[[bark]]^{w,g} = \{\lambda x.\lambda w.bark(x)(w)\}$
 (ii) $[[af-dog]]^{w,g} = \{x: \exists g'[x \in [[dog]]^{w,g'}]\}$
 (iii) $[[Neg \beta]]^{w,g} = \{\lambda w'. \neg \exists p [p \in [[\beta]]^{w,g} \ \& \ p(w') = 1]\}$ (the proposition that is true in all the worlds in which no proposition in β is true)
 (Kratzer and Shimoyama, 2002)
- d. Assuming a Hamblin framework⁹, indefinite pronouns generate sets of individual alternatives:
 $[[DP]] = [[af-dog]]^{w,g} =$
 $= \{x: \exists g'[x \in [[dog]]^{w,g'}]\} = \{\text{Fluffy, Fido, Fluffy+Fido}\}$
- e. Via Hamblin Functional Application, the VP combines with the set of individual alternatives, which as a result expands into a set of propositional alternatives:
 $[[IP]] = [[VP]]([[DP]]) = [[bark]](\{\text{Fluffy, Fido, Fluffy+Fido}\}) =$
 $= [\lambda x.\lambda w.bark(x)(w)](\{\text{Fluffy, Fido, Fluffy+Fido}\}) =$
 $= \{\lambda w.barks(\text{Fluffy})(w), \lambda w.barks(\text{Fido})(w), \lambda w.bark(\text{Fluffy+Fido})(w)\}$

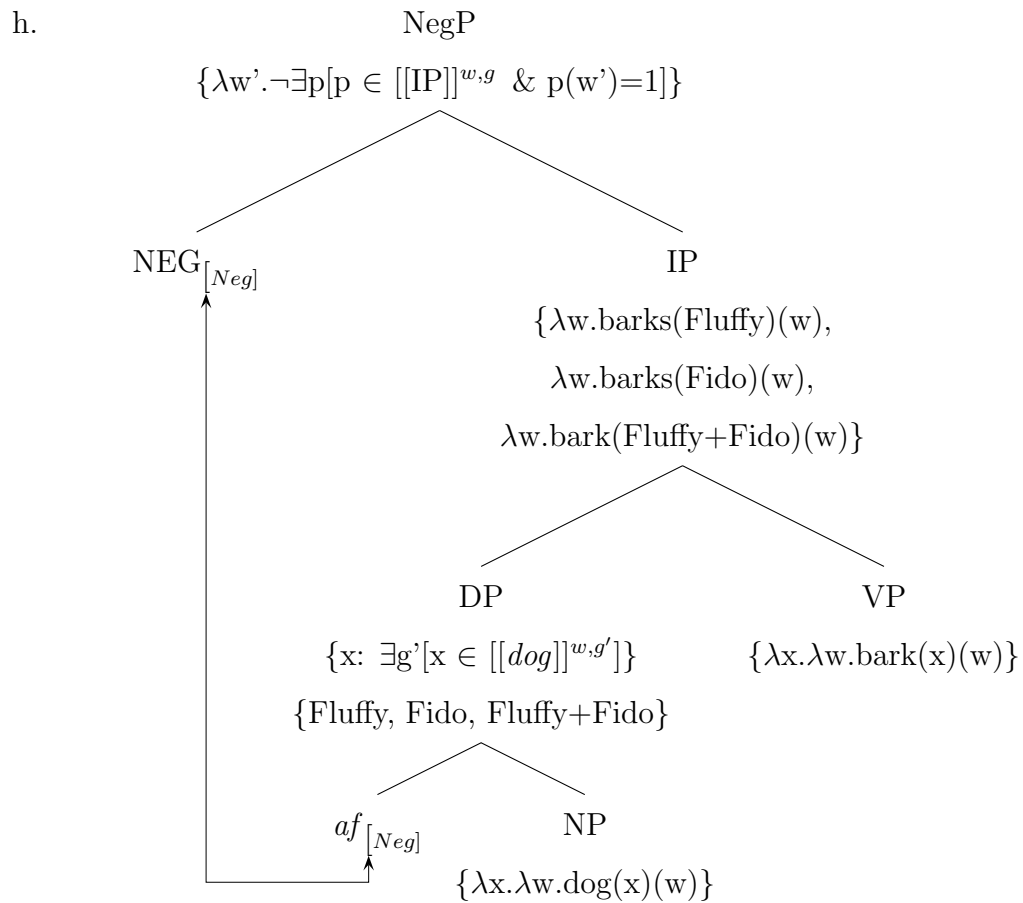
⁸I am leaving aside the debate with respect to high versus low negation in the syntax. Here, I will consider the scope of negation at LF, which in terms of structure will place the negation above IP.

⁹See Chapter 1, section 1.2.

- f. The expansion of alternatives in the derivation stops when the propositional alternatives are selected by a sentential operator, here negation, resulting in singleton sets of negated propositions:

$$[[\text{Neg}]][[\text{IP}]] = \{\lambda w'. \neg \exists p [p \in \{\lambda w. \text{barks}(\text{Fluffy})(w), \lambda w. \text{barks}(\text{Fido})(w), \lambda w. \text{bark}(\text{Fluffy}+\text{Fido})(w)\} \ \& \ p(w') = 1]\}$$

- g. (21a) is true iff it is not the case that Fluffy barks and it is not the case that Fido barks and it is not the case that Fluffy+Fido bark.



Given the syntax-semantics of *af*, we predict *af* to be licensed in the immediate scope of a negative licenser. However, a puzzling set of data shows that *af* may be licensed long-distance with respect to its negation licenser. In the next section, I examine complex sentences with *af* in the embedded clause and a negation licenser in the matrix clause.

Although such a configuration is predicted to disallow *af*, we find evidence that *af* can be licensed long-distance by negation depending on the type of matrix verb.

3.4 Licensing *af* long-distance

In previous studies, it has been observed that, contra predictions, sometimes *af* can be licensed long-distance relative to its negation licenser. For example, Lev (2003:7-8) notes that in a finite embedded clause *af* can be licensed long-distance relative to negation with the matrix verb *want*, but not with matrix verb *know*. Similarly, Glinert (1982:466) notes that *af* is licensed long-distance in the finite clausal complement of verbs such as *xašav* ‘think’, *he’emin* ‘believe’ and *čipa* ‘expect’, which are said to involve *negation raising*, illustrated in (22). (22a) can be considered as derived underlyingly from and equivalent in meaning to (22b), which places *af* in the immediate scope of its negation licenser.

- (22) a. ani **lo** xošev še- ačru *af* *exad*.
 I NEG think that- arrested.3pl AF one
 ‘I don’t think they arrested anyone.’
- b. ani xošev še- **lo** ačru *af* *exad*.
 I think that- NEG arrested.3pl AF one
 ‘I think they didn’t arrest anyone.’
 (Glinert, 1982:466)

Glinert further notes that the above explanation does not work with all verbs, as shown in the non-equivalent meaning of (23a) versus (23b) and the fact that *af* is unexpectedly allowed in (23a).

- (23) a. **lo** hivtaxti še- *af* *exad* ya'avor.
 NEG promised.1sg that- AF one pass.3sg.FUT
 'I didn't promise that anyone would pass.'
- b. hivtaxti še- *af* *exad* **lo** ya'avor.
 promised.1sg that- AF one NEG pass.3sg.FUT
 'I promised that noone will pass.'
- (Glinert, 1982:466)

Glinert speculates that the unexpected long-distance licensing of *af* in (23a) depends on the semantics of the governing matrix verb. Both authors, Glinert (1982) and Lev (2003), leave their observations regarding the long-distance facts to be tackled in future research. In the next subsections I address this unresolved issue by looking into the distribution of *af* in finite clausal complements of different attitude verbs – factive *know* and volitional *want*, and I propose a solution to this puzzle.

3.4.1 *Af* and *kol* with *know* and *want*

First, we look at the distribution of *af* under *know*. When embedded under *know*, *af* is licensed in the Immediate Scope (IS) of negation (clause-mate negation), as in (24a), but it is not licensed Long-Distance (LD) by the matrix negation, as in (24b). These facts are unproblematic if we consider *af* to be a strict negative concord item licensed locally by negation.¹⁰ It should be noted here that, in contrast with English where the embedded clause is non-finite, in Hebrew we have a finite clausal complement. Syntactically, a finite clause corresponds to two separate binding domains. When the negation is in the upper domain, it usually cannot license (via an Agree relation) an item in the lower clausal domain.

¹⁰Locality restrictions on negation-sensitive items have been extensively observed in the literature; see Linebarger 1987; Ladusaw 1979, 1992; among others.

- (24) KNOW + AF
- a. Rina₁ yoda'at še- hi_{1/2} **lo** tedaber im *af exad*. [IS]
 Rina knows that- she NEG talk.FUT with AF one
 'Rina knows that she will talk to noone.'
- b. #Rina₁ **lo** yoda'at še- hi_{1/2} tedaber im **af exad*. [LD]
 Rina NEG knows that- she talk.FUT with AF one
 'Rina doesn't know that she will talk to anyone.'

Seeing how in negative contexts both *af* and *kol* may receive an existential interpretation corresponding to polarity sensitive *any*, we might expect *kol* in the next examples to exhibit a behavior similar to that of *af* in the same environment. This prediction is born out when *kol* is in the immediate scope of negation, (25a). However, in contrast to *af*, *kol* is acceptable long-distance relative to negation, (25b), with a universal reading, and it bears emphatic stress.

- (25) KNOW + KOL
- a. Rina₁ yoda'at še- hi_{1/2} **lo** tedaber im *kol student*. [IS]
 Rina knows that- she NEG talk.FUT with KOL student
 'Rina knows that she won't talk to any student.'
- (i) *Rina knows that she will not talk to any student.*
- (ii) *Rina knows that she won't talk to each and every student.* (of a contextually salient group)
- b. Rina₁ **lo** yoda'at še- hi₂ tedaber im *kol student*. [LD]
 Rina NEG knows that- she talk.FUT with KOL student
 'Rina doesn't know that she will talk to each and every student.' (of a contextually salient set)
- Scenario: Rina assumes that the project leader will have a discussion with the whole group to give them a joint task; however, unbeknownst to Rina,

the project leader will actually talk to each student individually and offer them various tasks.

This example again shows that the licensing of *kol* is independent of negation, and as such unconstrained by feature checking requirements (involving negation). In the immediate scope of negation, an utterance with *kol* may be interpreted existentially or universally; in the absence of clause-mate negation, *kol* is interpreted universally, as we have seen previously for affirmative contexts.

With *want*-type verbs, *af* is licensed both in the immediate scope of a negation operator, (26a), as expected, and long-distance, (26b), which is unexpected. The long-distance licensing is unexpected because the embedded clause in Hebrew is a finite CP, i.e. a “closed” phase, and not an infinitival clause, i.e. a transparent domain (which would allow feature checking). I elaborate on these concepts in the following sections.

(26) WANT + AF

a. Rina₁ roča še- hi₂/Dina lo tizke be-*af* pras. [IS]

Rina wants that- she/Dina NEG win.FUT in-AF prize

‘Rina wants her/Dina to not win any prize.’

Rina wants for things to be such that Dina will not win a prize.

b. Rina₁ lo roča še- hi₂/Dina tizke be-*af* pras.[LD]

Rina NEG wants that- she/Dina win.FUT in-AF prize

‘Rina doesn’t want her/Dina to win any prize.’

Rina doesn’t want Dina to win a prize.

The distribution of *kol* is shown in (27). In contrast to *af*, in the long-distance scenario, (27b), the polarity sensitive (exsistential) reading is only available if *kol* is modified by *še-hu* ‘whatsoever’, (27b.i); in its absence, *kol* has a universal reading and bears emphatic stress, (27b.ii).

(27) WANT + KOL

a. Rina₁ roča še- hi₂/Dina **lo** tizke be-*kol* pras.

Rina wants that- she/Dina NEG win.FUT in-KOL prize

'Rina wants her/Dina not to win any prize.'

(i) *Rina doesn't want Dina to win a prize.*(ii) *Rina doesn't want Dina to win every prize.*b. Rina₁ **lo** roča še- hi₂/Dina tizke be-*kol* pras (šehu).

Rina NEG wants that- she/Dina win.FUT in-KOL prize (whatsoever)

(i) *Rina doesn't want Dina to win a prize (whatsoever).*(ii) *Rina doesn't want Dina to win every prize. (emphatic stress on kol)*

(27) shows not only that the licensing of *kol* is independent of negation, but more importantly, that *kol* may have a universal or an existential interpretation in the immediate scope of negation. This suggests that perhaps the existential reading is only apparent, in other words, that there is no existential/NPI *kol* as considered, for example by Levy (2008).

Although at first glance, we seem to have the same type of syntactic environment for *af* and *kol*, namely embedded CPs, finite clauses, which would predict a similar distribution for the two indefinites, the data show that this is not the case. This is expected if *af* and *kol* differ in terms of feature composition. At this point, we can conclude that the properties of the embedding verb – epistemic/factive (*know*) vs. volitional (*want*), play a crucial role in the distribution and licensing of *af*, but not of *kol*. The observed difference in licensing suggests that there must be some syntactic mechanism that allows the long-distance licensing of *af* with matrix verb *want* but not with *know*. Several possibilities that could explain these facts come to mind here, such as restructuring and neg-raising, and these are explored next.

3.4.2 Restructuring?

We can discard the first possibility right away. *Restructuring* (e.g. Wurmbrand, 2001; Hacquard, 2006) is not relevant to the Hebrew data under discussion because restructuring applies to infinitivals. The embedded clauses under examination here are all finite clauses headed by a complementizer. This complementizer is evidence for an embedded CP, i.e., a second CP. The argument for restructuring is based on the idea that we have a reduced clausal domain, meaning one CP (Wurmbrand, 2001; Hacquard, 2006, among others). This is not the case here.

3.4.3 Neg-raising?

Another possibility, with respect to the long-distance licensing facts under *want*-type verbs, is to consider it as a case of *negation-raising*. As mentioned above, Glinert (1982) notes differences between verbs such as *xosev* ‘think’ versus *mavtiax* ‘promise’.¹¹ He suggests that (28a) is equivalent and perhaps derived underlyingly from (28b) by *negative transportation* (nowadays known as *neg-raising*). This means that (28a) and (28b) share the same syntactic structure and therefore the licensing of *af* is expected.

- (28) a. ani lo xošev še- ačru af exad. [(28a) ≡ (28b)]
 I NEG think that- arrested.3pl AF one
 ‘I don’t think they arrested anyone.’
Negative transportation: [I **not** think [they ⟨**not**⟩ arrested anyone]]

¹¹Similar effects have been observed for English (Gajewski, 2007:289-290) in (i). Compare with a non-neg-raising predicate such as *say* in (ii).

- (i) Bill thinks that Mary is **not** here. ≡ Bill doesn’t think that Mary is ⟨**not**⟩ here.
 (ii) Bill said that Mary is **not** here. ≠ Bill didn’t say that Mary is here.

- b. ani xošev še- **lo** ačru *af* *exad*.
 I think that- NEG arrested.3pl AF one
 ‘I think they didn’t arrest anyone.’
 (examples adapted from Glinert, 1982:466)

However, Glinert shows that neg-raising does not explain the long-distance facts in (29), since (29a) is not equivalent to (29b), meaning that they have different syntactic structures. Since the negation in (29a) is generated in the matrix clause, it is puzzling that *af* is licensed long-distance.

- (29) a. **lo** hivtaxti še- *af* *student* ya’avor. [(29a) ≠ (29b)]
 NEG promised.1sg that- AF student pass.3sg.FUT
 ‘I didn’t promise that any student will pass.’
- b. hivtaxti še- *af* *student* **lo** ya’avor. [(29b) ≡ (29c)]
 promised.1sg that- AF student NEG pass.3sg.FUT
 ‘I promised that no student will pass.’
- c. hivtaxti še- **lo** ya’avor *af* *student*.
 promised.1sg that- NEG pass.3sg.FUT AF student
 ‘I promised that no student will pass.’
 (examples modified from Glinert, 1982:466)

These examples show that neg-raising cannot be the only mechanism at work in the long-distance licensing of *af*. Although in some cases *af* can be licensed via neg-raising, as Glinert suggests for *xosev* ‘think’, in other cases it cannot be neg-raising that licenses *af* (the equivalence does not hold) and therefore we need a different mechanism to explain the facts.

The proposed solution involves *phase extension/collapse* (Oshima 2001, 2002, 2003; den Dikken 2006, 2007). Oshima, in particular, discusses subjunctive environments and obviation effects. In the next section, I show that *af* is licensed long-distance precisely in this type of subjunctive environment.

3.4.4 The Hebrew subjunctive and obviation effects

Even though Hebrew does not have a lexicalized subjunctive marker, in the data under observation here, *af* is licensed in a specific environment that has been characterized as subjunctive (embedded clauses marked for future tense¹²). Landau (2004) brings several arguments as evidence for the subjunctive mood in Hebrew, concluding that the subjunctive can be identified by a series of syntactic properties.

“The most obvious objection to the proposal that we are dealing with subjunctive complements [see (30) below] is based on the observation that Hebrew, unlike, e.g., Romance and Slavic, has no designated subjunctive verbal paradigm. Thus, the complements under discussion all bear the normal future tense inflection. This, however, cannot be taken as conclusive evidence against the proposal that Hebrew possesses the syntactic type of subjunctive clauses. After all, such one-to-many mappings between morphology and syntax are quite common crosslinguistically. In fact, [...] the entire family of Balkan languages grammaticalizes the subjunctive mood without any designated verbal paradigm. Instead, a monosyllabic marker is used to identify that mood. One can plausibly argue that this marker is null in Hebrew. The finite Hebrew complements under discussion exhibit a cluster of syntactic properties that naturally classifies them as subjunctives” (Landau, 2004:819).

¹²A complementizer introducing finite subjunctive complements has been noted in Japanese for complements of verbs of wanting, ordering, etc. (Uchibori, 2000).

These syntactic properties are as follows:

- Property A: The embedded tense must be future.

(30) [Lo darašti me-Gil [še-*pro* yedaber im *af exad*]]
 NEG demanded.1sg from-Gil that-*pro* speak.3sg.m.FUT with AF one
 ‘I didn’t demand of Gil that he speak to anybody.’

Landau argues that tense restrictions have been noted to signal the presence of subjunctive complements, and play a crucial role in their analysis (Picallo 1985, Kempchinsky 1986, Krapova 2001, a.o.). He points out that the only tense allowed in the Hebrew control complements is future and connects this to the fact that usually subjunctive clauses are associated with an irrealis interpretation. The Hebrew future tense (unlike the English one) expresses the irrealis *would* as well as the future *will* (Landau, 2004:820). This renders these clauses in Hebrew as likely candidates for the subjunctive mood.

- Property B: Another typical subjunctive property is subject obviation. Subject obviation consists of an obligatory disjoint reference between the subject of the matrix clause and the subject of the embedded clause (Landau, 2004:856), i.e. the subject of the matrix and the subject of the embedded clause cannot refer to the same entity. This is found in Hebrew with some verbs, for example, *want* and *need*, as illustrated in (31). In (31a), the sentence can only mean that the matrix subject – Rina – wanted somebody else (not herself) to win the prize; similarly, in (31b), Gil needs someone else (not himself) to know French.

(31) a. Rina₁ račta še- hi_{*1/2} tizke ba-pras.
 Rina wanted that- she win.3sg.f.FUT in-the-prize
 ‘Rina₁ wanted that she_{*1/2} would win the prize.’

- b. Gil₁ čarix še- hu_{*1/2} yeda čarfatiť.
 Gil needs that- he know.3sg.m.FUT French
 ‘Gil₁ needs him_{*1/2} to know French.’
 (Landau, 2004:820)

Compare with *promise* in (32):

- (32) Gil₁ hivtiax še- hu_{1/2} yeda čarfatiť be-sof
 Gil promised that- he know.3sg.m.FUT French at-end
 ha-semester.
 the-semester
 ‘Gil promised that he/Gil/Joe will know French by the end of the semester.’
 i.e., either Gil himself promised to learn French by the end of the semester,
 or, Gil promised that someone else, e.g. Joe, will know French by then
 (perhaps because Gil is a good French teacher).

Obviation effects are found in Hebrew with verbs such as *want* and *need* which take subjunctive complements, but not with verbs such as *know* and *believe* which take indicative complements. In what follows, I will assume, following Landau, that certain attitude verbs (e.g. volitional ones) in Hebrew take subjunctive complements.¹³

First, I will introduce a syntactic phase extension mechanism which I apply in Hebrew to finite subjunctive clauses complements of volitional verbs. This mechanism does not apply to epistemic verbs which take an indicative complement and have therefore a different syntactic structure.

¹³Avrutin and Babyonyshev (1997:254) also note that subject obviation phenomena occur in the complements of volitional verbs (e.g. *want*), but not in the complements of epistemic verbs (e.g. *know*), since epistemic verbs do not impose restrictions on the interpretation of the events described in their complement clauses. This supports the findings from the Hebrew data, where subject obviation is observed w.r.t *want* but not w.r.t *know*.

3.4.5 Phase extension

In recent work, den Dikken (2006, 2007) proposes a phase extension mechanism implemented via head-movement, as follows:

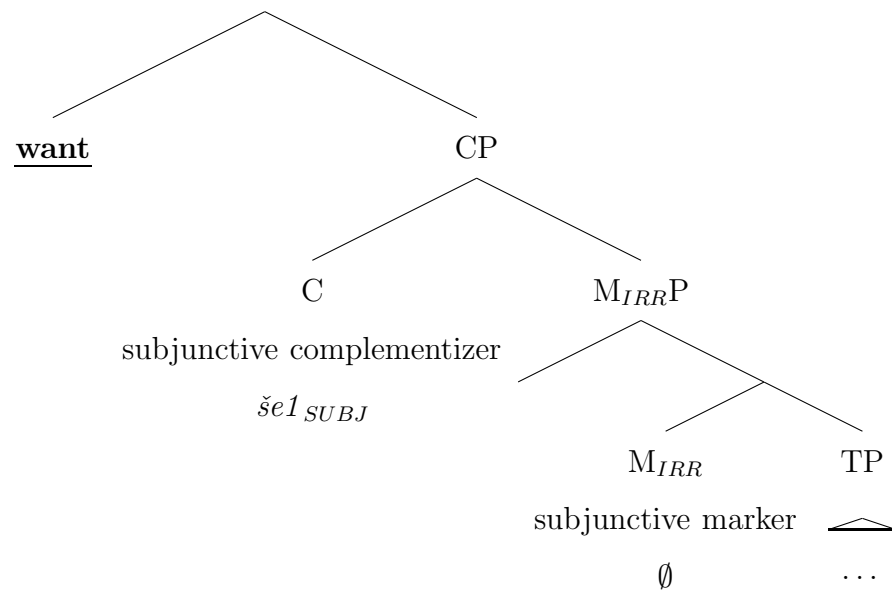
- *Phase Extension*: syntactic movement of the head H of a phase α up to the head X of the node β dominating α extends the phase up from α to β ; α loses its phasehood in the process, and any constituent on the edge of α ends up in the domain of the derived phase β as a result of Phase Extension (den Dikken, 2006:2).
- Movement of the head H of a phrase HP embedded inside a phase Φ to the head of the phase makes both H and its maximal projection visible to probes outside the phase (den Dikken, 2006:3).

A similar mechanism has been proposed in Oshima (2001, 2002, 2003). In the present work, I follow Oshima’s account, since it specifically addresses the constructions under discussion. Oshima is concerned with subjunctive constructions from a crosslinguistic point of view, and in particular with clausal complements to predicates of volition – volitional subjunctive clauses, which makes his account directly relevant to the issues addressed here. Oshima notes that head movement of the subjunctive tense can give rise to subject obviation, for example in Russian and in Romance languages. Oshima argues that Chomsky’s (2000, 2001) notion of “(strong) phase” can be used to define the local domain for Condition B. In order to account for the transparency of subjunctive clauses (transparent to binding from outside, unlike the finite indicative clause), Oshima proposes a phase collapse mechanism, explained below.

Many languages have both a subjunctive mood marker (e.g. *să* in Romanian) and a subjunctive complementizer distinct from the indicative complementizer (*ca_{SUBJ.Compl.}* vs. *că_{IND.Compl.}* in Romanian). Oshima (2003) takes this as evidence for the existence of distinct complementizers also in languages which do not have two phonologically distinct lexical items, such that for example English would have *that1_{SUBJ}* and *that2_{IND}*,

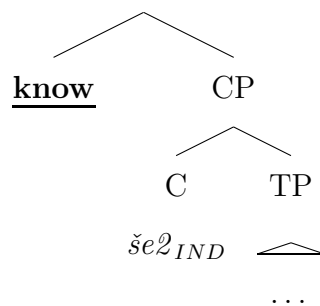
Russian would have *cto1_{SUBJ}* and *cto2_{IND}*, etc. In the same vein, Hebrew would have *še1_{SUBJ}* and *še2_{IND}* ‘that’. If this is indeed the case, then we can assume for the Hebrew subjunctive the syntax proposed for Balkan and Romance languages by Terzi (1992), Rivero (1994), Tsimpli (1995), Krapova (2001) and Roussou (2001), among others, who posit a Mood projection with an irrealis feature between TP and CP. This is illustrated for Hebrew in (33) where volitional *want* takes a subjunctive complementizer (*še1_{SUBJ}*) and a null subjunctive marker.

(33) Hebrew



In contrast, the verb *know* takes an indicative complement introduced by the complementizer *še2_{IND}*, as shown in (34).

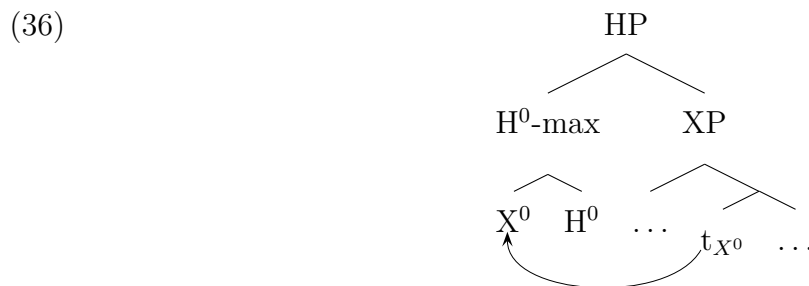
(34)



Oshima (2003) claims that the obviation effects result from head-movement of the subjunctive tense and implements a *phase collapse* mechanism (Oshima 2001, 2002), which is triggered by the raising of the subjunctive tense to a higher indicative tense. Under this approach, V raises to *v*, then to T, and then to C.

- (35) *Phase collapse*: [...] where X^0 , the head of a strong phase (PH), has incorporated to H^0 , a head, the trace t of X^0 may lose the property of projecting to a strong phase (Oshima, 2002).

In (36) we see the movement configuration as applied to the subjunctive. If XP were a phase, then after the movement the phase boundary would be extended. This would result in a transparency effect, i.e. the XP boundary would now be transparent.



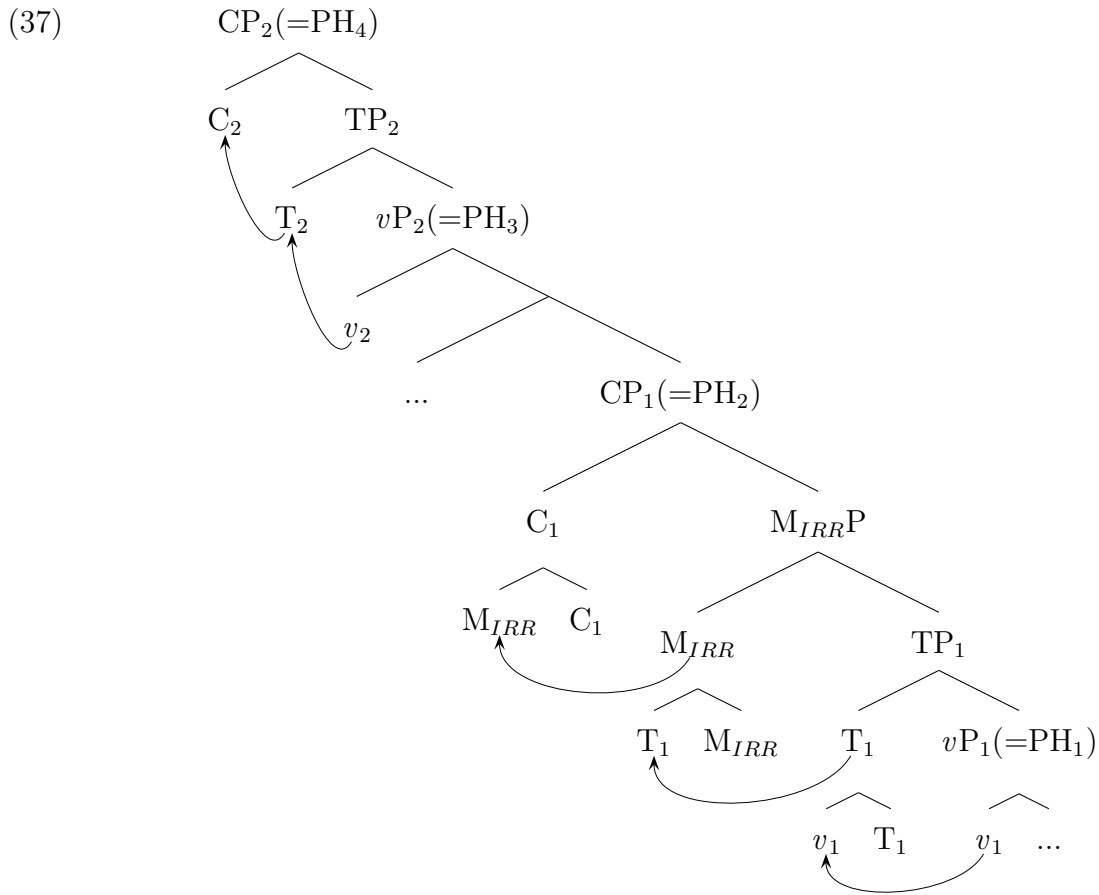
Thus, subject obviation is the result of movement of the verb complex from the subordinate clause to the matrix¹⁴ and by doing so collapsing multiple phases into one. This extends the binding category for Condition B (Picallo 1985, Kempchinsky 1986), rendering the subject of the matrix and of the embedded clause subject to Condition B. This mechanism is restricted to subjunctive complements (e.g. the finite irrealis subjunctive clauses selected by, for example, volitional predicates such as *want* and *desire*).

Previous studies also support the idea of extending the binding domain, for example, Picallo (1985), Progovac (1994), Avrutin and Babyonyshev (1997), and claim that the

¹⁴For evidence for head-raising out of a tensed clause, see Koopman 1984, among others (Oshima, 2003).

tense dependency of the subjunctive clause triggers the extension of the local domain for pronominals, which in our case means that we are left with a transparent clausal boundary (i.e. we have a partial explanation as to why *af* can be licensed long-distance; a complete explanation also includes feature checking).

This syntactic mechanism is illustrated below, where we have cyclical head-to-head movement at the edges, from $v_1 \rightarrow T_1 \rightarrow \text{Mood} \rightarrow C_1 \rightarrow v_2 \rightarrow T_2$, thus extending the phasal domain and allowing for long-distance feature checking.



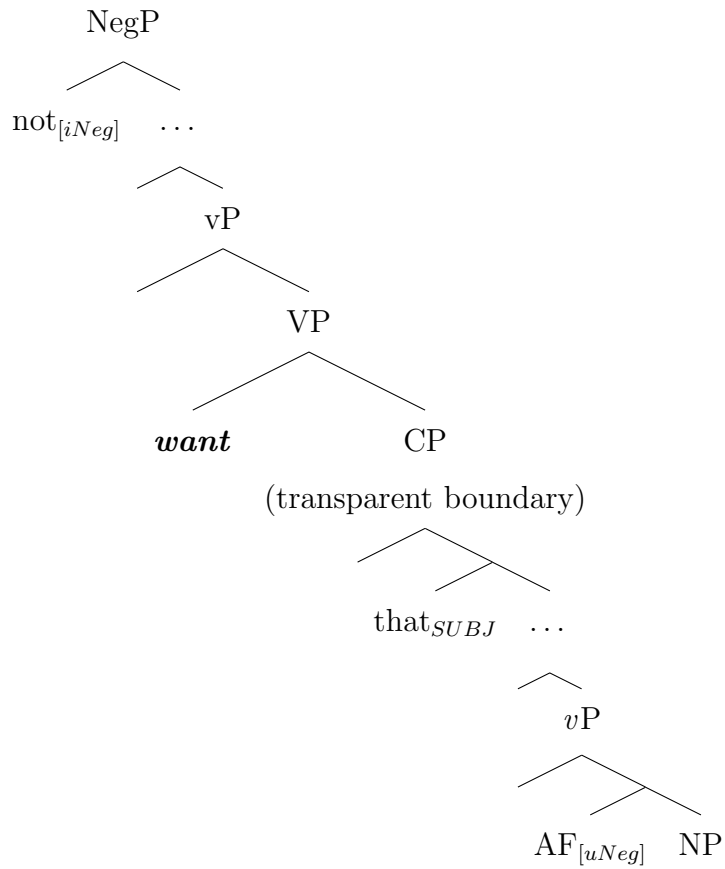
Oshima's proposal can be understood as the modern innovation of the view found in the literature, that in some subjunctives, a dependent tense is responsible for extending the binding domain (Picallo 1985, Progovac 1994, Avrutin and Babyonyshev 1997).

3.4.6 The proposal

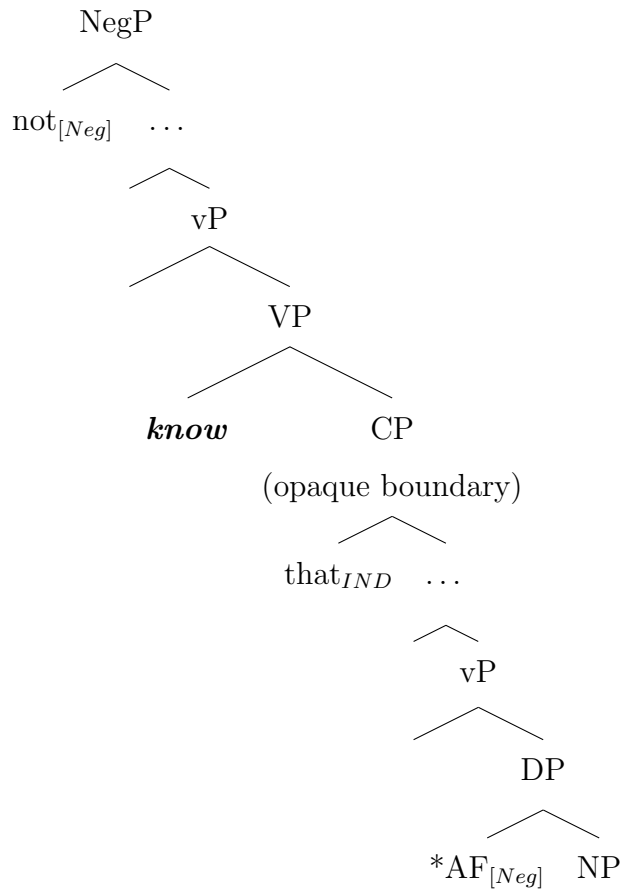
Recapitulating from above, we want to explain the conditions which allow *af* to be unexpectedly licensed long-distance with the verb *want*, but not with the verb *know*. This contrast is suggestive of a syntactic effect, and this effect has two contributing factors. The first factor is related to the feature composition of *af* – there must be some feature that *af* is specified for, and this feature interacts with the upper (matrix) negation. Since *af* is inherently negative, I propose that *af* is specified for a [uNeg] feature. Second, even with this feature specification, the [uNeg] feature of *af* is too far away from the [iNeg] feature of the matrix negation – two phases intervene between the two features (a *vP* and a *CP*). This is where the phase collapse mechanism comes in. In the case of *want*, which takes a volitional subjunctive complement, we have V-to-C (head) movement of the verbal complex to the matrix clause. This creates a transparent domain by “eliminating” a strong phase (the embedded *CP* boundary). In turn, this allows the [uNeg] feature of *af* to be checked by the [iNeg] feature on *Neg*⁰ resulting in the licensing of *af*. The corresponding structure is presented in (38).¹⁵

¹⁵An important point to note here is that the claim is not that the subjunctive mood is directly responsible for the licensing of *af* by creating a transparent domain which allows feature valuation. Rather, the claim/prediction is that *af* would be licensed, generally, in transparent environments. An example is provided below:

- (i) Infinitivals:
- a. hi lo roča [lizkot be-af pras].
 she NEG wants wins.INF in-AF prize
 ‘She doesn’t want to win any prize.’

(38) Long-distance licensing with matrix verb *want*

In contrast to *volitional subjunctives*, e.g. *want* in (38), a verb such as *know* introduces an indicative complement and does not trigger *phase collapse*. This is illustrated in (39), where as expected, we find that *af* cannot be licensed across phases.

(39) Long-distance licensing with matrix verb *know*

We conclude that the key is the difference in the complementation structures for the two types of verbs. This means that in the case of *want*, where *af* is licensed long-distance, a phase extension strategy is at work, which renders the [uNeg] feature of *af* visible to the negation operator. *Af* is licensed through feature checking.

In order to gather evidence of the colloquial use of *af* in both the immediate scope contexts and in the more problematic long-distance contexts, a grammaticality task was conducted. The results are presented next.

3.5 Experimental task: *af* and *kol*

The grammaticality judgment task was conducted with the purpose of verifying intuitions with respect to the acceptability of *af* in colloquial speech, in the long-distance contexts discussed in this chapter. *Af* was compared with *kol* across contexts. The *kol* data has proved problematic for two reasons. First, when the experiment was designed *af* and *kol* were considered to have very similar properties and the variety of *kol* readings was not factored in. Second, the participants were asked to rate colloquial use, and *kol* is considered more formal in negative contexts which has led at least some participants to reject the use of *kol* with negation. On the other hand, *kol* on its universal reading is informal and widely used. For this reason, in some cases, it was not clear whether the participants accepted *kol* precisely because it could be interpreted universally. These limitations are taken into account when discussing the results obtained for *kol*.

3.5.1 Design

Thirty-eight native speakers of Hebrew participated in this task. Each participant was presented with a questionnaire containing thirty-two sentences (items) to be rated. Each item contained a background-target paired sentence. The background sentence was always grammatical and was meant to provide some context for the target sentence. The experiment used a 2x2 design with two balanced lists (questionnaire A and questionnaire B). Eighteen participants were presented with version-A of the questionnaire and twenty participants with version-B of the questionnaire. The participants were instructed to rate the acceptability of target sentences according to whether or not they would use these sentences in day-to-day speech, and taking into consideration the background sentences provided. A 1 to 4 rating scale was given, as follows: *always used* sentence = 4; *sometimes used* = 3; *rarely used* = 2; *never used* = 1.

3.5.2 Conditions

The initial hypothesis, which has been refined and modified in the theoretical analysis, was that *af* and *kol* are always licensed by clause-mate negation, and that long-distance licensing (in embedded clauses) relative to negation depends on the syntax-semantics of the matrix verb. Three factors were considered when testing the hypotheses for *af* and *kol*:

1. Clause type (whether the negation was in the embedded clause or in the matrix clause);
2. Main verb (factive *know* (takes indicative complement) or volitional *want* (takes subjunctive complement));
3. Determiner (*af* or *kol*).

The effect of clause type factor was divided into two conditions: Immediate Scope context and Long-Distance context. The Immediate Scope condition tested the acceptability of *af* and *kol* in the immediate scope of sentential negation, in complex sentences in which both the negation and the determiner were in an embedded finite clause, of the form illustrated in (40a,c); examples of target sentences are given in (40b,d), respectively.

(40) Immediate Scope items:

- a. [... *know* ... [that ... Neg + finite V ... *af/kol* ...]]
- b. Hu yodea [še- lo ifgoš kol dov ba-tiul ha-yom.]
 he knows that- NEG meet.FUT KOL bear in-the-trip the-day
 ‘He knows that he will not meet any bear during his walk today.’
- c. [... *want* ... [that ... Neg + finite V ... *af/kol* ...]]

- d. Hi roča [še- Ran lo izke be-kol pras.]
 She wants that- Ran NEG wins.FUT in-KOL prize
 ‘She wants Ran not to win any prize.’

Since it was expected that *af* and *kol* would be equally acceptable in the immediate scope of sentential negation, fewer items of this type were tested (at a 1:2 ratio relative to the conditions where differences were expected).

The Long-Distance context tested the acceptability of *af* and *kol* in complex sentences in which the negation was in the main clause and the determiner in an embedded finite clause, either in the scope of matrix verb *know* (the indicative construction), as in (41a,b), or in the scope of matrix verb *want* (the subjunctive construction), as in (41c,d).

(41) Long-Distance items:

- a. [... Neg + *know* ... [that ... finite V ... **af*/**kol* ...]]
- b. Hu lo yodea [še- ifgoš *af dov ba-tiul ha-yom.]
 he NEG knows that- meet.FUT AF bear in-the-trip the-day
 ‘He doesn’t know that he will meet any bear during his walk today.’
- c. [... Neg + *want* ... [that ... finite V ... *af*/*kol* ...]]
- d. Hi lo roča [še- Rachel tizke be-af pras.]
 she NEG wants that- Rachel wins.FUT in-AF prize
 ‘She doesn’t want Rachel to win any prize.’

The effect of main verb factor compared for each determiner its acceptability with *know* versus *want* relative to Immediate Scope versus Long-Distance contexts. It was predicted that the feature composition of *af* allows it to be licensed long-distance if the domain is transparent, as is the case of the subjunctive construction generated with *want*, but not if the domain is opaque, as is the case of indicative-selecting verbs such as *know*.

Finally, the determiner preference factor compared whether *af* versus *kol* was preferred with one of the verbs and relative to the Immediate Scope versus Long-Distance contexts. It was expected that *af* would be sensitive to the two related factors – clause-type and verb-type, meaning that it would be equally preferred in the immediate scope condition, and it would be acceptable long-distance with *want*, but not with *know*.

3.5.3 Results and discussion

The results for the immediate scope context are summarized in Table 3.1. The means are based on a 1(never used)-to-4(always used) rating scale. The low ratings for *kol* are expected considering its more formal use in negative contexts, especially when compared with *af* which is informal and widely used in everyday speech in negative contexts.

Table 3.1: The Immediate Scope condition: descriptive statistics

Condition	Mean	Nr. of answers	St.dev.	Median
1.1 <i>know+af</i>	3.52	19	.69	4.00
1.2 <i>know+kol</i>	1.00	14	.00	1.00
2.1 <i>want+af</i>	2.88	18	1.23	3.00
2.2 <i>want+kol</i>	2.05	20	1.23	1.50

The percentages of answers per rating for each condition are summarized in Table 3.2. For example, 63% of the answers¹⁶ rated *af* as “always used” in a negative factive

¹⁶The Immediate Scope condition had a total of 18 answers in questionnaire version A and 20 answers

context.

Table 3.2: The Immediate Scope condition: percentages of answers per rating

Condition/Rating	4=always	3=sometimes	2=rarely	1=never
1.1 <i>know+af</i>	63%	26%	11%	0%
1.2 <i>know+kol</i>	0%	0%	0%	100%
2.1 <i>want+af</i>	44%	22%	11%	22%
2.2 <i>want+kol</i>	20%	15%	15%	50%

A 2x2 repeated measures analysis of variance for the Immediate Scope condition, within-subjects effects, revealed a main effect¹⁷ of determiner *af* vs. *kol* ($F(1,12) = 39.47$, $p < .001$), which was dominated by an interaction between type of verb and determiner preference ($F(1,12) = 14.10$, $p = .003$). This means that *af* and *kol* were significantly preferred or dispreferred depending on the type of verb. *Kol* was 100% rejected with *know* and 50% with *want*. It is not clear why *kol* is rejected in factive contexts. The result could be due either to the formal use of *kol* in negative contexts, or, to the unavailability of a universal reading for *kol* in the Immediate Scope context.

Given the significant result presented above, a further analysis was performed, of two-tailed paired-samples *t*-tests. A significant mean effect was found in two of the pairs:

- in the determiner-*kol* pair – *kol+know* vs. *kol+want*: $t(13) = -3.63$, $p = .003$;
- in the verb-*know* pair – *know+af* vs. *know+kol*: $t(12) = 11.08$, $p < .001$.

In view of the results presented in Table 3.1 and Table 3.2, we find *kol* to be significantly dispreferred with *know* in both comparisons. The reason why *kol* is more strongly rejected in negative factive contexts is left for future consideration.¹⁸

in questionnaire version B. There was one *kol*-item and one *af*-item per questionnaire version for each type of verb, such that, for example, participants given version A had to rate *know+af* and *want+kol*, and participants given version B had to rate *know+kol* and *want+af*.

¹⁷Significance was calculated at $p = .05$

¹⁸Some ideas as to why *kol* was dispreferred have been already mentioned, such as its more formal

The results for the long-distance condition are summarized next. It was hypothesized that *af* will be unacceptable with factive *know*, but that due to domain transparency both determiners should be acceptable with volitional *want*. The means in Table 3.3 show that, as expected, *af* is unacceptable long-distance with *know*, but it is acceptable with *want*. Similar results obtain for *kol* although they are less sharp than for *af*. This discrepancy may be attributed to the fact that for *af* there is an actual dependency between *af* and the negation in terms of licensing, while the acceptability of *kol* is due to independent reasons.

Table 3.3: The Long-Distance condition: descriptive statistics

Condition	Mean	Nr. of answers	St.dev.	Median
3.1 <i>know+af</i>	1.00	67	.00	1.00
3.2 <i>know+kol</i>	1.74	74	1.04	1.00
4.1 <i>want+af</i>	2.90	76	1.16	3.00
4.2 <i>want+kol</i>	2.30	76	1.22	2.00

Comparing percentages of answers¹⁹ per rating for each long-distance subcondition, summarized in Table 3.4, we notice that the results with *want* are very similar in both the immediate scope and in the long-distance condition (compare with Table 3.2). This supports the *transparent domain* hypothesis. Although, as expected, *af* is rejected long-distance with *know*, *kol* appears to enjoy some degree of acceptability. This supports the idea that *kol*, unlike *af*, needs not be licensed by negation.

use (relative to *af*); as to why *kol* is dispreferred in particular in factive contexts in the immediate scope of negation, I speculate that the reason might be pragmatic in nature, perhaps to avoid redundancy in discourse; for example, if the background sentence stated that the speaker knows that there are no bears in the relevant context, then for that speaker to say that they know they will not meet *kol* bear, and given the more colloquially used universal interpretation for *kol*, the utterance would be considered odd. The small difference, in favor of the acceptability of *kol* under *know* in the long-distance scenarios, might be attributed to the background sentences; perhaps some of the background sentences allowed for more pragmatic “flexibility”. In future studies, this would need to be controlled for.

¹⁹The Long-Distance condition had a total of 76 answers per questionnaire version (38 speakers in total x two items of each type per list). The statistical analysis also compared ratings of questionnaire version A versus questionnaire version B to control for list effects.

Table 3.4: The Long-Distance condition: percentages of answers per rating

Condition/Rating	4=always	3=sometimes	2=rarely	1=never
3.1 <i>know+af</i>	0%	0%	3%	97%
3.2 <i>know+kol</i>	9%	16%	14%	61%
4.1 <i>want+af</i>	43%	24%	13%	20%
4.2 <i>want+kol</i>	24%	22%	14%	39%

A 2x2 repeated measures ANOVA, within-subjects effects, revealed a main effect of verb *know* vs. *want* ($F(1,64) = 70.66, p < .001$), which was dominated by an interaction between type of verb and determiner preference ($F(1,64) = 47.45, p < .001$). There was no significant effect of determiner type ($F(1,64) = .21, p = .646$). This means that the type of verb, factive versus volitional, played a significant role in the acceptability of *af* and *kol*, namely, both determiners were significantly rejected with factive *know*. In the interaction between type of verb and chosen determiner, *af* was significantly preferred with volitional *want* (43%) versus factive *know* (0%); in contrast, *kol* was rejected with *want* at a similar percentage (39%).

Further supporting these results, a two-tailed paired-samples *t*-test analysis produced significant results across the board:

- *know+af* vs. *know+kol*: $t(73) = -3.24, p = .002$; 97% out of 76 answers rejected *af* in the context of *know* in comparison with 61% rejection of *kol*;
- *want+af* vs. *want+kol*: $t(66) = -12.65, p < .001$; 43% out of 76 answers preferred *af* in the context of *want* in comparison with only 24% for *kol*;
- *af+know* vs. *af+want*: $t(75) = 3.50, p = .001$; *af* was preferred long-distance with *want*;
- *kol+know* vs. *kol+want*: $t(65) = -5.50, p < .001$; *kol* was preferred long-distance with *want*.

The results confirm the syntactic assumptions discussed earlier in the chapter with re-

spect to structural differences between the two types of verbs – factive versus volitional, and their effect, especially on the licensing of *af*.²⁰

3.6 Summary

The results obtained in the grammaticality judgment task support the predictions with respect to the licensing conditions and feature composition of *af* proposed in this chapter. *Af* is a negative indefinite, which carries an uninterpretable [Neg] feature, and therefore is dependent for its licensing on the presence of a negation operator. *Af* is a *specialized determiner* in the sense of Kratzer and Shimoyama (2002) and Kratzer (2005) – it must associate with a negation operator. In long-distance scenarios, depending on the type of matrix verb and the complement that the verb selects for (subjunctive versus indicative), a syntactic phase-collapse mechanism allows the licensing of *af* by enabling feature checking. *Kol* is examined in detail in the next chapter. For now, we conclude that *kol* needs not associate with negation. It should be noted that in sentences where the universal meaning of *kol* could have been perceived²¹, these sentences were given high acceptability ratings. The idea that *kol* is preferred under a universal interpretation points us towards examining *kol* from a *universal indefinite* point of view. This hypothesis is explored in the next chapter.

²⁰As mentioned above, it appears that there is also an effect on the acceptability of *kol*, namely that *kol* is dispreferred to a greater extent with factive *know*, but the reason for this is left for future research.

²¹These were two items, both from the long-distance condition, one with *know* and the other with *want*.

Chapter 4

Universal indefinites

4.1 Introduction and data overview

This chapter explores in detail the distributional and interpretational properties of the indefinite pronoun *kol*, which was initially introduced in Chapter 3. The following theoretical questions are addressed:

1. What are the licensing conditions for *kol*?
2. Given the observation that *kol* appears to be ambiguous between a universal and an existential, can we have a unified account for the interpretations of *kol*?¹
3. Is *kol* sensitive to particular operators?

Kol will be shown to have an indefinite-like interpretation, similar to English *any*, as well as a universal quantifier-like interpretation, similar to English *every*. This has led some researchers, for example Levy (2008), to consider *kol* as two lexical items, one an indef-

¹It should be noted that other items in Hebrew also show interpretational variability. An example is bare nouns, which may have variable interpretations, similarly to *kol*. The readings of bare nouns, which in Hebrew may be of an argumental or a predicative type, would vary depending on the selectional properties of the verb (for kind- and/or property-type arguments).

inite, and the other a quantifier. In spite of these differences in interpretation, we want to find out if it is possible to have a unified account for the various interpretations of *kol*. Differently from Levy (2008), I suggest that a unified account for *kol* (as one lexical item) is both possible and optimal. This brings us to the third question, framed within the current debate regarding indefinite pronouns crosslinguistically, namely whether *kol* is sensitive to particular operators available in the discourse, in other words, whether there is syntactic feature agreement that corresponds to particular operators in the semantics of these phrases, and with which *kol* may agree.

Descriptively, *kol* can have three interpretations:

1. Existential reading under negation (similar to English *any*),
2. Free choice and generic interpretation (similar to English *any*), and
3. Universal quantifier interpretation, corresponding to English *each*, *every*, and *all*.

I propose to analyze *kol* as a universal indeterminate pronoun. The main semantic and pragmatic function of *kol* can be attributed to what I refer to as its “distributivity” property. I propose a way of unifying the different readings of *kol* under this notion: (i) the free choice interpretation can be understood as distribution over propositional alternatives, (ii) the generic reading can be interpreted as distribution over instances of a kind, and (iii) the universal reading in episodic contexts can be defined as distribution over a contextually salient set of individuals.

As shown in the previous chapter, the existential interpretation of *kol* is available in a variety of negative contexts. An example is repeated in (1).

- (1) a. *kol* xatul lo hofiya.
 KOL cat NEG appeared
 ‘No cat appeared.’

It is not the case that a cat appeared.

- b. lo axalti kol ugia.
 NEG ate.1sg KOL cookie
It is not the case that I ate a cookie.

We have also observed that in the absence of negation *kol* has a universal interpretation, (2).

- (2) *kol* xatul hofiya.
 KOL cat appeared
 ‘Each and every cat appeared.’

Further examples of the universal interpretation of *kol* are illustrated in (3). *Kol* can combine with a bare singular indefinite noun phrase, in which case it triggers a distributive reading, (3a), corresponding to the meaning of *each and every*. In (3a), we get a reading where for each child in the domain, there was one cookie that s/he ate. *Kol* can also combine with a singular or plural definite noun phrase, (3b,c), in which case it has a collective reading, meaning *all*².

- (3) a. *kol* yeled axal ugia. [*kol* + indef.N.sg]
 KOL child ate cookie
 ‘Each and every child ate a cookie.’
- b. Dani axal et *kol* ha-uga. [*kol* + def.N.sg]
 Dani ate ACC KOL the-cake
 ‘Dani ate the whole cake.’
- c. *kol* ha-yeladim axlu ugiot. [*kol* + def.N.pl]
 KOL the-children ate cookies
 ‘All the children ate cookies.’

²I will not discuss these data in the present work; they are added for completeness.

The free choice interpretation of *kol* is illustrated in (4).

- (4) ani muxan lagur be-*kol* dira.
 I willing live.INF in-KOL apartment
 ‘I’m willing to live in any apartment.’

Finally, the generic interpretation of *kol* is shown in (5).

- (5) *kol* dov ohev dvaš.
 KOL bear likes honey
 ‘Any/Every bear likes honey.’

Kol is acceptable in non-negative downward entailing contexts, such as *rarely*, *doubt*, and *if*-clauses.³ In these contexts, *kol* usually receives a universal interpretation, (6b,c,e.ii); however, note that an existential interpretation is also possible, (6a,e.i), if slightly dispreferred by native speakers.

- (6) a. ?Le-itim rehokot hu mekabel *kol* haxlata.
 rarely he takes KOL decision
 ‘Rarely does he take any decision.’
It is rare that he takes a decision (he usually doesn’t take decisions).
- b. Rina be-safek še- *kol* arnav yekabel gezer.
 Rina in-doubt that- KOL rabbit get.FUT carrot
Rina doubts that each and every rabbit will get a carrot.

³Six native speakers provided judgments for these data, except for (d) which is an example from Lev (2003).

- c. Rina be-safek še- itnu pras le-*kol* zamar.
 Rina in-doubt that- give.FUT prize to-KOL singer
Rina doubts that each and every singer will receive a prize.
- d. im axalta *kol* agas tekabel vitamin c.
 if ate.2sg.m KOL pear receive.3sg.m.FUT vitamin C
 ‘If you ate any pear, you’ll get vitamin C.’
If you ate a pear, ...
 (modified from Lev, 2003:4)
- e. ?im axalta *kol* ugia, lo tihie raev le-aruxat erev.
 if ate.3sg.m KOL cookie NEG be.3sg.m.FUT hungry to-meal evening
 ‘If you ate any cookie, you won’t be hungry for dinner.’
 (i) *If you ate a cookie, ...* (a bare noun was suggested for this reading)
 (ii) *If you ate each and every cookie, ...* (*kol* with a definite plural noun is preferred here)

In the scope of quantified phrases such as *at least* and *at most*, only the universal reading of *kol* is acceptable. The same holds for question environments.

- (7) lexol hayoter /lefaxot šloša anašim rau *kol* seret ba-festival.
 at most /at least three people saw KOL movie at-the-festival
 ‘At most/at least three people saw each and every movie at the festival.’

A preliminary generalization: In the presence of negation, *kol* receives an existential reading. In the absence of negation, *kol* receives a universal reading. The latter case includes generic and free choice environments. Understood in the sense of Kratzer and Shimoyama (2002), *kol* appears to be similar to Japanese indeterminate pronouns in being able to associate with different sentential operators. This generalization will be modified at a later point in the chapter, where an analysis of *kol* is proposed.

Assuming for now that *kol* may have both an existential and a universal reading, next, we consider *kol* in comparison with English *any*, a determiner quite similar to *kol*, in that they both exhibit existential-universal interpretational variability.

4.1.1 *Kol* and *any*

The ambiguity of English *any* is illustrated in the contrast in (8) versus (9); in (8) *any* has a polarity sensitive (existential) reading, while in (9) it is interpreted generically (universal reading) (Horn, 2005:180).

- (8) a. I didn't see any pigs.
b. Can any pigs fly?
- (9) a. I can catch any raven.
b. Can ANY raven fly?

This ambiguity has sparked three major theoretical approaches in the literature on English *any*:

- The first, universal quantifier approach, advocated by Horn (1972, chapter 3) and LeGrand (1975), among others, views *any* unambiguously as a wide-scope universal quantifier.
- The second, ambigulist (quantificational) approach, advocated by Horn (1972, chapter 2), Ladusaw (1979), Carlson (1981), Linebarger (1981) and Dayal (1998), a.o., suggests that there are two lexical items *any*, an existential quantifier and a universal quantifier.
- The third approach, Kadmon and Landman (1993), Horn (2005), a.o., consider *any* as a Heimian indefinite (a bound variable, with no quantificational force) and suggest that a unified account for *any* under this approach is both feasible and

more explanatory.

For *kol*, whose function covers more interpretations than English *any*, the above debate is also quite pertinent. English has the unambiguous universal quantifier *every*; in Hebrew the meaning of this quantifier is expressed via *kol*. English also has a distributive determiner *each*, and its function is also fulfilled by *kol*. Finally, English has the controversial *any* on whose semantics researchers have difficulty agreeing, and *kol* appears to correspond to this item as well.

A short discussion of Hebrew *kol* can be found in Levy's (2008) dissertation on English *any*, where she argues in favor of a Kadmon and Landman (1993) account for *any*. With respect to the different types of *kol*, Levy (2008:166) explores three possibilities:

1. *Kol* is lexically unambiguous and its uses are a reflex of a universal quantifier;
2. *Kol* is lexically ambiguous, with polarity sensitive *kol* considered a reflex of an existential quantifier, and free choice *kol* considered a reflex of a universal quantifier on a par with universal *kol*;
3. Quantificational *kol* is universal, while polarity sensitive *kol* and free choice *kol* are reflexes of the same lexical item.

The first option is the universal quantifier approach. The second option parallels the ambiguit quantificational approach, where we have two separate quantifiers. The third option assumes a universal quantifier *kol*, meaning *every*, and an existential indefinite *kol*, which can have two readings – polarity sensitive and free choice.

Basically, we need to understand whether there is one lexical item *kol* that is a regular universal quantifier, and another lexical item *kol*, an indefinite whose meaning is linked to contextual properties. In order to decide which of the above options makes sense for *kol*, Levy uses Horn's (1972) tests for identifying the quantificational force of *kol* (or lack thereof); the argumentation runs parallel to that of English *any*. I return to this comparison shortly.

Next, I show that quantificational approaches cannot account for *kol*. The idea that I defend in this thesis is that we have one lexical item *kol*, a bound variable, which can perform different semantic/discourse functions.

4.1.2 Unambiguous universal quantification

The proponents of the unitarian-universalist approach (similarly to other unified approaches) aim at reducing unnecessary lexical ambiguity. In this framework, *any* has been considered a wide-scope universal (Reichenbach, 1947; Quine, 1960), and, later on, a universal determiner taking immediate scope with respect to its trigger, be it a ‘ \neg ’, ‘ \diamond ’, or ‘Gen’ operator.

- (10) a. I can read any book.
 b. $\forall x[(\text{book},x) \rightarrow \diamond(\text{I-read},x)]$

This approach, however, has proven to be empirically wrong (Horn, 2005:180). For example, (11a) cannot have the interpretation in (11b); it must receive the interpretation in (11c).

- (11) a. I wonder if Susan married anybody.
 b. $\#\forall x(\text{I wonder if Susan married } x)$
 c. $(\exists x)(\text{Susan married } x)$ (Fauconnier, 1979:297-298)

In this scenario, Hebrew relies on the unambiguously existential indefinite determiner *mišehu* (who-INDEF) ‘someone’ (and does not use *kol*). The use of *any* in this case contradicts the unambiguous universal hypothesis by showing existential-like properties. The fact that Hebrew uses an existential determiner for (11) instead of *kol* may suggest that *kol* cannot introduce existential quantification, but that it is used for a ‘universal’ function. As we will see later on, we find this disambiguation strategy in other cases as

well. The two options available in Hebrew for expressing the meaning intended in (11) are given in (12).

- (12) a. ani toha im Suzan hitxatna im *mišehu*/**kol*.
 I wonder if Susan married with who-INDEF/KOL
 ‘I wonder if Susan married somebody.’
- b. ani toha im Suzan hitxatna im *kulam*.
 I wonder if Susan married with KOL.3pl
 ‘I wonder if Susan married them all (everyone).’

Furthermore, the unambiguous universal approach cannot account for instances of polarity sensitive *any* such as (13) (see also (11)).

- (13) I didn’t see any bird.

(13) can only have a polarity sensitive interpretation; if the negation is removed, the sentence becomes ungrammatical. In contrast, in Hebrew, the sentence is grammatical both with and without the negation, with different readings. In the scope of negation, *kol* has an existential reading, (14a), while in the absence of negation, it has a universal reading, (14b). This data is key to rejecting the unambiguous universal quantification approach in the case of *kol*.

- (14) a. lo raiti *kol* čipor.
 NEG saw.1sg KOL bird
I didn’t see a bird. (*af* was suggested as an alternative for *kol*)

b. raiti kol čipor.

saw.1sg KOL bird

‘I saw every bird.’ (*kol* bears emphatic stress)

Scenario: At a bird sanctuary, my friend who wanted to see all the birds announces that she has now seen each and every bird.

It should be noted that (14b) is considered as the marked form. The default form would be an utterance where *kol* modifies a definite plural noun phrase (e.g. *kol/all the birds*). Pragmatic input plays a crucial role here.

These data cannot be explained if we assume the unambiguist universal approach. We conclude, for now, that this approach is insufficient to explain the *kol* facts.

Further evidence against the unambiguist hypothesis comes from Levy (2008), who claims that *kol* cannot be interpreted as a wide scope universal in downward entailing contexts, (15a), nor in intensional negative contexts, (15b) (Levy, 2008:171). This is meant to show that *kol* cannot have universal quantificational force.

(15) a. ani be-safek im/še- yeš kol kešer beyn ha-mikrim.

I doubt if/that there-is KOL connection between the-cases

‘I doubt that there is any connection between the cases.’

There is no connection between the cases.

b. lo hugša kol hača’a.

NEG submitted(passive) KOL proposal

‘No offer was submitted.’

(modified from Levy, 2008:171)

Finally, the unambiguist proponents cite certain environments which are known for their preference for universals (adverbs such as *almost* and *absolutely*) versus existentials (*there*-insertion), (16).

- (16) a. Absolutely anyone/everyone/*someone can read this book. (free choice, universal reading only)
- b. If there is anyone/someone/*everyone who can cook this fish, it is Alton. (negative polarity, existential reading only)

In Hebrew, *kol* has a free choice reading in an “absolutely” scenario (17a), and is disallowed in the existential *there*-construction (17b).

- (17) a. *kol-exad* yexol likro et ha-sefer ha-ze.
KOL-one can read.INF ACC the-book the-this
‘Anyone can read this book.’
- b. im yeš *mišehu/* **kol-exad* še- yexol levašel et ha-dag
if there-is who-INDEF/ KOL-one that- can cook.INF ACC the-fish
ha-ze, ze Alton.
the-this, this Alton
‘If there is someone/anyone who can cook this fish, it is Alton.’

The data in (16), which do not appear to support the unambiguous universal quantification hypothesis with respect to *any*, are discussed next. *Kol* data is added for comparison.

4.1.3 Ambiguous quantification

Data showing that *any* is able to receive either a universal, or an existential reading, or both, has motivated the ambiguitist, but still quantificational, approach to *any*. According to this approach, there are two *anys* – one, a universal quantifier, the other, an existential quantifier. Taking this approach, Carlson (1981) uses three tests (four, if we

take into account scope ambiguities) to show the quantificational nature of *any*.

The first test involves *any* in the context of adverbs such as *nearly*, *almost* and *absolutely*, which are known for their preference for universals. These adverbs allow free choice (FC) *any* but not polarity sensitive (PS) *any*.

- (18) a. Nearly anyone can ride a bike. [FC]
 b. #Did almost anyone just walk into the room? [*PS]
 (Carlson, 1981:9)

In the scope of *almost*, *kol* also receives a universal reading:

- (19) a. kim'at kol student kibel ugia.
 almost KOL student received cookie
 'Almost every student received a cookie.'
- b. ha-talmid še- moče kim'at kol šgiya, yekabel pras.
 the-student that- finds almost KOL mistake, receive.FUT prize
 'The student who finds almost every mistake will receive a prize.'
- c. kim'at kol talmid še- yeš lo inyan be-semantica yexol
 almost KOL student that- there-is to-him interest in-semantics can
 lehirašem la-kurs ha-ze.
 register.INF to-the-course the-this
 'Almost every student who has an interest in semantics can register for this course.'

However, Horn (2005) shows that it is not always the case that 'universal' adverbs require universals; sometimes existential readings are allowed, as for PS-*any* in (20a):

- (20) a. If you eat absolutely any meat, you're not a vegetarian. [PS]
 b. If you eat absolutely any meat, you're not a Kosher Jew. [FC]
 (Horn, 2005:196)

(20) can be taken as evidence for two things; first, it was assumed that the universal reading is related to the adverb which introduces universal quantification, but this appears not to be the case (universal *absolutely* cannot be considered responsible for the existential (PS) vs. universal (FC) meaning of *any*); second, the universal and the existential flavors of *any* appear to be context dependent (whether the speaker means 'piece of' or 'type of' can only be understood from the context). In Hebrew, *kol* cannot be used in the above scenarios – an existential determiner would be used instead.

The second test discussed by Carlson (1981) in support of a quantificational approach to *any* (or at least not in favor of a unified approach to *any*) shows that when *any* precedes numerals, FC-*any* is licensed, but PS-*any* is not.

- (21) a. **Any three men** could move that stone. [FC]
 b. #Did **any five waiters** just walk in? [*PS]
 (Carlson, 1981:9)

In this case, Hebrew disambiguates by using *kol* for the free choice universal reading, (22a), and *eyzešehu* (which-INDEF) 'some or other' for the existential reading, (22b). It should be noted that (22b) has an actuality entailment – we are asking about something that has already happened and therefore a free choice reading seems at odds with the five waiters having been identified by the hearer if the event has indeed taken place. *Eyzešehu* expresses indifference on the speaker's part – the speaker wants to know if five waiters came through and indifference is expressed with respect to their identity.

- (22) a. ***kol*** **šloža** **anašim** yexolim lehaziz et ha-even ha-hi. [FC]
 KOL three people can.pl move.INF ACC the-stone the-def.3sg.f
 ‘Any/Every three people can move that stone.’
- b. ha-im nixnesu ha-rega ***eyzešehem*** **xamiša** **melčarim?**
 Q came-in the-moment which-INDEF five waiters
 ‘Did any five waiters just walk in?’

We have seen this strategy before (example (12)) – when the context requires an unambiguously existential reading, *kol* is not used; instead, an existential indefinite is the preferred choice. This test (involving numerals preceding an *any*-phrase) is therefore inconclusive with respect to *kol*.

The third test mentioned by Carlson has *any* in the context of an amount relative, which, similarly to the contexts above, licenses FC-*any* but not PS-*any*.

- (23) a. **Any man there is** can move that stone. [FC]
- b. #Did **any man there is** just ring the doorbell? [*PS]

In the above scenario, *kol* can only have a free choice, universal reading, as in (24a), and so, again, it does not show the “quantificational variability” attributed to *any* by Carlson. This indicates that *any* and *kol* have different (semantic/pragmatic) functions.

- (24) a. ***kol*** **iš** **kayam** yexol lehaziz even zo.
 KOL person exists can move.INF stone this
 ‘Any man there is can move this stone.’

- b. #Ha-im *kol* *iš* *kayam* čilčel ba-pa'amon?
 Q KOL person exists rang the-doorbell
 'Did every person there is just ring the doorbell?'

The problem with this test is that it specifically uses a type of modification of the *any* noun phrase that Carlson (1981:10) seeks to avoid, and which leads to a subtriggering effect (LeGrand 1975), meaning that if we remove the modifier, (23a) allows both readings and (23b) becomes felicitous, as in (25).

- (25) a. **Any man** can move that stone. [FC/PS]
 b. Did **anyone** just ring the doorbell? [FC/PS]
 c. Did **any man** just ring the doorbell? [PS]

Carlson employs these three tests in order to show that FC-*any* and PS-*any* are licensed in different environments and should therefore be considered as two lexical items; he identifies the universal property of these contexts as licensing FC-*any*. The following are contexts in which FC-*any* is licensed. The English examples (in italics in (26)) are from Carlson (1981:10-11). For comparison, I glossed in the availability and readings for *kol* in these scenarios. In (26f,g), *kol* cannot have a free choice reading and it is disallowed in (26f) and dispreferred in (26g).

- (26) FC-*any* in simple sentences:
 a. *kol* *exad* yexol lehiot ba-xeder ha-hu. (poss. modals)
 KOL one can/may be in-the-room the-def.3sg.m
Anyone could be in that room.

- b. *kol* yanšuf čad axbarim. (generic sentences)
 KOL owl hunts mice
Any owl hunts mice.
- c. Bob mexabev et *kol* exad. (stative verbs)
 Bob likes ACC KOL one
Bob likes anyone.
- d. *kol* kelev hu dey xaxam. (adjectives)
 KOL dog he quite intelligent
Any dog is reasonably intelligent.
- e. *kol* xatul hu yonek. (predicate nominals)
 KOL cat he mammal
Any cat is a mammal.
- f. John mexapes **kol* xad-keren. (verbs with intensional objects)
 John looks-for KOL one-horn
John is looking for any unicorn.
- g. kxi ?*kol* apple. (imperatives)
 take KOL apple
Take any apple.

Ambiguous *any* is found in contexts where PS/existential-*any* and FC-*any* overlap, exemplified in (27).

- (27) a. If anyone can move that stone, I'll be amazed.
 b. Does anyone like Bob?
 c. I doubt that anyone could be at the door.

- d. Thanks be to God that anyone likes my novels.
(Carlson, 1981:12)

In these scenarios, shown for Hebrew in (28), *kol* cannot be used. To express the existential and/or free choice readings of these sentences, the existential determiner *mišehu* ‘someone, (anyone)’ is used.

- (28) a. im *mišehu* yexol lehaziz et ha-even, ufta. [FC]
if who-INDEF can move ACC the-stone, surprise.FUT.1sg
‘If anyone can move the stone, I’ll be amazed.’
- b. ha-im *mišehu* mexabev et Bob? [∃ or FC]
Q-particle who-INDEF likes ACC Bob
‘Does anyone/someone like Bob?’
- c. ani be-safek še- yexol lehiot *mišehu* ba-delet. [∃]
I doubt that- may be who-INDEF in-the-door
‘I doubt that someone could be at the door.’ (I don’t think that anyone could be at the door)
- d. toda la-el še- *mišehu* ohev et ha-sfarim šeli. [∃]
thanks to-the-God that- who-INDEF likes ACC the-books of-mine
‘Thanks be to God that someone/anyone likes my novels.’

Finally, there are contexts where the existential (polarity sensitive) reading of *any* seems to emerge:

- (29) a. Bob ran faster than anyone did.
b. Bob is unlikely to kick anyone.
c. Shooting at anyone ought to be illegal.

- d. For Bob to eat anything now would be impossible.

(Carlson, 1981:13)

In Hebrew, we find again that the existential reading can only be expressed via an existential pronoun, except for (30a)⁴, in which a free choice reading is possible for *kol*:

- (30) a. Bob rač yoter maher me-*kol-exad* axer.
 Bob runs more fast from-KOL-one different
 ‘Bob runs faster than anyone else.’
- b. lo savir še- Bob iv’at be-*mišehu*.
 NEG probable that- Bob kick.FUT in-who-INDEF
 ‘It’s improbable that Bob will kick someone/anyone.’
- c. lirot be-*mišehu* čarix lehiot lo xuki.
 shoot.INF in-who-INDEF must be NEG legal
 ‘Shooting someone/anyone should be illegal.’
- d. ze ihie bilti-efšari bišvil Bob le’exol *mašehu* axšav.
 this be.FUT not-possible for Bob eat.INF what-INDEF now
 ‘It would be impossible for Bob to eat something now.’

Carlson concludes that, at least by taking a quantification approach to *any*, the two interpretations cannot be unified. Further tests that have been used in the literature (e.g. Lee and Horn 1995, Giannakidou 2001, Zabbal 2006) in order to distinguish between existential versus universal quantification with indefinite noun phrases are

⁴Note that *kol* may have a free choice reading in comparatives. This type of construction will not be discussed here; I will only point out that the free choice reading may be due to the modifier *axer* ‘different’, which implies distribution over entities.

discussed next.

The **widest-scope/relative scope** test. Existentials can scope over intensional verbs, (31a), but *kol* cannot, (31b); therefore, *kol* cannot be considered an existential quantifier.

- (31) a. John is looking for a unicorn. [$\exists > \textit{look-for}; \textit{look-for} > \exists$]
 b. John mexapes **kol* xad-keren.
 John is-looking-for KOL unicorn
 ‘John is looking for a unicorn.’

Universals can scope over other quantifiers or negation, but *kol* cannot. If *kol* were a universal quantifier, then it would have been able to scope over an intensional operator in (31) and an existential in (32). As these examples show, it cannot; therefore *kol* cannot be considered a universal quantifier.⁵

- (32) a. student mača *kol* šgiya. [$\# \forall > \exists$]
 student found KOL mistake
There is a particular student who found all the mistakes.
#Each mistake was found by a different student.
 b. *mišehu* ohev et *kol* exad. [FC *kol*]
 who-INDEF likes ACC KOL one
 ‘Someone likes anyone.’
There is a particular person for whom each and every other person is likable.

⁵*Kol* can only receive wide scope relative to negation if it is focused. This issue is beyond the scope of the present work.

The **donkey anaphora** test. Universals cannot license donkey anaphora, and neither can *kol*. Compare (33a) where *kol* is unacceptable, with (33b), where a bare noun is perfectly acceptable (similarly to English *a* noun phrases).

- (33) a. im le-**kol* arnav yeš gezer, hu oxel oto.
 if to-KOL rabbit there-is carrot, he eats it
 #‘If each/every rabbit has a carrot, he eats it.’
- b. im le-arnav yeš gezer, hu oxel oto.
 if to-rabbit there-is carrot, he eats it
 ‘If a rabbit has a carrot, he eats it.’

However, note that this is a tricky test for universals. In English, free choice *any* is fine in the scenario in (33a).

The **there-construction** test. Usually, only existential indefinites can occur in *there*-constructions. *Kol* can sometimes appear in this type of construction, (34a), and sometimes cannot, (34b). The existential (and also free choice) flavor of *kol* is illustrated below and appears to be related to the interaction between an existential operator (*there*-construction) and a downward entailing operator – *doubt* in (34a) and negation in (34c). The licensing of *kol* also depends on the type of embedding verb – it is not licensed with factive verbs, (34b), but if a negation intervenes between the factive verb and *kol*, then *kol* is licensed, (34c).

- (34) a. ani be-safek še- yeš *kol* kešer beyn ha-mikrim.
 I doubt that- there-is KOL connection between the-cases
 ‘I doubt that there is any connection between the cases.’
 (modified from Levy, 2008:170)
- (i) Free choice flavor: *any type of connection is an option*;
 (ii) Existential flavor: *there is no connection*.

- b. #ani yoda'at še- yeš **kol* kešer beyn ha-mikrim.
 I know that- there-is KOL connection between the-cases
 #‘I know that there is any connection between the cases.’
- c. ani yoda'at še- eyn *kol* kešer beyn ha-mikrim.
 I know that- there-is-NEG KOL connection between the-cases
 ‘I know that there isn’t any connection between the cases.’
 (i) Free choice flavor: *no type of connection is an option*;
 (ii) Existential flavor: *there is no connection*.

Consideration of example (34) might lead one to ask whether *kol* is able to associate with an existential operator. However, the contrast in (35) shows that *kol* is not licensed in the immediate scope of an existential operator, but it is fine if a negation intervenes. These facts are crucial for our understanding of the licensing conditions for *kol*, which I discuss in the next section.⁶

- (35) a. #yeš *kol* sakana be-štiat maim me-ha-berez.
 there-is *kol* danger in-drinking water from-the-tap
 #‘There is any danger in drinking tap water.’
- b. eyn *kol* sakana be-štiat maim me-ha-berez.
 there-isn’t KOL danger in-drinking water from-the-tap
 ‘There isn’t any danger in drinking tap water.’

(35) shows that *kol* cannot be attributed existential or universal quantificational force.

Horn (2005:181) also points out that the ambiguous quantification approach does not

⁶I will propose that *kol* is specified for a [V] feature, which needs to be valued by the matching feature of a universal operator. In (35a), the existential operator acts as an intervener and *kol* cannot be licensed.

explain *any* in contexts such as free choice imperatives expressing requests, suggestions or invitations. Horn suggests that since the interpretation of (36) cannot be attributed to either existential or universal quantification contributed by *any*, it would be better to consider *any* as a Heimian indefinite (i.e. a variable).

- (36) a. Pick any card. \neq Pick every card.
 b. Pick any card. \neq Pick some card.

In the case of (36), Hebrew would use one of the following options: (i) a bare noun, (37a), (ii) an existential indefinite determiner – *eyze(šehu)* ‘some (or other)’, (37b), or (iii) a free choice indefinite determiner – *kolšehu* ‘any whatsoever’, shown in (37c). For the *any* reading, *kol* is acceptable with emphatic stress, (37d).

- (37) a. tivxeri klaf. = Pick a card.
 pick.IMP card
 b. tivxeri eyze(šehu) klaf = Pick some card.
 pick.IMP which(INDEF) card
 c. tivxeri klaf kolšehu = Pick any card.
 pick.IMP card KOL-INDEF
 d. tivxeri kol klaf = Pick any card.
 pick.IMP KOL card

If *any* and *kol* sometimes have, sometimes lack, and sometimes change quantificational force, a more consistent approach would be to consider them as indefinites in the sense of Heim (1982). For English *any*, such an approach has been put forward by Partee (1986), Kadmon and Landman (1993), and Horn (2005), a.o., who have argued that there must

be a common semantic property unifying the two *any* “while distinguishing them from other operators that lack this property, e.g. as brought out by the distribution of postnominal *whatsoever* and *at all*” (Horn, 2005:182).

- (38) a. I didn’t see {anybody/*everybody/*somebody} whatsoever. [PS]
 b. I saw {*everyone/*someone/no one} at all. [PS]
 c. {Anybody/*everybody/*somebody} whatsoever came to the party. [FC]
 d. If {anybody [PS or FC!]/*everybody/*somebody} at all can swim the channel, I can.
 (Horn, 2005:182)

Horn points out that examples such as (38), in which some adverbs can reinforce both uses of *any*, pose a problem for the ambiguit approach in that no other operator, existential or universal, can be modified this way.

In contrast, *kol* is not sensitive to this type of modification. Hebrew disambiguates (38d) by using two different items – an existential, *mišehu* (who-INDEF) ‘someone’ for the polarity sensitive reading, and *kol exad* ‘anyone’ for the free choice reading.

- (39) a. If {anybody [PS or FC!]/*everybody/*somebody} can swim the channel, I can.
 b. im **mišehu** yexol laxčot et ha-teala be-sxia, ze ani.
 if who-INDEF can cross ACC the-channel in-swimming, this I
 ‘If there’s someone who can cross the channel, it’s me.’ [PS]

- c. im **kol** **exad** yexol laxčot et ha-teala be-sxia, gam ani
 if KOL one can cross ACC the-channel in-swimming, also I
 yexol.
 can
 ‘If everyone can cross the channel, so can I.’ [FC]

Even though this modification cannot make the same point for *kol*, I will show that the different readings of *kol* can be unified by taking a similar approach, namely that of finding the property through which all instances of *kol* can be defined.

In the next section, we look at Levy’s (2008) proposal for a Kadmon and Landman (1993) style account for *kol*. Levy proposes an indefinite approach to *any* and *kol-1*, and something else (universal quantification) for *kol-2*.

4.1.4 Indefinite *kol*

Kadmon and Landman (1993) propose to treat English *any* as a Heimian indefinite. They define the function of *any* in the following way:

- (40) *Any* Common-Noun (CN) = the corresponding indefinite NP *a* CN with additional semantic/pragmatic characteristics (widening, strengthening) contributed by *any*.

(Kadmon and Landman, 1993:357)

Kadmon and Landman claim that *any* adds to the meaning of the indefinite NP the property of *widening* by which *any* contributes a reduced tolerance of exceptions to the context in which it appears.

- (41) Polarity Sensitive-*any*
- a. Every man who has matches is happy.
 - b. Every man who has *any* matches is happy.
- (Kadmon and Landman, 1993:359)
- (42) Free Choice-*any*
- a. An owl hunts mice.
 - b. Any owl hunts mice.
- (Kadmon and Landman, 1993:359)

Sentences (41b) and (42b) rule out exceptions more strongly than (41a) and (42a) do – e.g. *any matches* implies even wet or broken ones. The semantic operation associated with *any* is the widening of the domain of quantification, defined in (43).

- (43) Widening: In an NP of the form *any* CN, *any* widens the interpretation of the common noun phrase along a contextual dimension.
- (Kadmon and Landman, 1993:361)

Kadmon and Landman also propose a pragmatic constraint, lexically associated with *any*, which they refer to as *strengthening*. This constraint states that the semantic operation associated with *any* must create a stronger statement, and the combination of the widening effect and the strengthening constraint will determine the actual distribution of *any*. ‘Stronger’ here is defined in terms of entailment, (44), and illustrated in (45).

- (44) Strengthening: *any* is an element that must strengthen the statement it occurs in, that is, the semantic operation associated with it must create a stronger statement. *Any* is licensed only if the widening that it induces creates a stronger statement, i.e., only if the statement on the wide interpretation entails the

statement on the narrow interpretation.

(Kadmon and Landman, 1993:369)

- (45) *I don't have any cookies.* [Wide interpretation of the indefinite NP modified by *any*: I don't have any cookies, chocolate or otherwise.] \Rightarrow *I don't have cookies.*
[Narrow interpretation of the indefinite NP: I don't have chocolate cookies.]

The strengthening constraint on *any* requires the context in which *any* is licensed to satisfy a downward inference pattern (Kadmon and Landman, 1993:370).

Levy's proposal states that quantificational *kol*₍₁₎ is universal, while *kol*₍₂₎ on its polarity and free choice uses is a separate lexical item. Levy basically defends Kadmon and Landman's account for a unified *any* and takes *kol*₂ as its parallel. On this view, PS/FC-*kol* is an indefinite with no quantificational force of its own, which is bound by a quantifier provided by the context. Levy claims that this approach explains why we have an existential reading of *kol* in possibility statements, (46a,b), and a universal reading of *kol* in generic and future statements, (46c,d) (Levy, 2008:173).

- (46) a. ata yexol lalexet le-*kol* makom.
you can go.INF to-KOL place
'You can go to any place.'
- b. hu asuy lehagiya be-*kol* rega.
he may arrive.INF in-KOL moment
'He may arrive any moment.'
- c. ani a'ane al *kol* še'ela be-sof ha-šur.
I answer.FUT on KOL question in-end the-class
'I will answer any question at the end of the class.'

- d. *kol* yeled yode'a et ze.
 KOL child knows ACC this
 'Any child knows this.'
 (modified from Levy, 2008:173-4)

In contrast to Levy's proposal, I consider these data to illustrate the universal free choice reading of *kol*; they also show that *kol* cannot be considered a universal quantifier. More examples are provided in (47). Note that all these examples involve permission or suggestion.

- (47) a. ata yexol lačet me-*kol* delet.
 you can exit.INF from-KOL door
 'You can exit by any door.'
- b. ata yexol lehagiya be-*kol* zman.
 you can arrive.INF in-KOL time
 'You can arrive at any time.'
- c. ata yexol latet *kol* davar le-*kol* exad be-matana.
 you can give.INF KOL thing to-KOL one in-gift
 'You can give anything to anyone as present.'

Although Levy's account makes a case for a Kadmon and Landman approach for an indefinite *kol* (with a domain widening property), while also positing a second *kol* (without a domain widening property) akin to the universal quantifier *every*, we have seen evidence that the quantificational force of *kol* is hard to pinpoint. For this reason, in the next section, I propose a unified account for *kol*, not in terms of domain widening, because, although certain instances of *kol* may be viewed as widening the domain of the modified noun phrase, this is not sufficient to explain its licensing conditions. I suggest that all instances of *kol* may be accounted for if we consider it as an indefinite

specialized for a $[\forall]$ feature. A semantics for *kol* would need to account for: (i) its universal reading in episodic contexts, where *kol* appears to parallel English *each* and *every*, (ii) its generic reading, (iii) its existential-like reading under negation, and (iv) its free choice reading, observed in the context of possibility modals.

4.2 Puzzling out *kol*

In the framework of Kratzer and Shimoyama (2002), indeterminate pronouns introduce sets of alternatives that expand until they are bound by an operator. In some languages, indeterminate pronouns can be bound by any available operator (the first they encounter), as is the case in Japanese, while in other languages, indeterminate pronouns are specialized in the sense that they can only agree with particular operators. This has been shown to be the case for German *irgendein*, discussed in Kratzer and Shimoyama (2002) and Kratzer (2005), which can only be bound by an existential operator. For Spanish, for example, Menéndez-Benito (2005b) shows that *cualquier* is selected by a universal operator, and Alonso-Ovalle and Menéndez-Benito (e.g. 2008) show that *algún* is selected by an existential operator. I suggest that Hebrew indeterminate pronouns also associate with particular operators; in the case of *kol*, for example, the individual alternatives introduced by *kol* are bound by a universal operator.

Different additional operators have been proposed in order to derive truth conditions for indeterminate pronouns. Menéndez-Benito (2005b) proposes an *exclusiveness operator* to derive the free choice interpretation and the distribution of *cualquier*. Aloni (2007) argues that for English *any* and its Italian counterparts, an *exhaustivity operator* captures their distribution by including subtriggered cases alongside simple assertions and modal sentences.

Since *kol* appears to have the property of widening the domain of the noun phrase it modifies, as shown in (48),

- (48) a. *ata yexol lalexet le-kol makom.*
 you can go.INF to-KOL place
 ‘You can go to any place.’
- b. *kol dov ohev dvaš.*
 KOL bear likes honey
 ‘Any/every bear likes honey.’

we want to compare it with other indefinites, such as *irgendein*, which has been attributed the semantics of domain widening indefinites (Kratzer and Shimoyama, 2002:15).

4.2.1 *Kol* and *irgendein*

Irgendein receives the semantics given in (49b) (Kratzer and Shimoyama, 2002:15).

- (49) a. Simple indefinites: For all possible worlds w and variable assignments g :
 $g(D') \subseteq D$, where D is the set of possible individuals
 $[[ein_{D'} mann]]^{w,g} = \{x: x \text{ is a man in } w \ \& \ x \in g(D')\}$
- b. Domain widening indefinites: For $[[\alpha]]^{w,g} \subseteq D_e$
 $[[irgend-\alpha]]^{w,g} = \{x: \exists g'[x \in [[\alpha]]^{w,g'}]\}$
 $[[irgend-[ein_{D'} mann]]]^{w,g} = \{x: \exists g'[x \text{ is a man in } w \ \& \ x \in g'(D')]\} =$
 $\{x: x \text{ is a man in } w\}$

While the denotation of a simple indefinite gives us a subset of its noun set (i.e. the set denoted by *a man* is a subset of the set of *men*), which can also be a singleton, the denotation of a domain widening indefinite such as *irgendein* cannot be a singleton (unless the domain contains only one individual) and its denotation must be the set of all *men*.

In addition, unlike *irgendein*, which cannot associate with (be licensed in the presence of) [V] or with [Neg], as shown in (50a) and (50b), respectively, *kol* is licensed both in the presence of [V], (51a), and in the presence of [Neg], (51b).

- (50) a. *Irgendeins* von diesen Kindern kann sprechen.
 Irgend-one of these children can talk
 (i) ‘One of those children can talk.’ (the speaker doesn’t know or care which one it is).
 (ii) ‘One of those children is allowed to talk.’ (any one is a permissible option).
 (iii) *Any one of those children can talk. (in the sense of ‘any one of those children has the ability to talk.’)
- b. *Ich hab’ nicht *irgendwas* gelesen.
 I have not irgendet-what read
 ‘I didn’t read anything.’
 (Kratzer and Shimoyama, 2002:23-24)
- (51) a. *kol* *exad* me-ha-yeladim yexol ledaber.
 KOL one of-the-children can talk.INF
 (i) *One of the children can talk (the speaker does not know or care which one it is). kol=each*
 (ii) *One of the children is allowed to talk (any one is a permissible option). kol=each*
 (iii) *Any one of the children has the ability to talk. (generic reading)*
- b. lo karati *kol* *davar*.
 NEG read KOL thing
I didn’t read anything (not a thing).

Kol is also licensed in characterizing statements, meaning in the presence of a generic operator, (52). The generic operator is considered a modalized universal quantifier (Chierchia 1998:366, a.o.).

(52) Dani kore *kol* ma'amar.

Dani reads KOL article

It is a characteristic of Dani that he reads all articles he comes across.

As a preliminary proposal, and leaving aside the negation cases (for now), I consider *kol* as a universal indeterminate pronoun which introduces a set of individual alternatives. These alternatives expand via Hamblin functional application into a set of propositional alternatives. The propositional alternatives are then bound by a universal operator. This proposal follows Menéndez-Benito's (2005b) account of Spanish *cualquier*, a universal indeterminate pronoun, to be discussed next. Given that both indefinites, *kol* and *cualquier*, favor universal readings, we want to find out whether this proposal might explain the *kol* facts.

4.2.2 Evaluating *kol* in view of Menéndez-Benito (2005/6)

Following Kratzer (1989/1995), Menéndez-Benito (2005a,b, 2006) assumes that the propositional alternatives generated by an indeterminate free choice expressing pronoun such as *cualquier* are always mutually exclusive. Given the similarity of *cualquier* and *kol* in certain free choice contexts, we want to find out whether a wide-scope universal analysis would give us the right results for these two indefinites.

In a wide-scope universal analysis, (53a) would be formalized as (53b).

(53) a. You may take any of the cards in this deck.

- b. $[[\langle a \rangle]] = 1$ iff for every x such that x is a combination (individuals or sums) of cards in this deck, there is an accessible world from w in which you take x .

(Menéndez-Benito, 2005a,b)

(54) implements a wide-scope analysis for *kol*. A universal operator, as in (54d), may be freely inserted in the derivation, if (i) it can agree with a universal FC item, (ii) it can operate over a set of propositional alternatives, (iii) it does not produce a fatal contradiction, and (iv) it does not create an intervention effect (Menéndez-Benito, 2010:50).

(54) a. at yexola livxor *kol* klaf.

you may choose.INF KOL card

You may pick one card, it doesn't matter which one.

b. Getting individual alternatives: $[[kol\ card]]^{w,g} = \{\text{card a, card b, ...}\}$

c. Getting propositional alternatives by Hamblin Functional Application⁷:

$[[VP]]^{w,g}(\{\text{card a, card b, ...}\})(\text{you}) =$

$= \{p_1 = \lambda w'. \text{pick}(\text{you, card a})(w'), p_2 = \lambda w'. \text{pick}(\text{you, card b})(w'), \dots\}$

$= A$

d. $[\forall](A) = \{\text{the proposition that is true in all worlds in which every proposition in } A \text{ is true}\}$

The problem with adopting a wide-scope analysis for indefinite pronouns such as *cualquier* is that such an analysis cannot predict restrictions on the freedom of choice expressed by *cualquier*-type pronouns in interaction with possibility modals. The wide-scope analysis does not give the right truth conditions for (54a). To understand why this is the

⁷See Chapter 1, section 1.2.

case, Menéndez-Benito introduces the Canasta scenario, where the rules of the game⁸ restrict the freedom of choice associated with the indefinite pronoun. The formalization in (53b) predicts that (53a) and (54a) are true in the Canasta scenario, which they are not – it is not the case that in this scenario there is unrestricted freedom of choice. In the Canasta scenario (and assuming there are only two cards), two types of worlds are permissible:

- (55) Type 1 worlds: worlds in which both cards are chosen.
 Type 2 worlds: worlds in which no cards are chosen.
 (modified⁹ from Menéndez-Benito, 2006:469)

Given (53b), (53a) will be true in the actual world w if the conditions given in (56) are met.

- (56) (i) There is a world accessible from w in which you take card a.
 (ii) There is a world accessible from w in which you take card b.
 (iii) There is a world accessible from w in which you take both cards.
 (modified from Menéndez-Benito, 2006:469-70)

The conditions in (56) are met in Type 1 worlds, as described in (55). Therefore, sentences with a *cualquier*-pronoun are predicted to be true even in scenarios where there is no complete freedom of choice. The problem with the formalization in (53b) is that “it does not guarantee that for every combination of cards x , there is a distinct world in which you take x ” (Menéndez-Benito, 2006:469-70).

⁸“One of the rules of the card game Canasta is: when a player has two cards that match the top card of the discard pile, she has two options: (i) take all the cards in the discard pile and (ii) take no card from the discard pile (but take the top card of the regular pile instead). Those are her two only options.” (Menéndez-Benito, 2006:469)

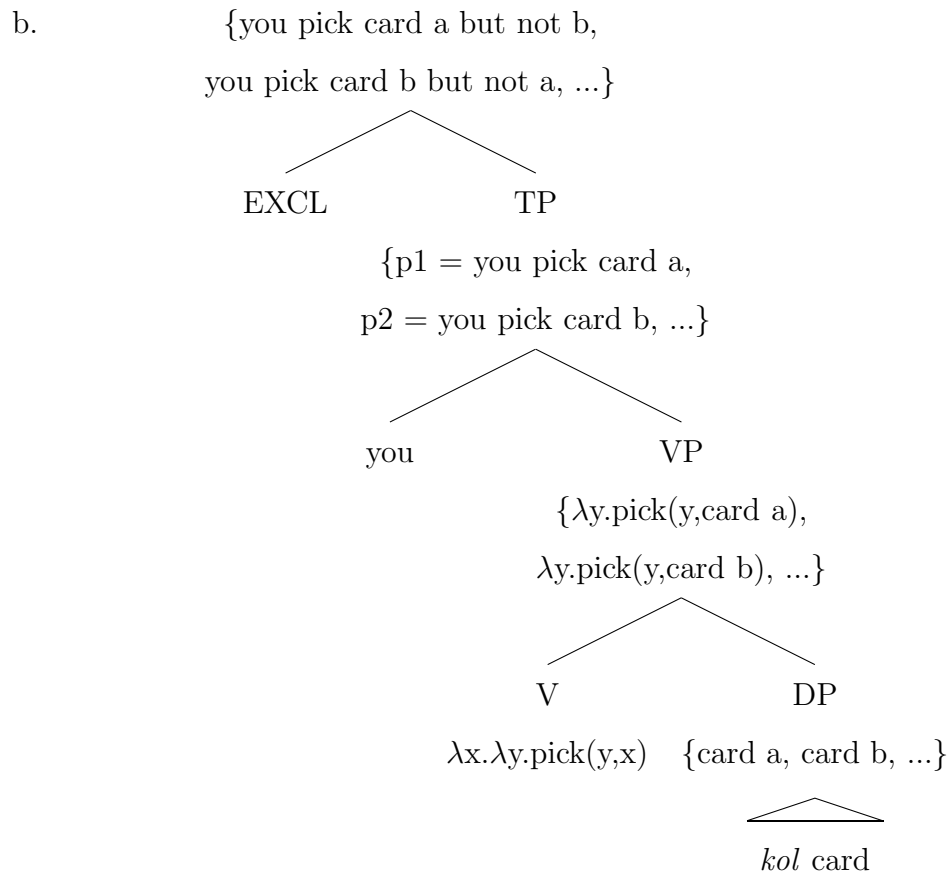
⁹In this and the following examples, only the phrasing has been modified to fit the way the data is set up here.

In order to capture the free choice effect of *cualquier*, Menéndez-Benito (2005b:106,113) introduces an *exclusiveness operator* (EXCL), which applies as soon as we get propositional alternatives. This operator is defined in (57):

- (57) a. $EXCL(A) = \{\lambda w(p(w) \ \& \ \forall q((q \in A \ \& \ q(w)) \rightarrow (p \Rightarrow q))) : p \in A\}$,
 where $p \Rightarrow q =_{def} \forall w(p(w) \rightarrow q(w))$

If A is a set of propositions, we get EXCL(A) by mapping each proposition p in A to the proposition that is true in a world w iff two conditions are satisfied:

- (i) p is true in w
 (ii) no other proposition in A is true in w, unless it is logically implied by p.



Applied to (53a), in a situation where there are only two cards, and given the set of alternatives in (58a), the exclusiveness operator gives us the set in (58b).

- (58) a. $A = \{\text{that you pick card a, that you pick card b, that you pick cards a+b}\}$
- b. $\text{EXCL}(A) = \{\text{that you pick card a but not b, that you pick card b but not a, that you pick cards a+b}\}$

In view of (58b), we can now make the right prediction with respect to the unrestricted freedom of choice observed with *cualquier* in the context of possibility modals (i.e. that (53a) is false in the Canasta scenario). The interaction between the semantics of a possibility modal and the exclusified propositional alternatives gives us a set of consistent propositions; in other words, for every proposition in (58b), there is a distinct world in which it is true. This proposal also predicts that *cualquier* is not licensed in episodic sentences and with necessity modals, since the interaction of the sentential universal quantifier (in the former case), and the semantics of a necessity modal (in the latter case), with exclusified propositional alternatives, results in a set of inconsistent propositions (meaning that the sentence would end up with contradictory truth conditions).

Kol* and *exclusiveness

In contrast to *cualquier*, *kol* is licensed in necessity contexts. We want to evaluate whether the exclusiveness operator can predict the interpretations of *kol*: universal, existential under negation, and free choice. We find that with possibility modals and negated sentences, exclusiveness works for *kol*. Let us go through the derivation of (59a), assuming the structure proposed in (57b). The derivation is modeled after Menéndez-Benito (2005a,b).

- (59) a. Joe yexol liftor *kol* xida.
 Joe can solve KOL puzzle
 ‘Joe can solve any/every puzzle.’
- b. $[IP_4 \forall [IP_3 \diamond [IP_2 \text{EXCL} [IP_1 \text{Joe} [VP \text{solve} [DP \text{kol puzzle}]]]]]]]$
- c. Getting individual alternatives: $[[\text{kol-puzzle}]^{w,g}] = \{\text{puzzle a, puzzle b, puzzles a+b}\}$
- d. Getting propositional alternatives: we combine the denotation of the verb with the set of individual alternatives:
 $= [[\text{solve}]](\{\text{puzzle a, puzzle b, puzzles a+b}\})([[\text{Joe}]])) =$
 $= [\lambda x.\lambda y.\lambda w'.\text{solves}(y)(x)(w')](\{\text{puzzle a, puzzle b, puzzles a+b}\})(\text{Joe}) =$
 $= \{\lambda w'.\text{solves}(\text{Joe})(\text{puzzle a})(w'), \lambda w'.\text{solves}(\text{Joe})(\text{puzzle b})(w'),$
 $\lambda w'.\text{solves}(\text{Joe})(\text{puzzles a+b})(w')\}$
 $= \{\text{that Joe solves puzzle a, that Joe solves puzzle b, that Joe solves puzzles a+b}\}$
- e. Applying EXCL: $\text{EXCL}([IP_1]^{w,g}) = \{\text{that Joe solves puzzle a but not b, that Joe solves puzzle b but not a, that Joe solves puzzles a+b}\}$
- f. Applying the modal: $[[\diamond]^{w,g}([IP_1]^{w,g})] =$
 $= [\{\lambda p\lambda w'\exists w''(\text{acc}(w')(w'') \& p(w''))\}](\{\text{that Joe solves puzzle a but not b, that Joe solves puzzle b but not a, that Joe solves puzzles a+b}\}) =$
 $= \{\text{that there is an accessible world in which Joe solves puzzle a but not b, that there is an accessible world in which Joe solves puzzle b but not a, that there is an accessible world in which Joe solves puzzles a+b}\}$

- g. Applying universal quantification over propositions: $[\forall](59f)$ results in a free choice effect –
- (59a) is true in w iff:
- (i) There is a world accessible from w where Joe solves puzzle a but not b;
 - (ii) There is a world accessible from w where Joe solves puzzle b but not a;
 - (iii) There is a world accessible from w where Joe solves both puzzles.

The result for (59a) is a set of consistent propositions. We thus explain the free choice reading observed with *kol* in possibility contexts.

A similar result obtains for the apparent existential reading of *kol* under negation, (60). The exclusiveness operator gives us the right results for (60), where the negation rescues the set of mutually inconsistent propositions, as shown in (60c).¹⁰

- (60) a. ha-šalīax lo hevi *kol* mixtav.
 the-delivery-person NEG brought KOL letter
 The delivery person didn't bring a/any letter.
 $\forall x[\text{letter}(x) \rightarrow \neg\text{delivered}(x)(\text{delivery person})]$
- b. Syntax: $[\forall [\text{Neg} [\text{EXCL} [\text{IP}]]]]$
- c. $\neg(\text{EXCL}(60a)) = \{\text{it is not the case that the person delivered letter a but not b, it is not the case that the person delivered letter b but not a, it is not the case that the person delivered letters a+b}\}$
- d. $[\forall](60c) = \{\text{it is not the case that the person delivered letter a but not b, **and** it is not the case that the person delivered letter b but not a, **and** it is not the case that the person delivered letters a+b}\}$

¹⁰I assume a scenario where there are only two letters: letter a and letter b.

Note that under this analysis, in (60), *kol* has a universal reading (the proposition that is true in all worlds in which every proposition in (60c) is true), which is a welcome result from the point of view of a unified analysis.

However, if we apply the exclusiveness operator to other *kol* contexts, such as assertions and modal necessity, we get the wrong results. What is conveyed by (61a) is that Joe likes each and every student, and in (62a), that Joe must solve every puzzle he finds or that he must solve each and every puzzle from a contextually salient set of puzzles. Importantly, none of these readings are free choice.

- (61) a. Joe *mexabev kol student*. {John, Mary}
 Joe likes KOL student
 ‘Joe likes any/each and every student.’
 $\forall x[\text{student}(x) \rightarrow \text{likes}(x)(\text{Joe})]$
- b. $\text{EXCL}(61a) = \text{EXCL}(\{\text{that Joe likes John, that Joe likes Mary, that Joe likes John and Mary}\}) =$
 $= \{\text{that Joe likes John but not Mary, that Joe likes Mary but not John, that Joe likes John and Mary}\}$

Applying $[\forall]$ to (61b) gives us the singleton set containing the proposition that is true in every world in which every proposition in (61b) is true. Intuitively, only the proposition {that Joe likes John and Mary} is true, while the other two propositions are false, and so we predict (61a) to denote a contradiction. It does not. We find the same situation in necessity contexts.

- (62) a. Joe hayav liftor *kol* xida.
 Joe must solve KOL puzzle
 (i) *It is a characteristic of Joe that if he encounters a puzzle, he must solve it.*
 (ii) *It is necessary for Joe to solve each puzzle in a contextually salient set.*
- b. $[[\textit{must}]](\text{EXCL}(62a)) =$
 $= [\{\lambda p \lambda w' \forall w'' (\text{acc}(w')(w'') \rightarrow p(w''))\}](\{\text{that Joe solves puzzle a but not b, that Joe solves puzzle b but not a, that Joe solves puzzles a+b}\}) =$
 $= \{\text{that in all accessible worlds Joe solves puzzle a but not b, that in all accessible worlds Joe solves puzzle b but not a, that in all accessible worlds that Joe solves puzzles a+b}\}$
- c. Applying universal quantification over propositions:
 $[\forall](62b) =$ the singleton set containing the proposition that is true in a world w iff all the propositions in (62b) are true in w .

Since there is no world in which all the propositions in (62b) are true, we have a set of inconsistent propositions, which leads us to expect that (62a) denotes a contradiction and that *kol* would not be licensed under these circumstances. In fact, *kol* is licensed here, unlike *cualquier*, which suggests that a solution involving excluded propositional alternatives cannot work for *kol* in episodic or necessity contexts.

If we consider exclusiveness as the capturer/indicator of free choice, then we conclude that *kol* does not always express free choice, i.e. it is not part of its semantics, at least in the above-mentioned contexts. However, we still need to account for the free choice reading of *kol*, on the one hand, and on the other hand, we want to explain how it is that *kol* is licensed in episodic and necessity contexts.

In an approach similar to that of Menéndez-Benito (2005b), Aloni (2007) discusses cases of subtriggered free choice *any*, otherwise ruled out in simple affirmative sentences.

This proposal is relevant for the *kol* facts, because in simple affirmative sentences, the *kol*-phrase can be understood as implicitly subtriggered.

4.2.3 Evaluating *kol* in view of Aloni (2007)

Aloni (2007) (a.o., e.g. Dayal 1998, Giannakidou 2001) notes that universal free choice items such as English *any* and Italian *qualsiasi/qualunque* are felicitous in possibility statements, but not in episodic (affirmative) contexts where they need a postnominal modifier. The latter phenomenon is known as *subtriggering* and is also discussed in Dayal (1998), following LeGrand (1975). These properties are illustrated in (63) for English free choice *any*.

- (63) a. *Any woman fell. (episodic)
 b. Any woman may fall. (possibility modal)
 c. Any woman who tried to jump fell. (subtriggering)

In contrast, *kol* is felicitous in all three contexts, as shown in (64). An important observation concerning *kol* is that when *kol* modifies a singular noun, its acceptability depends on the implicit presence of a contextually salient set; the object denoted by the *kol*-phrase must be a member of this salient set. I consider this restriction on *kol* to be a covert parallel of the overt subtriggering phenomenon found in other languages.

- (64) a. *kol* xatul pihek. (from a contextually salient set)
 KOL cat yawned
 ‘Each and every cat yawned.’
 b. *kol* xatul alul lefahek. [free choice reading]
 KOL cat might yawn.INF
 ‘Any/Every cat might yawn.’

- c. *kol* xatul še- rač harbe pihek.
 KOL cat that- ran a-lot yawned
 ‘Each and every cat that ran a lot yawned.’

In (64a), the *kol* phrase is covertly restricted, while in (64c), the *kol* phrase is overtly restricted via a relative clause. Note that in (64b), *kol* receives a free choice interpretation. Although in the case of Hebrew, we do not need to explain the contrast between a subtriggered and a non-subtriggered *kol*, because they are both subtriggered (overtly and covertly), we still have a contrast between possibility contexts and other contexts which might find an explanation along the lines of Aloni (2007).

Aloni (2007) observes that the exclusiveness operator proposed by Menéndez-Benito does not account for subtriggered cases such as (65b), since it does not distinguish between subtriggered and non-subtriggered cases. By applying at the sentence level, the exclusiveness operator does not take into account the postnominal modifier, and therefore incorrectly predicts impossible truth conditions for both (65a) and (65b), instead of just for (65a).

- (65) a. *Any kitten sneezed. {Rizho, Max, Lion}
 b. Any kitten who jumped sneezed. {Rizho, Max}
 c. EXCL(65a) = {that Rijo sneezed but not Max or Lion, that Max sneezed but not Rizho or Lion, that Rizho and Max sneezed but not Lion, ...}
 d. EXCL(65b) = {that Rizho sneezed but not Max, that Max sneezed but not Rizho, that Max and Rizho sneezed}
 e. There is no world accessible from *w*, in which all the propositions in (65c,d) are true.

To include the subtriggered cases in a semantics for free choice items, Aloni (2007) suggests an *exhaustivity operator* (EXH). This operator has been argued to be at work in

wh-constructions (Groenendijk and Stokhof, 1984). Assuming a covert operator that has been discussed in relation to a variety of constructions, and especially for other expressions (e.g. questions) which have the property of triggering sets of alternatives, would be, of course, optimal. Aloni proposes to explain the data in (65) in terms of the interaction between a universal propositional quantifier $[\forall]$, an exhaustivity operator [EXH], and a modal operator.

Aloni (2007:19) defines exhaustification as an operation that, given a domain A and a property P, returns a value, (66a). Following, a.o., Jacobson (1995), Aloni assumes that the output of exhaustification can undergo one of two type-shift rules: (i) SHIFT_e , which returns maximal plural entities (DP denotations), and (ii) SHIFT_{st} , which returns sets of mutually exclusive propositions (IP or Q denotations) (Aloni, 2007:19). Crucially, the EXH operation takes two arguments, and therefore, in the subtriggered cases it can apply at the DP level, rather than at the sentence (IP) level, taking the noun and its modifier as arguments, instead of the noun phrase and verb phrase in non-subtriggered cases. This approach provides a solution to the problem encountered by the EXCL operator account, while preserving its core idea.

- (66) a. *Exhaustivity*: A value x exhaustively satisfies a property P wrt to a domain A iff x is in A, P(x) is true, and for all y in A: if P(y) is true, then P(x) entails P(y).
- b. A: the set of entities $\mapsto \{\emptyset, a, b, c, a+b, b+c, a+c, a+b+c\}$
- c. P: falling $\mapsto \{\emptyset, a, b, c, a+b, b+c, a+c, a+b+c\}$
- d. x: the maximal collection of entities who fall $\mapsto \{a+b\}$
- (Aloni, 2007:21)

(66d) exhaustively satisfies the property defined in (66c) with respect to the domain of entities specified in (66b), because $\{a+b\}$ is the only x in the domain that satisfies the two requirements in (66a), namely, (i) that x falls, and (ii) that x falls entails y falls, where y in this case stands (in turn) for the \emptyset , the entity a and the entity b.

Formalizing the above, EXH takes an expression α of type e (e.g. *any*, *who*) providing the domain A , and a predicate P of type $\langle e, st \rangle$ providing the property P , and returns an expression $\text{EXH}[\alpha, P]$ of type $\langle e, st \rangle$ denoting the property of exhaustively satisfying P with respect to A .

$$(67) \quad [[\text{EXH}[\alpha, P]]]^{w, g} = \{\lambda x \lambda v. x \in A \ \& \ P(x)(v) \ \& \ \forall y \in A: P(y)(v) \Rightarrow P(x) \subseteq P(y)\}$$

(Aloni, 2007:21)

Finally, to avoid vacuous quantification in subtrigged cases where $[\forall]$ applies to singleton sets, Aloni assumes the operation “ \downarrow ”, (68), which maps plural individuals back into their atomic elements.

$$(68) \quad \begin{array}{l} \text{a. } [[\alpha]] = \{a+b\} \\ \text{b. } [[\downarrow \alpha]] = \{a, b\} \end{array}$$

(Aloni, 2007:24)

$$(69) \quad \begin{array}{l} \text{a. } \text{Any kitten who jumped sneezed.} \\ \text{b. } [\forall](\downarrow \text{SHIFT}_e(\text{EXH}([\text{any kitten, who jumped}])\text{sneezed})) \end{array}$$

The difference between the two proposals – *EXCL-op* versus *EXH-op*, can be understood in terms of argument structure. The *EXCL* operator only applies at the level of propositional alternatives. In contrast, the *EXH* operator applies where needed, as long as it finds two arguments to bind. It may apply at the IP level, in which case it takes as its arguments the *any*-phrase and the VP; it may also apply at the DP level, in which case it takes as arguments the *any*-phrase and its modifier.

In the case of *kol*, an exhaustivity operator cannot account for the facts. Since *kol* is acceptable regardless of modification by a relative clause, but does appear to require a contextually understood restriction, my proposal is that *kol* is always subtrigged. If we assume an exhaustivity operator, we wrongly predict that *kol*-utterances never reach

the level of propositional alternatives, since this exhaustivity operator would always have two arguments to bind at the DP level – *kol* and its restriction.

Summing up the insights from Menéndez-Benito (2005b) and Aloni (2007) as applied to *kol*, we find that since *kol* is acceptable in more contexts than *cualquier*, and even *any* for that matter, both theories undergenerate with respect to the *kol* data. In both approaches, the burden of licensing of the indefinite pronoun is carried by an operator. An exclusiveness operator, while explaining the *cualquier* facts, and in particular why it is that *cualquier* is not licensed in episodic and necessity statements, cannot be applied to similar items such as English *any* because it cannot differentiate between episodic subtriggered cases, where *any* is licensed, and episodic nonsubtriggered cases, where *any* is disallowed. The exhaustivity operator explains the latter case, but if we try to apply it to the *kol* data, we find that it cannot distinguish between episodic contexts that license *kol* with a restricted domain reading, and possibility contexts that license *kol* with a free choice, unrestricted domain, reading.

4.3 The proposal

Two theoretical insights, in particular, will be helpful in accounting for the problematic cases of *kol*: (i) Chierchia’s (1998) Nominal Mapping Parameter, where it is suggested that, typologically, there are languages (and Hebrew is among them) where nouns may freely type-shift between a kind-referring and a property-referring denotation; as kind-referring, the nouns relate to a generic operator, and (ii) Menéndez-Benito’s (2010) observation, that a *cualquier*-noun is allowed with necessity modals only if an indefinite noun in the same context can be interpreted generically.

In order to have a clearer view of the system proposed here, I limit the data to contrastive pairs – (a) bare singular indefinites vs. *kol*-modified singulars indefinites, and (b) interpretation in object- vs. subject position. I begin by presenting Chierchia (1998), followed by Menéndez-Benito (2010).

4.3.1 Genericity and indefinite phrases

In Chierchia’s (1998) system, nouns are universally kind-referring. Chierchia proposes a Nominal Mapping Parameter (NMP), which classifies languages according to their flexibility in allowing bare nouns as arguments, by using a set of binary features [\pm argument, \pm predicate]. This results in three typologically distinct sets of languages reflecting differences between mass versus count nouns. Chinese and Japanese, for example, are [+arg,–pred], Romance languages are [–arg,+pred], while Germanic and Slavic languages are [+arg,+pred]. Applied to Hebrew, where bare nouns are allowed as arguments, the NMP maps this language to [+arg,+pred], in the same group, in this typology, as Germanic and Slavic languages. This means that noun phrases in these languages denote either kinds (type $\langle e \rangle$) or predicates (type $\langle e,t \rangle$), and their phrasal projections can shift between argumental and predicative. This is achieved through a system of type shifting operators in the following way: if a noun is argumental, it can be predicativized via the ‘up’ operator \cup (i.e. $\langle e \rangle \rightarrow \langle e,t \rangle$); as predicates, count nouns are shifted via the ‘down’ operator \cap to argumental (i.e. $\langle e,t \rangle \rightarrow \langle e \rangle$).

Chierchia’s system also makes a distinction in terms of the selectional properties of predicates – object-selecting, kind-selecting, or both, and accounts for the semantic interaction between type of verb and the bare noun it selects for. This distinction is needed for the interpretation of kind-denoting noun phrases in episodic sentences. One such case is shown in (70a), where an object-selecting predicate interacts with a kind-referring noun phrase, giving rise to an apparent type-mismatch problem (the predicate “wants” a type $\langle e,t \rangle$ argument, a property, but instead receives a type $\langle e \rangle$ argument). In order to resolve this type-mismatch, Chierchia introduces the Derived Kind Predication rule, in (70b). This rule applies whenever an object-level argument slot in a predicate is filled by a kind (in an episodic frame). The type of the predicate will be automatically adjusted by introducing existential quantification over instances of the kind, as in (70c) (Chierchia, 1998:364).

- (70) a. *That kind of animal* is ruining my garden. [definite NP]
 b. Derived Kind Predication Rule: If P applies to objects and k denotes a kind, then $P(k) = \exists x[\cup k(x) \ \& \ P(x)]$ (Chierchia, 1998:364)
 c. $\exists x[\cup \text{that kind of animal}(x) \ \& \ \text{ruin my garden}(x)]$

Taking as a premise Chierchia's theory, the following applies to Hebrew bare noun phrases:

- As kind-referring, Hebrew bare singulars receive a generic/characterizing statement interpretation;
- The type-mismatch apparent with object-selecting verbs is resolved via existential closure at the VP level.

Therefore, a universal reading is expected when the noun phrase is in the restriction of generic aspect; an existential reading is expected otherwise.

Kol-modified noun phrases, similarly to *cualquier* noun phrases, may also have a generic reading. For the two readings of *cualquier* – free choice and generic, Menéndez-Benito (2010) proposes that *cualquier* has two agreement options and this choice allows for the two different readings. Since the bigger picture involves explaining crosslinguistic interpretational variability in a principled way, we want to check whether this kind of solution can account for *kol* as well as for *cualquier*.

4.3.2 Genericity and necessity

Menéndez-Benito (e.g. 2010) considers Spanish *cualquier* to be a universal indeterminate pronoun. *Cualquier* triggers individual alternatives which expand via Hamblin functional application into propositional alternatives. These alternatives are then excluded – the propositional alternatives combine with an *exclusiveness* operator and only if this results in a set of consistent propositions, *cualquier* is licensed. This gives

the right predictions for *cualquier* and explains why it is not licensed in necessity statements, where exclusification results in a set of inconsistent propositions. However, *cualquier* sometimes *is* licensed in necessity statements. Menéndez-Benito (2010) shows that these are generic necessity statements and that *cualquier* is licensed in such contexts only if an indefinite noun can be interpreted generically under the same conditions. The licensing of *cualquier* is possible when a generic operator is present because this operator closes off the individual alternatives generated by *cualquier*. No propositional alternatives are generated when generic aspect is involved.

To explain Hebrew *kol*, I link Menéndez-Benito’s idea sketched above with predictions from Chierchia’s system. In this system, kind-reference, and by extension genericity, is envisioned as the crosslinguistic default for some languages, meaning that nouns are always kind-referring to begin with, but then depending on type of language, nouns are mapped into kinds, properties, or both. Hebrew is a case of the latter since nouns in this language may freely shift between argumental and predicative, depending on the requirements of the verb – kind-selecting, object-selecting, or both (what I term “flexible” verbs).

The generic operator (GEN) can be construed as a universal quantifier over individual alternatives, corresponding to the universal generalized quantifier in Kratzer and Shimoyama (2002:8). (Menéndez-Benito, 2010:53)

$$(71) \quad \text{For } [[\alpha]]^{w,g} \subseteq D_e: [[\text{GEN } \alpha]]^{w,g} = \{\lambda P \lambda w' (\forall a (a \in [[\alpha]]^{w,g} \rightarrow P(a)(w')=1))\}$$

(Menéndez-Benito, 2010:53)

To illustrate this, let us consider (72). The individual alternatives denoted by *any student* in (72a) are “absorbed” by the generic operator; “as a consequence, no propositional alternatives are generated and, hence, exclusiveness does not come into play” (Menéndez-Benito, 2010:54). GEN applies to the set of individual alternatives generated by the *any*-phrase yielding the function in (72c), which tells us that for all x, if x is a student in w’, then x works hard in w’.

- (72) a. Any student must work hard.
 b. Syntax: [[GEN [any student]][IP_2 1 [IP_1 must [t work hard]]]]
 c. Semantics: [[GEN-[any student]]] =
 = $\{\lambda P\lambda w'(\forall x(\text{student}'(x)(w') \rightarrow P(x)(w')))\}$
 (Menéndez-Benito, 2010:53–4)

This predicts that the indeterminate pronoun is licensed only if it can agree with a generic operator. This proposal accounts for both sets of *cualquier* data: on the one hand, in (non-generic) necessity statements, exclusifying the propositional alternatives potentially generated by *cualquier* would result in a set of inconsistent propositions and therefore *cualquier* is not licensed; on the other hand, if a generic operator is present, it combines with the individual alternatives generated by *cualquier* and no propositional alternatives evolve. “The sentence [*any student must work hard*] will denote the (singleton set containing the) non-contradictory proposition in [(73)]” (Menéndez-Benito, 2010:54).

- (73) $\{[(72a)]\} = \{\lambda w'(\forall x(\text{student}'(x)(w') \rightarrow \forall w''(\text{acc}(w')(w'') \rightarrow \text{work-hard}(x)(w''))))\}$
 (Menéndez-Benito, 2010:54)

For all x, if x is a student in w', then for all w'', if the accessibility relation between w' and w'' holds, then x works hard in w''.

Menéndez-Benito’s (2010) idea with respect to genericity and the licensing of the indeterminate pronoun *cualquier* can be extended to *kol* to tackle some of the more problematic *kol* data. For *cualquier*, Menéndez-Benito proposes two options: (i) agreement with a generic operator in necessity statements, which otherwise disallow *cualquier*, or, (ii) agreement with a universal quantifier over (exclusified) propositions, which predicts the unrestricted freedom of choice associated with *cualquier* in possibility statements (the result is a set of consistent propositions); in addition, Menéndez-Benito’s account predicts the ungrammaticality of *cualquier* in non-generic necessity statements (where

it results in a set of inconsistent propositions).

4.3.3 *Kol* and genericity

Kol differs from *cualquier* by having a wider distribution; for example, *kol* is acceptable in episodic sentences, as well as in necessity statements. I relate this to the fact that bare nouns in Hebrew may always be kind-referring, and if this is the case, then there may be a default generic operator in a wider variety of contexts.

Spanish and Hebrew belong to different typological groups in Chierchia's (1998) theory. In Spanish, bare nouns are of a property type. In contrast, in Hebrew, nouns can be argumental (kinds, type $\langle e \rangle$) or predicative (properties, type $\langle e, t \rangle$). The difference in the distribution of *cualquier* versus *kol* stems (in part) from the difference in their possible nominal type restrictions. Bare singular nouns in Spanish cannot refer to kinds and as such they cannot directly associate with GEN. In contrast, nouns in Hebrew are kind-referring. Following Chierchia's theory, this could be translated into a default generic operator that has the noun phrase in its restriction. Bare singulars and *kol*-modified singular noun phrases in Hebrew introduce individual alternatives. These alternatives may then be closed off at the VP level by the universal quantification contributed by the generic operator, or by existential closure.

The next set of data compares the availability of generic readings for bare singular nouns versus *kol*-modified nouns in simple assertions. The data takes into consideration only verbs that allow for both existential and generic/kind readings of their arguments.

In simple affirmative sentences, both bare singular nouns and *kol*-modified nouns may receive a generic (characterizing statement) interpretation, as illustrated in (74) and (75).

(74) Bare singulars:

a. **xatul** čad **axbar**.

cat hunts/is-hunting mouse

(i) *It is a characteristic of the cat-kind that they hunt mice.*

(ii) *A cat is hunting a mouse in a contextually salient situation.*

(75) *Kol*-nouns:

a. (ha)xatul čad ***kol*** **axbar**.

(the)cat hunts/is-hunting KOL mouse

(i) *It is generally the case that members of the cat-kind perform the action of hunting any individual belonging to the mouse kind.*

(ii) *(The)A cat is hunting each and every mouse (in this house).*

b. ***kol*** **xatul** čad axbar.

KOL cat hunts/is-hunting mouse

(i) *It is generally the case that every member of the cat-kind performs the action of hunting any individual belonging to the mouse kind.*

(ii) *Each and every cat (in this house) is hunting a mouse.*

In the context of possibility modals, both the bare noun phrase and the *kol*-modified noun phrase may be interpreted generically.

(76) Bare singulars with possibility modals:

a. Joe yexol liftor **xida**.

Joe can solve puzzle

(i) *In view of my knowledge/evidence, Joe is capable of solving a puzzle.*

Scenario: Jim has a puzzle that he cannot solve. He asks if I know of somebody who would know how to solve a puzzle, and I reply that as far as I know Joe should be capable of solving a puzzle.

(ii) *It is allowed that Joe solves a puzzle.*

Scenario: There's a dinner party and Joe, who is 5, looks bored. The host says it is ok for Joe to solve a puzzle if he wants, and points to where different puzzles are located in the room. There is no restriction on the number of puzzles that Joe is allowed to solve.

b. **xatul** yexol litfos **axbar**.

cat can catch.INF mouse

It is generally the case that a cat has the ability to catch a mouse.

(77) *Kol*-nouns with possibility modals:

a. Joe yexol liftor **kol** xida.

Joe can solve KOL puzzle

(i) *It is a characteristic of Joe that he has the ability to solve a puzzle, any puzzle.*

(ii) *It is allowed that Joe solves a puzzle, any puzzle is a permitted option.*

b. **kol** yeled yexol liftor xida.

KOL child can solve puzzle

(i) *It is generally the case that a child, any child, has the ability to solve a puzzle.*

(ii) *It is allowed that each child solves a puzzle.*

In the context of necessity modals, the situation is similar to possibility contexts, in that both the bare noun phrase and the *kol*-modified noun phrase may be interpreted generically.

(78) Bare singulars with necessity modals:

a. Joe hayav liftor **xida**.

Joe must solve puzzle

(i) *There is some puzzle that Joe feels it's necessary for him to solve.*

(ii) *It is necessary for Joe to solve a puzzle (e.g. in order to win the contest).*

b. xatul hayav litfos **axbar**.

cat must catch.INF mouse

It is generally the case that if a cat sees a mouse, it will try to catch it.

c. **student** hayav la'avod kaše.

student must work hard

It is a characteristic of this kind that they must work hard.

(79) *Kol*-nouns with necessity modals:

a. Joe hayav liftor **kol xida**.

Joe must solve KOL puzzle

(i) *It is a characteristic of Joe that if he encounters a puzzle, he must solve it.*

(ii) *It is necessary for Joe to solve each puzzle of a contextually salient set.*

b. **kol student** hayav la'avod kaše.

KOL student must work hard

(i) *It is a characteristic of this kind, without exceptions, that they must work hard.*

(ii) *It is necessary that each student of a contextually salient set of students works equally hard.*

Summing up the availability of generic interpretations in modal contexts, we find that both the bare singular and the *kol*-modified noun phrase may have generic readings. In what follows, I suggest that Spanish and Hebrew universal indefinites are quite similar. As suggested by Menéndez-Benito, *cualquier* has two licensing options: agreement with a universal operator over propositional alternatives for the free choice reading, or, agreement with a generic operator elsewhere. Both agreement options apply to alternatives generated by the universal pronoun at some stage in the derivation prior to the (highest) sentential universal quantifier. Both these operators introduce some kind of universal modal reading.

I show that a similar situation is found with *kol*. I argue that *kol* agrees with a universal operator, either with a generalized quantifier on a par with GEN, or with a universal sentential quantifier. As mentioned earlier in the chapter, I follow Menéndez-Benito (2010), in assuming that universal operators may be freely inserted in the derivation,

“... up to interpretability. According to this hypothesis, $[\forall]$ can be inserted in any place in the structure in which it (i) can agree with a universal FC item, (ii) can operate over a set of propositional alternatives, (iii) does not produce a fatal contradiction, and (iv) does not block agreement between another indeterminate and its corresponding matching operator (i.e., does not create an intervention effect).” (Menéndez-Benito, 2010:50)

We now need to explain how the different universal readings available for *kol* come about: the free choice reading in possibility contexts, on the one hand, and the universal distributive and generic readings, on the other.

I propose a unified semantics for the various readings available for *kol* under what I call a “distributivity approach”. The idea is that all the interpretations found with *kol* can be explained under this notion. The free choice case can be viewed as distribution over propositional alternatives, the generic reading can be viewed as distribution over instances of a kind, and finally, the universal reading in episodic contexts can be viewed as distribution over a contextually salient set of individuals. In the Kratzer and Shi-

moyama (2002) framework, this would mean that *kol* is specified for a $[\forall]$ feature which needs to be valued by the matching feature of a universal operator. *Kol* comes with a contextual restriction. If the contextual restriction is over the set of normal situations, we get a generic reading of the *kol*-noun phrase; if the contextual restriction is over a set of properties or events, then we have the universal reading of the *kol*-noun phrase, and if the *kol* propositional alternatives are excluded, we have a free choice reading for the *kol*-phrase.

4.3.4 The distributivity of *each*, *every* and *kol*

As previously observed, in episodic contexts *kol* receives a universal reading akin to that of *each* and *every*. In English, the determiners *each* and *every* have been considered as distributivity markers. For example, (80a) cannot be understood as a singleton; it implies that we have more than one entity in the relevant domain. *Kol* shares this property; (80b) can only be understood as including at least two children, each of whom has eaten a cookie.

- (80) a. *Each/Every* child ate a cookie.
 b. *kol* yeled axal ugia.
 KOL child ate cookie
 ‘Each/every child ate a cookie.’

Tunstall (1998) addresses the distributivity of English *each* and *every* and explains it as follows. First, the idea is that when a predicate combines with a phrase modified by *each* or *every*, the predicate is understood as applying to each individual member in the resulting set rather than to the set as a whole. The evidence for this comes from looking at the types of predicates that *each* and *every* can and cannot occur with. *Each* and *every* are disallowed with collective predicates, as in (81a), but they are allowed

with predicates which allow distributive readings, such as (81b). These facts are readily explained if we consider *each* and *every* as distributing down to individuals (Tunstall, 1998:89,91). *Kol* shares this distribution and interpretation with *each* and *every*.

(81) a. **Each*/**every* student is numerous/is a large group. (collective) **kol*
(Tunstall, 1998:92)

b. *kol* student mexaded iparon.
KOL student sharpens.PROG pencil
'*Each/every* student is sharpening a pencil.' (distributive)

Secondly, *each* and *every* are distributive in the sense that they require distributive event structures, i.e. structures which include at least two different subevents, and where the members of their restrictor set are associated with a number of different subevents (Tunstall, 1998:89-90).

(82) a. *Each/Every* girl sang.
There is an event e and for each individual girl g in the set of girls there is a subevent e' which is part of e such that g sang in e'.
(Tunstall, 1998:89-90)

A similar distributivity effect is observed for *kol*. (83a) may be understood as involving a number of different subevents. For an event *e* of book-to-shelf returning, we may either have a different subevent per individual book, (83b), or we could have, for example, one subevent in which one book was returned, and another subevent in which several books were returned simultaneously, (83c).

- (83) a. Mira hixzira *kol* sefer la-makom šelo.
 Mira returned KOL book to-place his
 ‘Mira returned each book to its place.’
- b. *In subevent e1 of event e, Mira returns Huck Finn to the shelf;
 in subevent e2 of event e, Mira returns The Bartimaeus Trilogy to the
 shelf; ...*
- c. *In subevent e1 of event e, Mira returns Huck Finn to the shelf;
 in subevent e2 of event e, Mira returns Huck Finn and The Bartimaeus
 Trilogy to the shelf; ...*

The difference between *each* and *every*, according to Tunstall, is that *each* requires a completely distributive event structure while *every* only requires a partially distributive event structure (Tunstall, 1998:98).

- (84) a. Ricky weighed each/every apple from the basket, individually.
- b. Ricky weighed *each/every apple from the basket, but not individually.
 (modified from Tunstall, 1998:99)

A situation in which, given apple a, apple b and apple c, Ricky weighed all three together, or weighed apples a and b together, and then separately apple c, would felicitously be described with *every*, but not with *each*, since *each* requires separate weighing events. Given the same scenario, we find that this effect is lost with *kol*.

- (85) a. Riki šakla kol tapuax me-ha-salsela.
 Riki weighted KOL apple from-the-basket
 (i) *Riki weighed the apples, individually. (She wanted to find the lightest one.)*
 (ii) *Riki weighed the apples, but not individually. (She weighed them all eventually; she didn't miss any of the apples.)*

Tunstall (1998) proposes a semantics for distinguishing between English determiners *each* and *every*, rendered in an *events* framework, illustrated in (86) and (87).

- (86) a. Translation of *Every*:
 $e \in [\text{each/every } N](f)$, where f is an open sentence, iff
 $\forall x [x \in [N] \rightarrow \exists e' \leq e [e' \in \& f(x)]$
 $\exists y [y \in [N] \& y \neq x \& \exists e'' \leq e [e'' \in f(y) \& e' \neq e'']]$ (event distributivity condition)
- b. Jamie lifted *every* basket.
- c. $e \in [\text{Jamie lifted every basket}]$ iff
 $\forall x [x \in [\text{basket}] \rightarrow \exists e' \leq e [e' \in [\text{lift}](<j,x>) \&$
 $\exists y [y \in [\text{basket}] \& y \neq x \&$
 $\exists e'' \leq e [e'' \in [\text{lift}](<j,y>) \& e' \neq e'']]$
 An event e is an event of Jamie lifting every basket if for every basket x there is a subevent e' which is part of e in which Jamie lifted x , and there is a basket y that is not the same as x and a subevent e'' which is part of e in which Jamie lifted y , and the subevent e' of lifting x is not the same as the subevent e'' of lifting y .
 (Tunstall, 1998:117)

This means that *every* requires that there be at least two distinct subevents, however, it is not necessary that the objects acted upon in each subevent be distinct. For (86), it could be the case that Jamie lifted basket#1 in one subevent, and baskets#1&2 in another subevent. This differs from the requirement of *each*, where all the subevents must be distinct, meaning that for every basket, all other baskets must be in another subevent (Tunstall, 1998:116).

(87) a. Translation of *Each*:

$e \in [[\text{each/every } N]](f)$, where f is an open sentence, iff

$\forall x [x \in [[N]] \rightarrow \exists e' \leq e [e' \in f(x) \ \&]$

$\forall y [y \in [[N]] \ \& \ y \neq x \rightarrow \forall e'' \leq e [e'' \in f(y) \rightarrow e' \neq e'']]$ (differentiation condition)

b. Jamie lifted *each* basket.

c. $e \in [[\text{Jamie lifted each basket}]]$ iff

$\forall x [x \in [[\text{basket}]] \rightarrow \exists e' \leq e [e' \in [[\text{lift}]](\langle j, x \rangle) \ \&]$

$\forall y [y \in [[\text{basket}]] \ \& \ y \neq x \rightarrow$

$\forall e'' \leq e [e'' \in [[\text{lift}]](\langle j, y \rangle) \rightarrow e' \neq e'']]$

An event e is an event of Jamie lifting each basket if for every basket x there is a subevent e' which is part of e in which Jamie lifted x , and for every basket y that is not the same as x , every subevent e'' which is part of e in which Jamie lifted y is not the same as the subevent e' of lifting x . (Tunstall, 1998:117)

In other words, the difference between *each* and *every* may be captured in terms of “degree” of distributivity – while *every* allows partial distributivity over events, *each* requires complete distributivity. Tunstall argues that the distributive nature of *every* and the differentiating nature of *each* are lexical properties, not shared by other quantifiers such as *all*, *most*, or *many*, and proposes that these properties be included (built

into) their respective semantics (Tunstall, 1998:100,103). A similar approach to *kol* would be problematic since *kol* may also modify plural definite noun phrases, in which case it is the equivalent of *all*. Therefore, these properties cannot be build directly into its lexical entry.

4.3.5 Deriving *kol*

I suggest that the interpretations we find with *kol* – generic, episodic, and free choice – can be explained via the notion of distributivity. The free choice interpretation can be understood as distribution over propositional alternatives (similarly to Menéndez-Benito’s (2005b) proposal for *cualquier*), the generic reading can be interpreted as distribution over instances of a kind, while the universal reading in episodic contexts can be understood as distribution over a contextually salient set of individuals. In the Kratzer and Shimoyama (2002) framework, this would mean that *kol* is specified for a $[\forall]$ feature which agrees with a universal operator. I assume that the *kol*-phrase introduces sets of individual alternatives.

Given these assumptions, we find two agreement options for the licensing of *kol* (which are the agreement options found with other universal indeterminate pronouns such as *cualquier*):

- (i) Agreement with a universal operator (sentential quantifier) over propositional alternatives. If the *kol*-phrase stays in situ, the individual alternatives it introduces combine via pointwise functional application with the verbal predicate and expand into propositional alternatives. These alternatives are then exclusified, which results in a free choice interpretation of the *kol*-utterance.
- (ii) Agreement with a universal operator (generalized quantifier) over individual alternatives. If the *kol*-phrase moves for checking purposes to a position where it is the first argument of a universal operator, then, depending on verbal aspect – episodic or generic – and because of the fact that noun phrases in Hebrew may

denote instances of kinds or properties, the *kol*-utterance receives a generic or an episodic reading. The universal quantifier binds/“absorbs” the individual alternatives generated by the *kol*-phrase such that the result is a singleton set containing a proposition.

Modification by *kol* always involves a particular contextual restriction, here labeled “R” which interacts with the *kol*-modified noun. This restriction is a contextually resolved variable, which acts as a covert argument of the *kol*-phrase, therefore creating a subtriggering effect. The type of the noun phrase – kind or property denoting – is determined by the requirements of the verb. If the verb requires that its arguments be instances of a kind, then the noun phrase will be kind-referring and R will restrict the domain of the *kol*-phrase to the “normal” instances of the kind denoted by the noun. In this case, we have generic verbal aspect and the *kol*-utterance receives a generic interpretation. If we have episodic verbal aspect, R restricts the domain of the noun phrase to a contextually salient set of entities.

This account differs from Menéndez-Benito’s in that, in the case of *kol* at least, the readings of the universal indefinite pronoun are the result of the interaction between a universal operator and a contextual restriction R ranging over different types of domains. This avoids the problem mentioned by Menéndez-Benito, namely that we cannot really equate a universal operator/quantifier with a generic operator¹¹.

I recall here the rules of semantic composition which will be applied in the derivation of *kol*-utterances:

- (i) Intensional Functional Application (Heim and Kratzer, 1998): If α is a branching node and $\{\beta, \gamma\}$ the set of its daughters, then, for any possible world w and any assignment g : if $[[\beta]]^{w,g}$ is a function whose domain contains $\lambda w'. [[\gamma]]^{w',g}$, then, $[[\alpha]]^{w,g} = [[\beta]]^{w,g}(\lambda w'. [[\gamma]]^{w',g})$.

¹¹Menéndez-Benito, 2010:53. *A student must work hard. ≠ Every student must work hard.*

- (ii) Hamblin Functional Application (Kratzer and Shimoyama, 2002): If α is a branching node with daughters β and γ , and $[[\beta]]^{w,g} \subseteq D_\sigma$ and $[[\gamma]]^{w,g} \subseteq D_{\langle \sigma \tau \rangle}$, then $[[\alpha]]^{w,g} = \{a \in D_\tau: \exists b \exists c [b \in [[\beta]]^{w,g} \ \& \ c \in [[\gamma]]^{w,g} \ \& \ a = c(b)]\}$.
- (iii) Predicate Abstraction (Kratzer and Shimoyama, 2002): If α is a branching node whose daughters are an index i and β , where $[[\beta]]^{w,g} \subseteq D_\sigma$, then $[[\alpha]]^{w,g} = \{f: f \in D_{\langle e \sigma \rangle} \ \& \ \forall a [f(a) \in [[\beta]]^{w,g[a/i]}]\}$
- (iv) Pronouns and Traces (Kratzer and Shimoyama, 2002): For any index i , $[[i]]^{w,g} = \{g(i)\}$

Let us now derive a *kol*-sentence. (88) may have both an episodic reading and a generic reading, paraphrased below.

(88) a. *kol* xatul čad.

KOL cat hunts/is-hunting

- (i) Generic reading: *Generally, every entity of the cat-kind domain (which includes all able cats) has the characteristic of being a hunter.*
- (ii) Episodic/distributive reading: *Each/every cat-entity in the contextually defined domain (e.g. a picture book) is hunting (i.e. is on the prowl for something).*

b. Lexical entries:

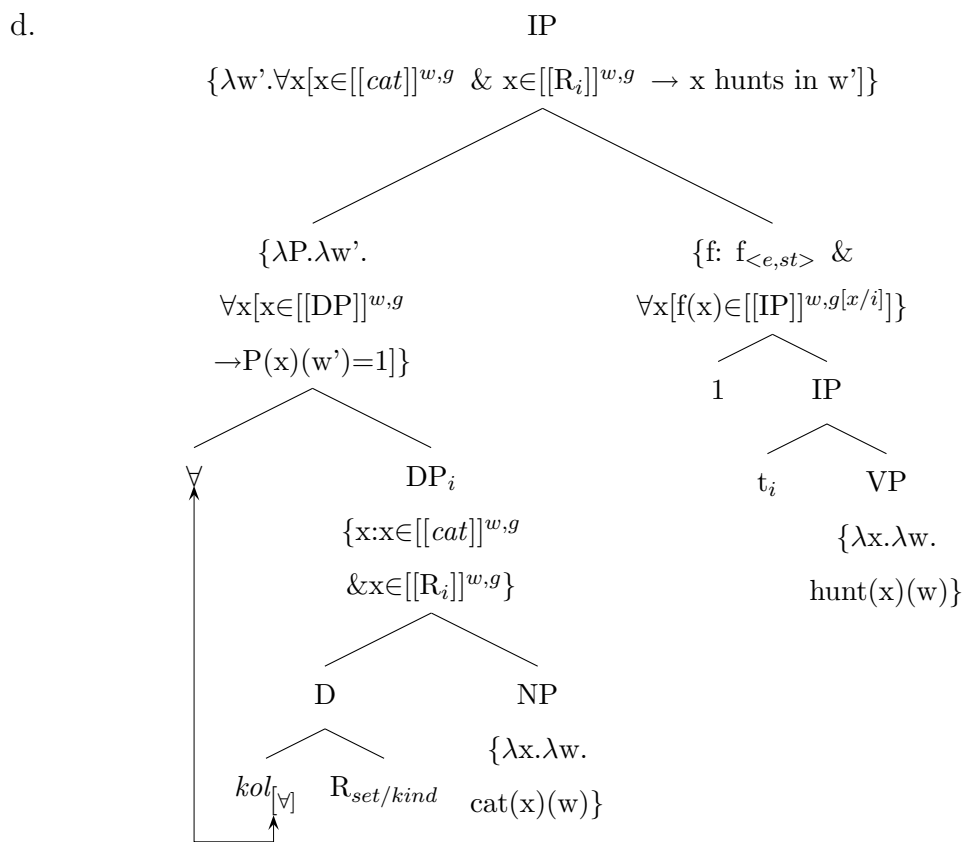
- (i) $[[\textit{hunt}]]^{w,g} = \{\lambda x. \lambda w. \textit{hunt}(x)(w)\}$
- (ii) $[[\textit{kol-R-cat}]]^{w,g} = \{x: x \in [[\textit{cat}]]^{w,g} \ \& \ x \in [[\textit{R}_i]]^{w,g}\}$
- (iii) $[[\textit{R}_i]]^{w,g} =$
 $= g^1(i) = \{\lambda x. \lambda w. x \text{ is normal/typical in } w\}^{12}$
 $= g^2(i) = \{\lambda x. \lambda w. x \text{ is in the picture in } w\}^{13}$
 (I assume that the denotation of R percolates to D)

¹²I refer to this type of value as *kind*.

¹³I refer to this type of value as a *contextually specified set*.

- (iv) Generalized universal quantifier (Kratzer and Shimoyama, 2002):
 $[[\forall\alpha]]^{w,g} = \{\lambda P.\lambda w'. \forall a[a \in [[\alpha]]^{w,g} \rightarrow P(a)(w') = 1]\}$ (the property of properties that is true of any property if every individual in α has it)

- c. $[[\text{(88a)}]]$ is true iff for every x such that x is a cat and x is in the contextually restricted domain R , x hunts/is-hunting.



With modals (possibility and necessity), the different interpretations of *kol*-utterances are the result of the relative positioning of the modal with respect to the universal quantifier that values the *kol*-phrase.

Let us now take the example in (89).

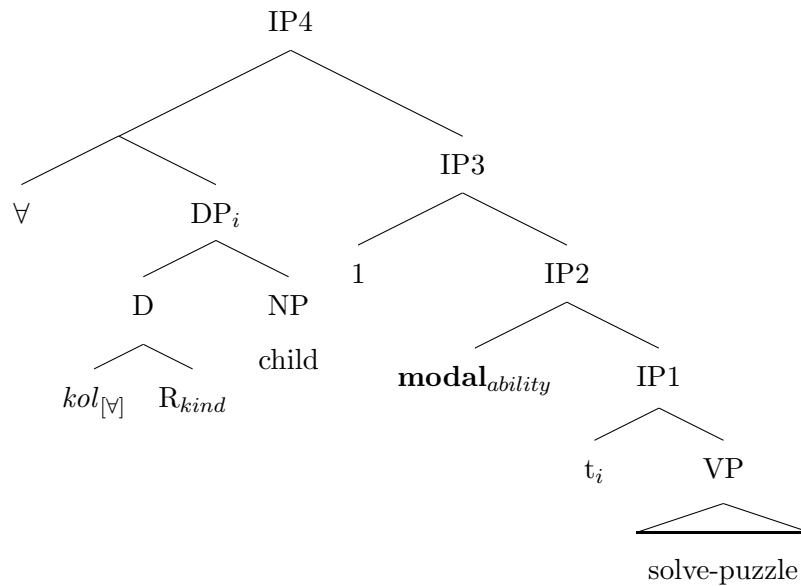
- (89) *kol* yeled yexol/hayav liftor xida.
 KOL child can/must solve.INF puzzle
 ‘Any/Each/Every child can/must solve a puzzle.’

The possible readings of the *kol*-utterance in (89) – generic, distributive and free choice – are derived in (90), (91) and (92), respectively.

- (90) Generic/Ability reading: *Generally, all entities in a contextually restricted domain of entities as denoted by the DP have the ability to satisfy the property denoted by the VP.*

e.g. Any/kol child (member of the child-kind) can (has the ability to) solve a puzzle.

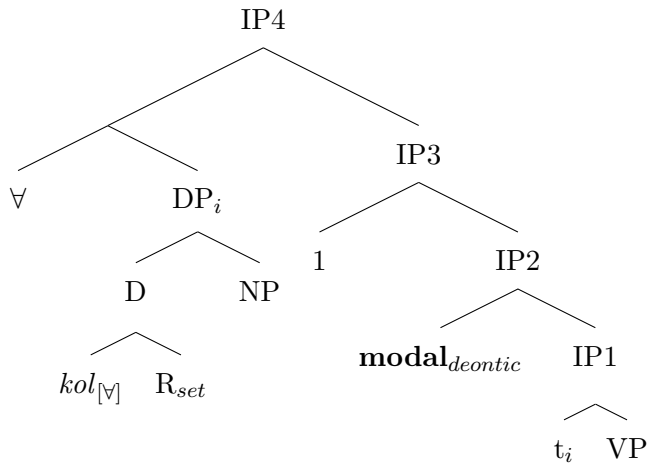
a.



- (91) Permission/necessity/distributive reading: *Each/every entity in a contextually defined domain of entities as denoted by the DP is permitted or required to satisfy the property denoted by the VP.*

e.g. Each/Every/kol child (in this classroom) can/must (is permitted/required to) solve a puzzle.

a.



- (92) Free choice reading¹⁴: *For all entities x in the domain denoted by the DP, x may optionally satisfy the property denoted by the VP.*

e.g. Any/kol child may solve a puzzle, i.e. any child is a permitted puzzle-solver.

¹⁴Based on Menéndez-Benito's 2006 proposal.

d. Applying EXCL:

$$\begin{aligned} [[IP2]]^{w,g} &= \text{EXCL}([[IP1]]^{w,g}) = \\ &= \text{EXCL}(\{\text{that Jim solves a puzzle, that John solves a puzzle, that Jim+John} \\ &\text{solve a puzzle}\} = \\ &= \{\text{that Jim but not John solves a puzzle, that John but not Jim solves a} \\ &\text{puzzle, that Jim+John solve a puzzle}\} \end{aligned}$$

e. Applying the modal:

$$\begin{aligned} [[IP3]]^{w,g} &= [[\Diamond]]^{w,g}([[IP2]]^{w,g}) = \\ &= [\{\lambda p \lambda w' \exists w'' (\text{acc}(w')(w'') \ \& \ p(w''))\}]([[IP2]]^{w,g}) = \\ &= \{\text{that there is an accessible world in which Jim but not John solves a} \\ &\text{puzzle, that there is an accessible world in which John but not Jim solves a} \\ &\text{puzzle, that there is an accessible world in which Jim+John solve a puzzle}\} \end{aligned}$$

f. Applying universal quantification over propositions:

$$[[IP4]]^{w,g} = [\forall]([[IP3]]^{w,g}) \text{ results in a free choice effect.}$$

The sentence is true in w iff:

- (i) There is a world accessible from w where Jim but not John solves a puzzle;
- (ii) There is a world accessible from w where John but not Jim solves a puzzle;
- (iii) There is a world accessible from w where both Jim and John solve a puzzle.

Since all three conditions are met, (92) is felicitous under a free choice reading.

The semantics proposed above accounts for the generic, distributive and free choice readings of *kol*-modified singular noun phrases. The *kol* noun phrase moves via a Quantifier Raising (QR)-type operation to the restriction of a universal (generalized

quantifier) operator, which results in a universal reading for the *kol* noun phrase. This universal reading can be interpreted as distribution over instances of a kind, or as distribution over the individual members of a contextually given set. Adapting Menéndez-Benito's (2010) insights to our account for *kol*, we note that the result of the movement of the *kol* phrase to the restriction of the distributive operator blocks the expansion of individual alternatives into propositional alternatives. Since no propositional alternatives are generated in this case, the exclusiveness operator does not come into play and we do not predict a free choice reading for *kol* in these contexts, as confirmed by the data.

4.4 Summary

This chapter has examined in detail the distributional and interpretational properties of the indefinite pronoun *kol*. It was argued that *kol* is a universal indefinite/indeterminate pronoun, which shares semantic and pragmatic properties with similar determiners crosslinguistically. Comparisons were made, for example with Spanish *cualquier* and English *each* and *every*, with the purpose of determining the source of the interpretational variability found with *kol* – whether it is language specific or whether *kol* shares the observed properties with indefinite pronouns in other languages. I suggested that *kol* is not a true free choice item since expressing free choice is a kind of ‘elsewhere’ condition for *kol*, in contrast with Spanish *cualquier* and English *any*. However, *kol* and *cualquier* do share similar licensing conditions. Two agreement options are available for both determiners: (i) agreement with a universal operator (sentential quantifier) over propositional alternatives, resulting in a free choice reading of the modified noun phrase, and (ii) agreement with a modalized universal operator over individual alternatives.

The first agreement option does not require movement of the modified noun phrase from its base position; the expansion of the *kol* and *cualquier* individual alternatives into propositional alternatives, via Hamblin functional application, creates a feature

percolation effect, thus allowing the universal feature of these indefinites to be checked at a higher level (a semantic domain extension effect perhaps similar or parallel to phase extension in the syntax). The second agreement option requires a quantifier-raising-type movement of the modified noun phrase to the restriction of a universal operator, for feature valuation purposes.

The main semantic and pragmatic function of *kol* comes from its “distributivity” property. I proposed a way of unifying the different readings of *kol* under this notion. The free choice interpretation can be understood as distribution over propositional alternatives (as is the case for *cualquier*), the generic reading can be interpreted as distribution over instances of a kind, while the universal reading in episodic contexts can be defined as distribution over a contextually salient set of individuals.

The present findings are important in that they shows that, crosslinguistically, indefinite pronouns belonging to typologically different languages share a semantic core, as well as syntactic agreement patterns; for example, universal indefinite pronouns are specialized for a $[\forall]$ feature which needs to be checked by a $[\forall]$ feature provided by an overt or covert semantic operator; this operator quantifies over individual or propositional alternatives, resulting in the observed interpretational variability.

Chapter 5

Free Choice indefinites

5.1 Introduction

This chapter explores syntactic aspects of indefinite phrases in Hebrew, which provide evidence for language-specific interface strategies. The main theoretical question addressed here is concerned with the DP-internal division of labor between syntax, semantics and pragmatics. If we consider each grammar component separately, we cannot account for the meaning and distributional differences that we find with their indefinite determiners. However, if we examine the data in terms of the mapping between the syntactic and the semantic components of grammar, as well as between the syntactic and the pragmatic components, we can derive a more efficient account of the data.

The present chapter focuses on the domain restrictions imposed by indefinite determiners, particularly free choice constraints, and shows how the semantic interpretation of a free choice particle in this language relies on syntactic restrictions.

Free choice has been associated on the one hand with the lexical semantics of the item in question, for example English *any*, and on the other hand with sentence-level modality, meaning that the context where free choice items may appear usually involves overt or covert modality. The Hebrew data provide evidence that free choice may also be

determined at the DP level, based on the functional category in which the relevant determiner is merged.

5.1.1 The data

Hebrew does not have an indefinite article, but it does have several other indefinite determiners, which, to my knowledge, have not been discussed in the literature. Adopting Haspelmath’s (1997) typology as a starting point, I focus on two series of indefinite pronouns in particular, the *še-hu* series which is assigned the *specific* and *nonspecific* functions by Haspelmath and the *kol* series which is assigned the Free Choice function. The relevant pronouns are illustrated in bold in Table 5.1. According to Haspelmath, the *še-hu* series is based on interrogative pronouns, and the determiner of this series, *eyze-še-hu*, is based on the pronoun *which*. To complete the picture, I have also added the pronouns that do not appear in Haspelmath’s typology. These are illustrated in the “Other” column and include postnominal *kol-še-hu* and the split versions of *eyze-še-hu* and *kol-še-hu*, both of which receive a free choice interpretation.

Table 5.1: Indefinite determiners series (preliminary)

Series:	<i>interrogative</i>	<i>še-hu</i>	<i>kol</i>	Other
Function:		specific/nonspecific	free choice	
	<i>eyze N</i> ‘which’ ‘some’	<i>eyze-še-hu N</i> ‘some’ ‘a certain’		<i>eyze N še-hu</i> ‘any’
			<i>kol N</i> ‘any’, ‘each’ ‘every’, ‘all’	<i>N kol-še-hu</i> ‘any’ ‘some’
				<i>kol N še-hu</i> ‘any’

In Hebrew, lexical and functional morphemes, such as inflection, complementizer, prepo-

sitional elements and the definite article, may undergo cliticization. The complex morpheme *še-hu* is either cliticized onto a preceding determiner, (1a), or free in configurations of the form [Determiner Noun *še-hu*], as in (1b). In the latter case, *še-hu* receives emphatic stress. In addition, *še-hu* cannot appear in the absence of a determiner, (1c), and it carries full ϕ -feature agreement, as in the paradigm illustrated in (1d,e).

- (1) a. Dani kana *eyze-še-hu* sefer (haxi yakar ba-xanut).
 Dani bought which-INDEF book (most expensive in-the-store)
 ‘Dani bought some/a certain book (the most expensive in the store).’
- b. ha-sifria le-rašutex, tivxeri *kol* sefer *še-hu*.
 the-library to-your-disposal, choose KOL book INDEF
 ‘The library is at your disposal, choose any book (whatsoever).’
- c. ha-sifria le-rašutex, tivxeri sefer **še-hu*.
 the-library to-your-disposal, choose book INDEF
 ‘The library is at your disposal, choose a book whatsoever.’
- d. *sefer*_[sg.m] *kol-še-**hu***_[sg.m] /**kol-še-**hi***_[sg.f]
*sfarim*_[pl.m] *kol-še-**hem***_[pl.m]
 ‘some/any book(s)’
- e. *xulča*_[sg.f] *kol-še-**hi***_[sg.f]
*xulčot*_[pl.f] *kol-še-**hen***_[pl.f]
 ‘some/any shirt(s)’

Še-hu can be divided into two morphemes: (i) *še* meaning ‘that’ is used as a complementizer, for example, in *that* relatives, as in (2a), and in *wh*-relatives, (2b); and (ii) *hu*, which is used not only for the third person pronominal form¹, as in (2c), but also

¹The 3rd person pronominal forms are: *hu*.3sg.m ‘he’, *hem*.3pl.m ‘they’, *hi*.3sg.f ‘she’, and

as the copula in present tense *be*-sentences, as in (2d).

- (2) a. ha-sefer še- karati
 the-book **that-** bought.1sg
 ‘the book that I bought’
- b. ha-yalda še- patra xida
 the-girl **who-** solved.3sg.f puzzle
 ‘the girl who solved a puzzle’
- c. hu kara sefer.
 3sg.m read book
 ‘He read a book.’
- d. ha-pil ha-hodi hu xaya be-sakanat hacxada.
 the-elephant the-Indian 3sg.m animal in-danger extinction
 ‘The Indian elephant is an animal in danger of extinction.’

The first puzzle that concerns the present work has to do with the reason for employing two seemingly equivalent determiners from a semantics/pragmatics point of view – prenominal *eyze-še-hu* and postnominal *kol-še-hu*, shown in (3a) and (3b), respectively. We need to find out what functions or properties distinguish between them.²

- (3) a. ani roča eyze-še-hu sefer.
 I want which-INDEF book
 ‘I want some/a certain book.’

hen.3pl.f ‘they’.

²A note on *eyze*: this pronoun may be inflected for gender, but not for number, and has the forms *eyze*.sg.m/pl and *eyzo*.sg.f. I agree with Borer’s (2005) observation that the gender distinction (of *eyze*) is slowly disappearing from Modern Hebrew, and *eyze* is being used as the default form.

- b. ani roča sefer *kol-še-hu*
 I want book KOL-INDEF
 ‘I want some/any book.’

From a semantic/pragmatic perspective, alternations of this type have been previously discussed in the literature, for example, by Chierchia (2006) for Italian and by Jayez and Tovenà (2005) for French, a.o. However, this research does not examine these alternations from a syntactic point of view. The contribution of the present chapter consists of adding the effects of the syntactic component of grammar, and investigating the relation between syntactic position, semantic interpretation and pragmatic import.

The second puzzle revolves around the properties of the *še-hu* particle, which is shared by the two determiners in (3), and is rooted in the observation that its interpretation and domain widening property are related to its syntactic function – when *še-hu* follows the noun, the resulting indefinite phrase can only express (maximal) free choice and nonspecificity, as in (4).

- (4) a. im timče’i *eyzo/kol* šgiya *še-hi*, titkašri elai.
 if find.2sg.f.FUT which/KOL mistake INDEF, call.2sg.f.FUT to-me
- b. im timče’i šgiya *kol-še-hi*, titkašri elai.
 if find.2sg.f.FUT mistake KOL-INDEF, call.2sg.f.FUT to-me
 ‘If you find any mistake, call me.’
- Maximal Free Choice: *Any mistake is a possible option.*
 Nonspecificity: *There is no mistake in particular that we are looking for.*

In contrast, when it precedes the noun, the resulting indefinite phrase can have a specific reading or a nonspecific reading:

(5) ani mexapeset *eyze-še-hu* sefer.

I looking-for which-INDEF book

‘I’m looking for some/a certain book.’

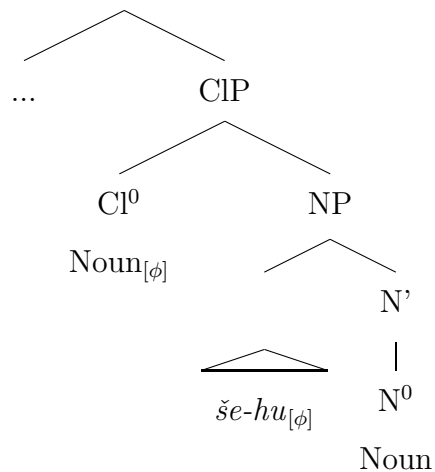
Specific scenario: I am looking for a book called *The Bartimaeus Trilogy*.

Non-specific scenario: I am looking for a book. Any book will do.

This is crucial since domain widening is usually considered to reside in the semantics, as part of the lexical semantics of the element carrying this property. The Hebrew data show that a semantic property may be subject to syntactic restrictions, i.e. it may be determined depending on the syntactic properties of the position it is merged into.

My proposal hinges on this observation. I propose that, semantically/pragmatically, *še-hu* is the overt realization of free choice (it indicates maximal domain widening). Syntactically, *še-hu* is a complementizer phrase, and can be interpreted in two positions, depending on the category it modifies. When modifying the noun, it is merged in the specifier of NP and an agreement phrase (Classifier Phrase; Borer 2005) is triggered. The noun moves to Cl^0 , and we have full ϕ -agreement between the noun and the *še-hu* specifier phrase. When *še-hu* modifies a determiner – *kol* or *eyze*, it functions as a complement.

(6)



In terms of agreement relations, it should be noted that postnominal modifiers in Hebrew always fully agree in number and gender with the noun they modify, (7a). In contrast, prenominal modifiers do not show obligatory agreement with the noun phrase they modify, (7b,c).

- (7) a. balonim *čiv'oni'im* *rabim* mil'u et ha-šamaim.
 balloon.pl.m colorful.pl.m many.pl.m filled.pl ACC the-sky
 'Many colorful balloons filled the sky.'
- b. *eyzo* ha-čaga tova rainu!
 which.sg.f the-play.sg.f good.sg.f saw.1pl
 'What a good play we've seen!'
- c. *eyze* ha-čagot tovot rainu!
 which the-play.pl.f good.pl.f saw.1pl
 'Such good plays we've seen!'

I suggest that number and gender features in Hebrew are able to percolate to the higher determiner phrase, and that this explains why the prenominal determiner *eyze* shows partial agreement, in gender, with the noun phrase.

The chapter is organized as follows. Section 2 provides a brief survey of the literature discussing the functional structure of nominal phrases in Hebrew, focusing on the properties of bare singulars, Construct State (in)definites, and functional differences between definite and indefinite noun phrases in Hebrew. It makes the point that indefinite noun phrases in Hebrew are NumPs rather than DPs, and shows how such an approach works within the Nominal Mapping Parameter framework (Chierchia 1998). Section 3 examines the *še-hu* particle and proposes syntactic configurations for *še-hu* indefinites. It is argued that functionally, *še-hu* is a CP, merged as either a complement to a determiner or as a modifier to the noun. Section 4 discusses the results of the ex-

perimental task in relation to the proposal put forth in this chapter that *še-hu* expresses free choice and that this property is dependent on its syntactic position relative to the noun; the results confirm the research hypothesis. Section 5 concludes the chapter and provides a revised functional map for indefinite pronouns in Hebrew.

5.2 Nominal phrases in Hebrew

Studies on the internal structure of noun phrases in Hebrew have been concerned with several related issues – the Construct State and the Free Genitive constructions, definiteness and its properties, and Case.

- (8) a. beyt ha-mora [Construct State]
house the-teacher
- b. ha-bait šel ha-mora [Free Genitive]
the-house of the-teacher
'the teacher's house'

The focus of the present work differs from previous studies in that it discusses simple indefinite noun phrases. Hence, issues debated with respect to definite noun phrases (here inclusive of the Construct State construction) do not affect/concern the present work. Nevertheless, they provide a strong and necessary basis for the discussion on the internal functional structure of indefinite noun phrases in Hebrew.

The literature discussing the internal structure of Hebrew nominal phrases has been mainly centered around two issues – (a) the type and range of movement involved in these constructions, and (b) the position occupied by determiners in Hebrew (the definite marker bound morpheme *ha-* 'the', numerals, and so on). Shlonsky (2004), for example, argues for a phrasal movement account and against head-movement, based (partly) on word order evidence from adjectival hierarchies. In contrast, Ritter (1988,

1991), Hazout (1991), Siloni (1997), and Borer (1999), among others, have argued for N-to-D movement in Semitic languages. This type of movement has been favored for explaining the derivation of two constructions available in Hebrew and other Semitic languages – the Construct State (derived) construction and the Free State (underived) construction, and is meant to account for word order and binding facts.

Within this stream of research, opinions differ with respect to the range of the head-movement. Some researchers argue that N^0 always moves all the way to D^0 (Siloni, 1996, 1997). However, the lack of an indefinite article has prompted other researchers, for example Ritter (1991), to suggest that the noun moves all the way to D^0 only in the Construct State construction in order to check a case feature, but not in the Free State construction where N^0 moves to a lower position – NUM^0 , an intermediate position within the determiner phrase. This is contrasted with the case where there is overt definiteness marking, with *ha-* ‘the’, where the noun, marked by an uninterpretable feature [def], is attracted to move all the way up to D^0 to be checked by the interpretable [def] feature on D^0 .

This discussion relates to the issue of empty categories (and the reasons for a DP projection). In terms of agreement between the noun and various elements within the noun phrase, differences in agreement patterns have been observed between the pre- and the postnominal position. For example, in Hebrew, postnominal material fully agrees with the noun in definiteness, number and gender, (9a), while prenominal material does not necessarily display agreement, (9b).

- (9) a. *ha-yeladim kul-am patru xida.*
 the-kids.pl.m KOL.3pl.m solved.3pl.m puzzle
 ‘The kids, all of them, solved a puzzle.’
- b. *kol yeled patar xida.*
 KOL kid.sg.m solved.3sg.m puzzle
 ‘Each child solved a puzzle.’

This does not mean that agreement is prohibited prenominally, only that it is obligatory postnominally. Indeed we find such a case with some of the indefinite pronouns under discussion here. Both prenominal *eyze-še-hu* and postnominal *kol-še-hu* agree in number and gender with the noun they modify. However, the prenominal determiner *kol* does not carry any agreement features, and the prenominal determiner *eyze* shows only partial agreement (gender). A question to consider then is whether an empty D category should be postulated in the case of Hebrew indefinite noun phrases, and if yes, what would motivate it? I address this issue from the point of view of bare singular noun phrases in Hebrew, which are shown to support the lack of a DP projection.

I begin by discussing the lack of an empty D projection in the case of singular indefinite bare noun phrases in Hebrew, in view of Chierchia's (1998) Nominal Mapping Parameter, followed by evidence from the Construct vs. Free State genitive constructions (Ritter 1991, Danon 2006). I extend these findings to show that indefinite noun phrases in Hebrew may also lack the DP level even in the case of an overt lexical indefinite determiner. I follow Borer's (2005) insight with respect to the property of some indefinite elements in Hebrew, such as *kol*, to merge as heads or as specifiers, a property which allows them to remain within the domain of a noun phrase or of a number phrase with no need to project further. Finally, I address syntactic aspects of split versus nonsplit indefinite phrases headed by the prenominal *eyze-še-hu* or the postnominal *kol-še-hu* determiners, followed by a discussion of the experimental results.

5.2.1 Bare nominals

Hebrew has a definite article, the bound morpheme *ha-* 'the', which can be prefixed to nouns, adjectives (the *definiteness spreading* phenomenon), as in (10a), and even to the indefinite pronoun *kol* 'any, each, every, all', as in (10b).

- (10) a. *ha-xatul ha-katan hit'ateš.*
 the-cat the-small sneezed
 'The small cat sneezed.'
- b. *ha-kol muvan axšav.*
 the-KOL understood now
 'All/everything makes sense now.'

The literature on Hebrew brings ample evidence that the *ha-* morpheme behaves like a definite article in that it triggers the projection of the D category and the movement of the noun to D for the purpose of checking a strong [def] feature.

However, this analysis cannot be assumed for indefinite noun phrases in this language. Hebrew lacks an indefinite article, but compensates with flexible bare nouns and a system of indefinite determiners. Most important is the fact that bare singular nouns in Hebrew can refer to kinds, not only from the object position, where they would be licensed by a lexical head in the sense of Longobardi (1994), but also from the subject position, (11).

- (11) **namer** čad **ayalot.**
 tiger hunts deer
 'The/A tiger hunts deer.'

In addition, a bare singular noun in Hebrew is able to take unexpected wide-scope relative to the VP, as in (12a).

- (12) a. Dani roče lifgoš **koxav-SG kolnoa.** [$\exists > VP / VP > \exists$]
 Dani wants meet.INF star cinema
 'Dani wants to meet a movie star.'

- b. Dani roče lifgoš **koxvey-PL kolnoa**. [VP>∃]
 Dani wants meet.INF stars cinema
 ‘Dani wants to meet movie stars.’

Usually, an indefinite article would be needed to shift the type of the NP to $\langle e \rangle$ to “allow” a wide scope reading, referential expressions being of type $\langle e \rangle$. In (12a), the bare singular noun phrase *koxav kolnoa* ‘movie star’ can take both wide and narrow scope relative to the VP, unlike the bare plural in (12b), which can only be interpreted with narrow scope. Under the narrow scope (non-specific) interpretation, the bare singular noun can be seen as kind-referring, while under the specific interpretation (there is a movie star x , such that Dani wants to meet x), the bare noun parallels the behavior of the English singular indefinite. Thus, bare nouns in Hebrew can be interpreted as kind-referring and as indefinites, specific and non-specific.³ Semantically, this translates into a property type for the object reading, or into an argumental type for the kind reading.

This observation brings us to Chierchia’s (1998) system according to which nouns are universally kind-referring. Chierchia proposes a Nominal Mapping Parameter (NMP) which classifies languages according to their flexibility in allowing bare nouns as arguments, by using a set of binary features $[\pm\text{argument}, \pm\text{predicate}]$. This results in three typologically distinct sets of languages, reflecting differences between mass versus count nouns. Chinese and Japanese, for example, are $[+\text{arg}, -\text{pred}]$, Romance languages are $[-\text{arg}, +\text{pred}]$, while Germanic and Slavic languages are $[+\text{arg}, +\text{pred}]$. Applied to Hebrew, where bare nouns are allowed as arguments, the NMP maps this language to $[+\text{arg}, +\text{pred}]$, in the same group, in this typology, as Germanic and Slavic languages. This means that noun phrases in these languages denote either kinds or predicates and their phrasal projections can shift between argumental and predicative. This is achieved through a system of type shifting operators in the following way: if a noun is

³For a detailed discussion of kind-referring bare nouns, see also Doron (2003), Tonciulescu (2009), for Hebrew, and Mathieu (2009), for Old French.

argumental, it can be predicativized via the ‘up’ operator \cup (i.e. $\langle e \rangle \rightarrow \langle e, t \rangle$); as predicates, count nouns are shifted via the ‘down’ operator \cap to argumental (i.e. $\langle e, t \rangle \rightarrow \langle e \rangle$). In turn, these type shifts are constrained by the blocking principle defined in (13):

- (13) The Blocking Principle (Type Shifting as Last Resort): For any type shifting operation τ and any X: $*\tau(X)$, if there is a determiner D such that for any set X in its domain, $D(X) = \tau(X)$ (Chierchia, 1998:360)

The Blocking Principle asserts that if a language has an overt means of expressing type-shift, such as a lexical item (determiner), the language has to use it before resorting to covert type-shift. However, we find optionality in Hebrew, in both the *definite* domain, where the definite marker is optional for kind-reference, and in the *indefinite* domain, where the several indefinite determiners available, again, are optional.

Chierchia’s system also makes a distinction in terms of the selectional properties of predicates – object-selecting, kind-selecting, or both, and accounts for the semantic interaction between type of verb and the bare noun it selects for. This distinction is needed for the interpretation of kind-denoting noun phrases in episodic sentences. One such case is shown in (14a), where an object-selecting predicate interacts with a kind-referring noun phrase, giving rise to an apparent type-mismatch problem – the predicate wants a type $\langle e, t \rangle$ argument, a property, but instead receives a type $\langle e \rangle$ argument. In order to resolve this type-mismatch, Chierchia introduces the Derived Kind Predication rule, in (14b). This rule applies whenever an object-level argument slot in a predicate is filled by a kind (in an episodic frame). The type of the predicate will be automatically adjusted by introducing existential quantification over instances of the kind, as in (14c) (Chierchia, 1998:364).

- (14) a. *That kind of animal* is ruining my garden. [definite NP]
 b. Derived Kind Predication Rule: If P applies to objects and k denotes a kind, then $P(k) = \exists x[\cup k(x) \ \& \ P(x)]$ (Chierchia, 1998:364)
 c. $\exists x[\cup \text{that kind of animal}(x) \ \& \ \text{ruin my garden}(x)]$

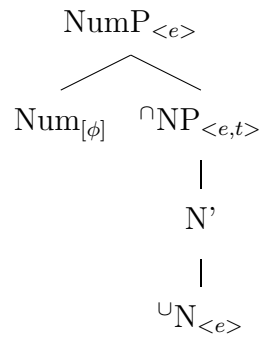
If bare arguments refer to kinds, then the DKP extends to them as well, as in (15), where the application of this rule takes the noun phrase from a mass or group reading to an atomic, property, reading.

- (15) a. *Lions* are ruining my garden. [bare NP]
 b. ruining-my-garden(\cup lions)
 \Leftrightarrow (via DKP) $\exists x[\cup \text{lions}(x) \ \& \ \text{ruining my garden}(x)]$
 i.e., it is not the case that generally this species tends to ruin my garden but rather that there are some lions now that happened by my garden and are making a mess.

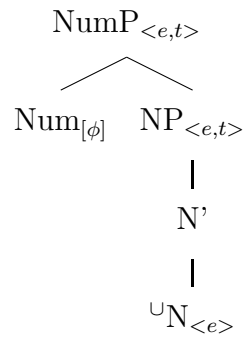


This system provides us with a way of motivating the lack of D projection in Hebrew indefinite noun phrases. If a bare singular noun phrase can be kind-referring, and as such of type $\langle e \rangle$, then there is no reason to project D for argumenthood purposes. Preliminary structures are proposed in (16). I assume that nouns always project NumP for ϕ -agreement purposes, and, following Chierchia's system, that NumP can be of an argumental or a predicative type.

- (16) a. Kind-referring noun phrase in episodic contexts:



- b. Object-referring noun phrase:



The lack of an indefinite article in Hebrew has raised the question of what heads an indefinite bare noun in this language. Danon (2006:24) considers three options (suggested also in Dobrovie-Sorin (2000)).

1. Hebrew indefinites are DPs in which the noun raises to D.
2. Hebrew indefinites are DPs headed by an empty D.
3. Hebrew indefinites lack the DP level.

These options are discussed next.

5.2.2 Construct State nominals (N-to-D)

The idea that Hebrew indefinites are DPs in which the noun raises to D^0 , has been widely accepted in the case of Construct State nominals where the noun moves to D^0 in order to check an interpretable genitive case feature located on D^0 .

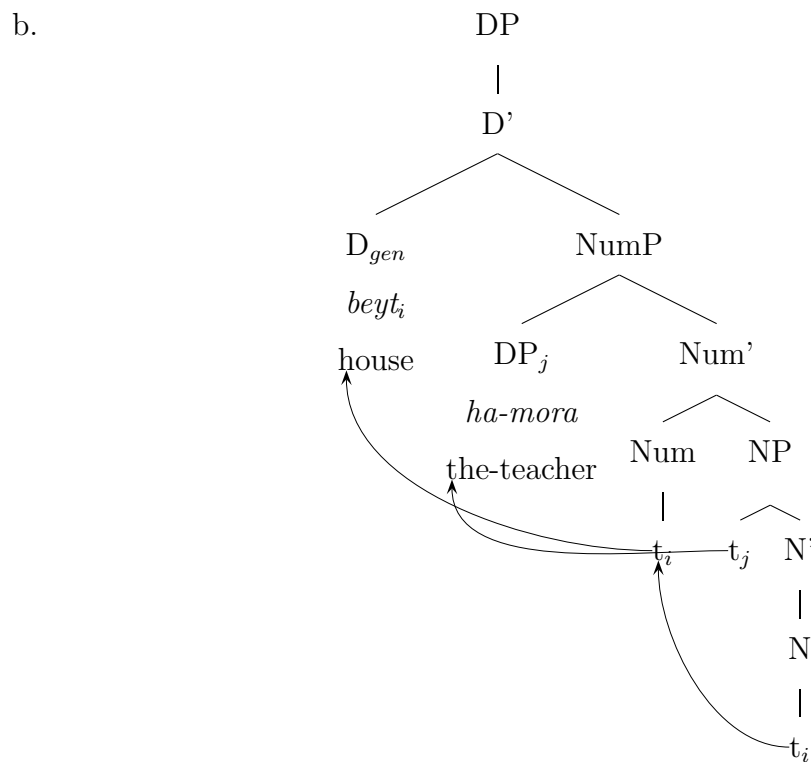
A most influential research into Hebrew nominal phrases was initiated by Ritter's (e.g. 1991) proposal for two functional projections in the Hebrew noun phrase – DP and NUMP, based on the analysis of three genitive constructions – (1) Construct State noun phrases, which provide evidence for DP, (2) Free Genitive noun phrases, which provide evidence for NumP, and (3) Clitic-doubled Construct State noun phrases, which are a combination of (1) and (2) in terms of Case assigning strategies. These are illustrated in (17).

- (17) a. yaldey ha-gan [Construct State NP]
 children the-kindergarden
 ‘the children of the kindergarden’ (Ritter, 1991:38)
- b. ha-ganenet šel ha-yeladim [Free Genitive NP]
 the-kindergarden-teacher of the-children
 ‘the children’s kindergarden teacher’
- c. gan-o šel Itamar [Clitic-doubled Construct State NP]
 kindergarden-his of Itamar
 ‘Itamar’s kindergarden’

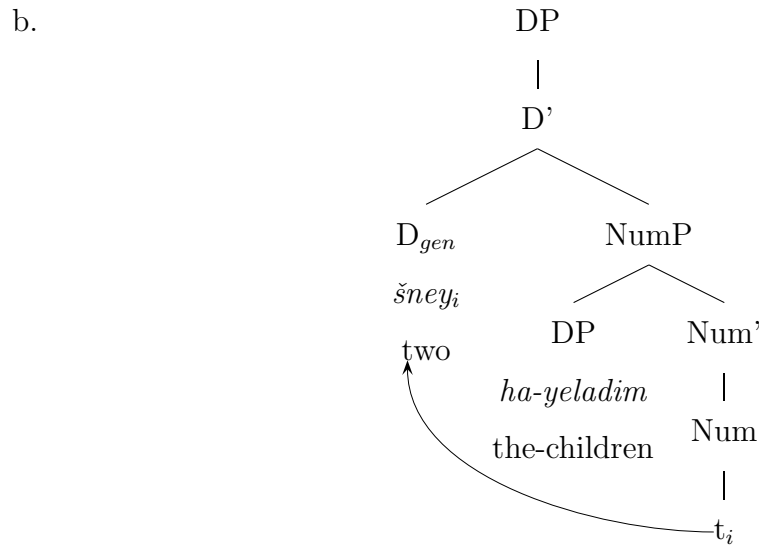
Each of the three syntactic heads of the noun phrase is associated with a different feature – N hosts gender features, Num hosts number features and D hosts definiteness (which includes both definiteness and indefiniteness in the case of Construct State nominals) (Ritter, 1991:58).

Evidence for the DP projection can be found by looking at simple Construct State noun phrases. A Construct State (henceforth, CS) is a type of noun phrase which contains a bare genitive phrase immediately following the head noun or numeral (see (18)). This genitive phrase is not overtly case marked (Ritter, 1991:38). D^0 hosts the genitive case feature, which *attracts* the bare genitive phrase (triggers movement of the noun or numeral to D^0).

- (18) a. *beyt ha-mora* [Simple Construct State]
 house the-teacher
 ‘the teacher’s house’ (Ritter, 1991:40)



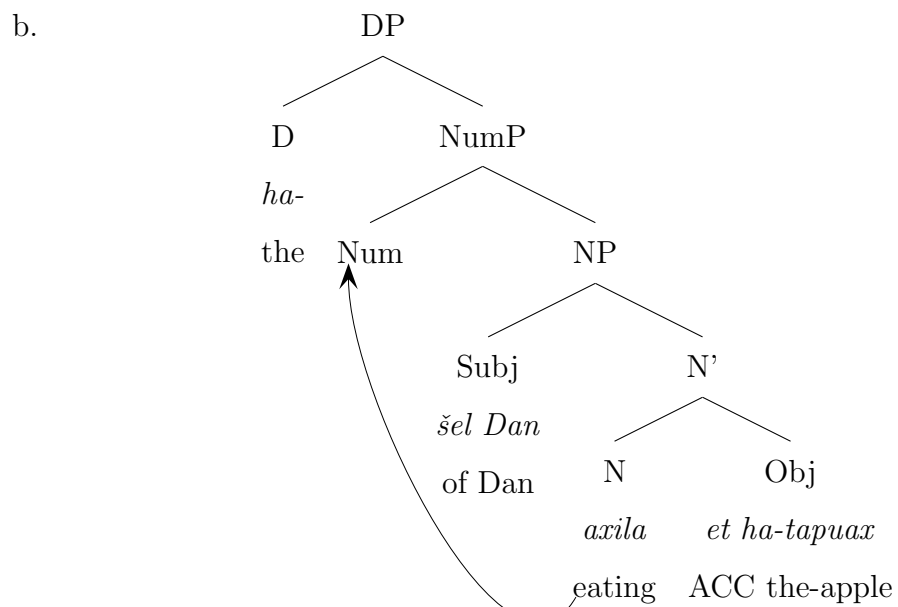
- (19) a. *šney ha-yeladim* [DET-headed Construct State]
 two the-children
 ‘the two children’



(from Danon (1997:13), following Ritter (1991))

A Free Genitive Construction containing both proposed projections is shown in (20).

- (20) a. ha-axila šel dan et ha-tapuaχ
 the-eating of Dan ACC the-apple
 ‘Dan’s eating of the apple’



(Ritter, 1991:43)

To sum up, the category D hosts the [genitive] and the [definite] features. Both are strong features triggering N-to-D movement within the noun phrase.

The question now is whether in the case of simple indefinite noun phrases, an empty D category is projected (in the sense of Longobardi 1994), or whether not all types of noun phrases in Hebrew project a DP level.

Is there an empty D?

The possibility that Hebrew indefinites are DPs headed by an empty D does not seem to be the right one for Hebrew indefinite phrases. Longobardi (1994) has argued that in the case of Italian the empty D position is motivated by the fact that bare nouns in Italian can only appear in lexically-governed positions, which explains why preverbal bare nouns are disallowed in Italian (and more generally in Romance languages). In contrast, Hebrew *does* allow bare nouns in subject position. This distinction is explained by Chierchia's Nominal Mapping Parameter in terms of different feature specification for the noun: [+predicate, -argument] for Romance languages, versus [+predicate, +argument] for Hebrew. Some examples are given in (21):

- (21) a. **namer** mit'asef leyad mekorot mayim b-a-erev.
 tiger gathers near sources water in-the-evening
 'The tiger gathers near water sources in the evening.' (Doron, 2003:10)
- b. **xatul** čad **axbar**.
 cat hunts mouse
 'A/The cat hunts a/the mouse.'

As discussed in section 2.1, since *namer* 'tiger' in (21a) is kind-referring, it is of the right semantic type, i.e. argumental (<e>), and therefore there is no need to project D. It should also be noted that the verb requires a group reading of the noun, which

is possible via a generic operator taking scope over the sentence. In (21b), we have a flexible verb, *hunt*, which can select for either a property (thus triggering the type-shifting of both nouns to a predicative type $\langle e,t \rangle$), achieved via the DKP which introduces existential quantification at the VP level), or, it can select for kinds (in a manner similar to (21a)).

Thus, it is not apparent what kind of syntactic or semantic content would be associated with an empty D position in the case of indefinite (bare) noun phrases in Hebrew. The conclusion is that nouns in Hebrew need not project as far as D. Num⁰ provides an adequate landing site for the noun.

We now turn to modified singular nouns and to the syntactic properties of the modifying determiners.

5.2.3 Indefinite and modified nominals

Ritter (1991) argues that the Num category hosts the number specification of the noun phrase. In addition, Num can host quantificational-like elements such as *kol* ‘every/each’.⁴ This is motivated by the fact that *kol* can select for a plural or a singular complement noun phrase, and predicts that *kol* can co-occur with the definite determiner *ha-*, which in this system is hosted under D⁰. For a definite DP, *kol* can co-occur with a singular or plural DP, (22).

- (22) a. *kol ha-sefer haya male be-tmunot.*
 KOI the-book was full of-pictures
 ‘The whole book was full of pictures.’

⁴In Chapter 3 of this dissertation, I propose that *kol* does not have quantificational force of its own, but rather, it is an indeterminate pronoun, which associates with a universal operator $[\forall]$ (in the sense of Kratzer and Shimoyama 2002). Therefore, the term *quantificational* is not meant to imply quantificational force, in this case, but rather to refer generally to X⁰-type pronominal modifiers.

- b. *kol ha-sfarim mesudarim al ha-madaf.*
 KOL the-book.pl arranged.pl on the-shelf
 ‘All the books are arranged on the shelf.’

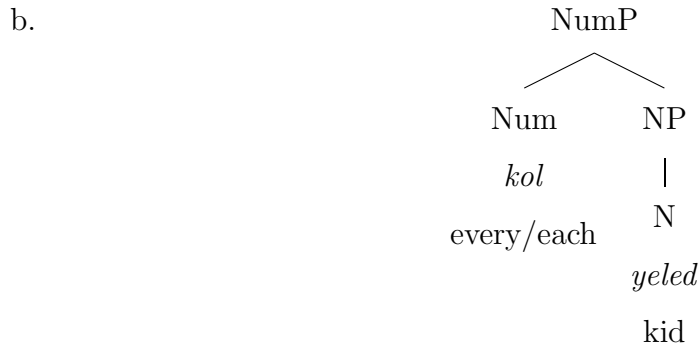
For an indefinite DP, *kol* can only take a singular complement, (23).

- (23) a. *kol sefer mesuman im madbeka.*
 KOL book tagged with sticker
 ‘Each/every book is tagged with a sticker.’
- b. *#kol sfarim mesumanim im madbeka.*
 KOL book.pl tagged with sticker
 ‘All (the) books are tagged with a sticker.’

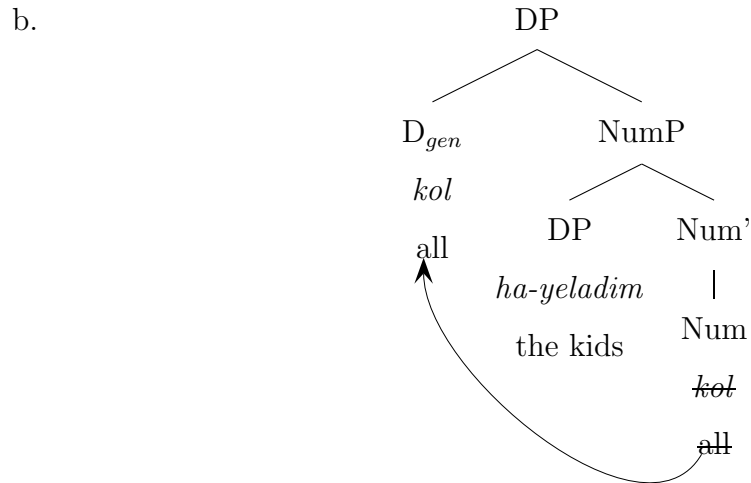
The following structures, adapted from Ritter (1991:56-7), illustrate this distribution.

(25) is considered a determiner-headed construct state construction. The features [def] and [gen] trigger the Num-to-D movement.

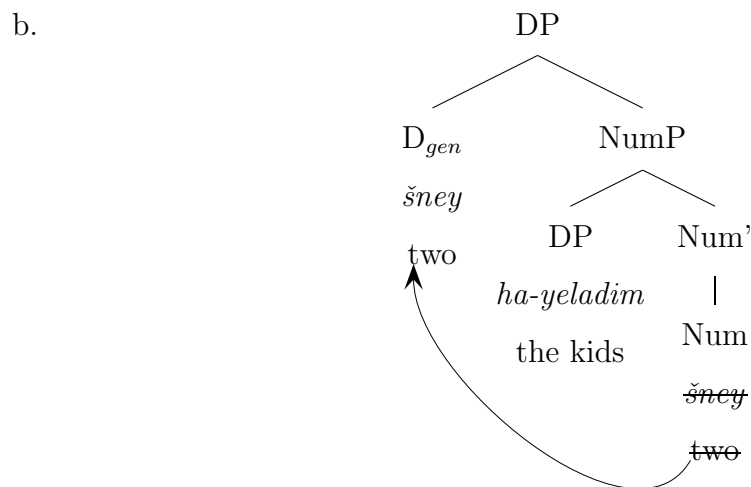
- (24) a. *kol yeled*
 ‘each/every child’



- (25) a. kol ha-yeladim
KOL the-kids
'all the kids'



- (26) a. šney ha-yeladim
two the-kids
'the two kids'



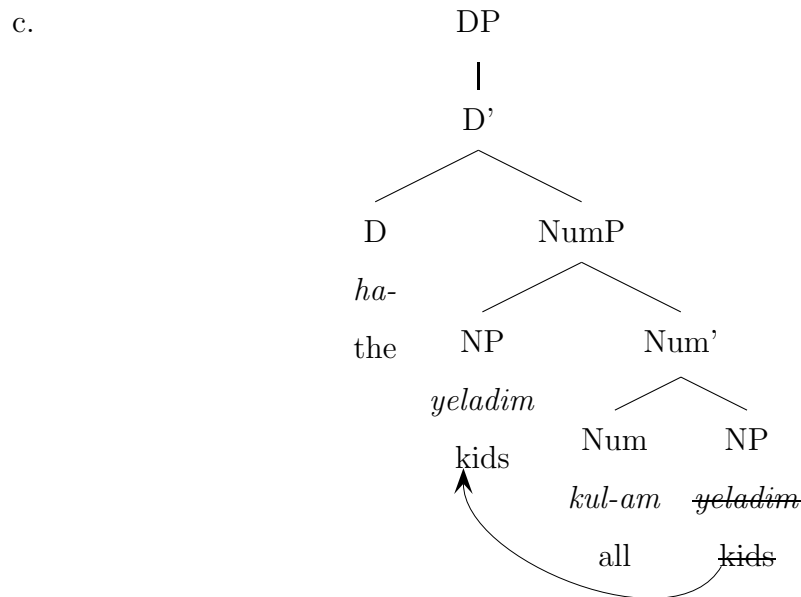
Note that in (25) and (26) we have a functional head and no (lexical) complement. This analysis is problematic in view of current assumptions with respect to the syntax of NPs/DPs/CPs. In what follows, I adopt a more standard structure, in which the

Num head takes an NP as its complement, in line with Borer (2005).

It has been observed in the literature (Ritter, 1991:59 (footnote); Shlonsky, 1990) that the presence or absence of agreement on the functional head may determine whether the quantifier will precede or follow the quantified determiner phrase; compare (26) with (27). In (27c), I apply Ritter's proposal to noun phrases showing postnominal agreement. It should be noted that this approach does not capture the ϕ -agreement relation between the noun phrase and its modifier, since in this case, the noun phrase *is* the modifier. Under current assumptions, this relation would be captured as spec-head agreement between the noun phrase and its specifier.

(27) a. ha-yeladim šney-hem
 the-kid.pl.m two-3pl.m(both of them)
 'both of the kids'

b. ha-yeladim kul-am
 the-kid.pl.m all-3pl.m(all of them)
 'all of the kids'



The observation that the presence or absence of agreement on the functional head may determine whether the quantifier will precede or follow the quantified determiner phrase (Shlonsky, 1990), does not account for the pre- versus postnominal positions of *eyze-še-hu N* and *N kol-še-hu* since in both cases we have number and gender agreement with the noun contributed by the *še-hu* particle, and so we would expect both determiners to appear postnominally. Furthermore, the determiner *eyze*, which is marked for gender, is always prenominal.

In the next section, I explore the properties of the *še-hu* particle and its effects on the syntax and semantics of indefinite phrases.

5.3 Še-hu: a Free Choice modifier

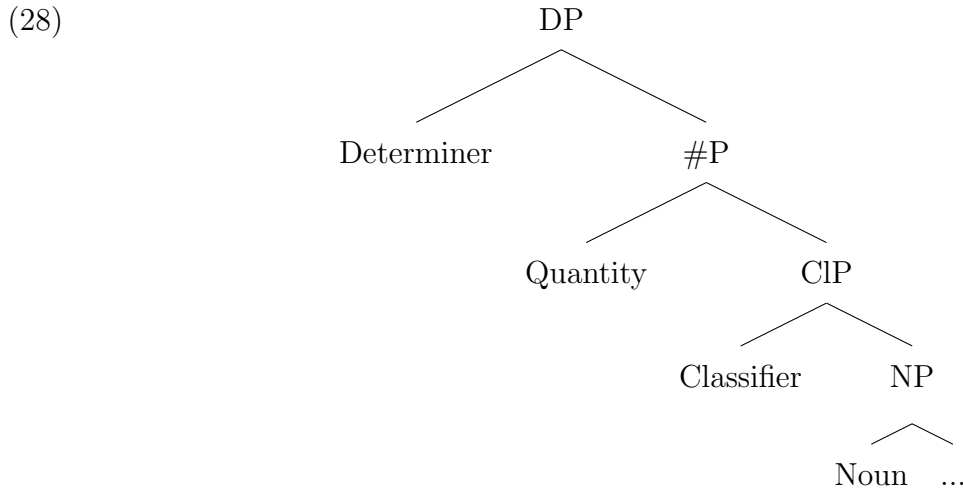
5.3.1 Syntactic assumptions

Outlined here are some of the syntactic assumptions that I will be making. Although different DP internal functional projections have been proposed in the literature on Hebrew⁵, here I will assume Borer's (2005) proposal for a universal functional structure.

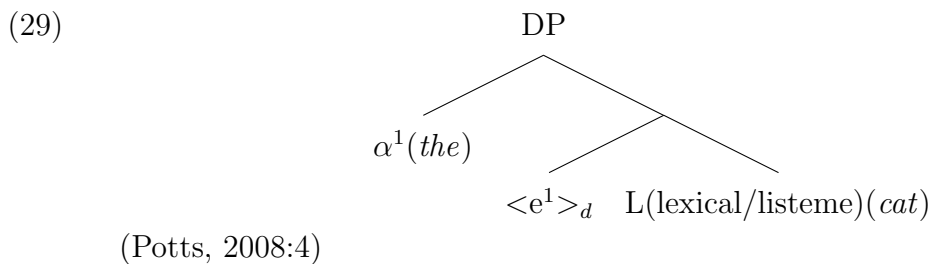
Borer's proposed system distinguishes between (i) open-class lexical items (listemes), which are unspecified for grammatical properties, and (ii) functional heads, which are hierarchically arranged to specify grammatical properties (Borer, 2005:24,28; Potts, 2008:3). Crosslinguistically, four functional projections, (28), should cover the range of interpretations available with a variety of items belonging to different categories –

⁵For example, Shlonsky 2004 proposes different functional projections for different types of numerals – CardP and OrdP, where CardP hosts quantificational properties, while OrdP hosts the adjectival-like properties of ordinal numerals, which in Hebrew must follow the noun and show ϕ -agreement, similarly to adjectives in this language. Shlonsky also proposes that *kol* projects a Quantifier Phrase above the DP; the latter gives *kol* quantificational force of its own, which is something that I argue against in this thesis.

numerals, determiners, and so on. The Quantity Phrase (#P) hosts quantifiers and numerals, and the Classifier Phrase (ClP) hosts number and gender agreement. With respect to Hebrew, these two projections are equivalent to the Number Phrase projection proposed by Ritter (1991), except that for Ritter the gender feature is part of the noun specification.

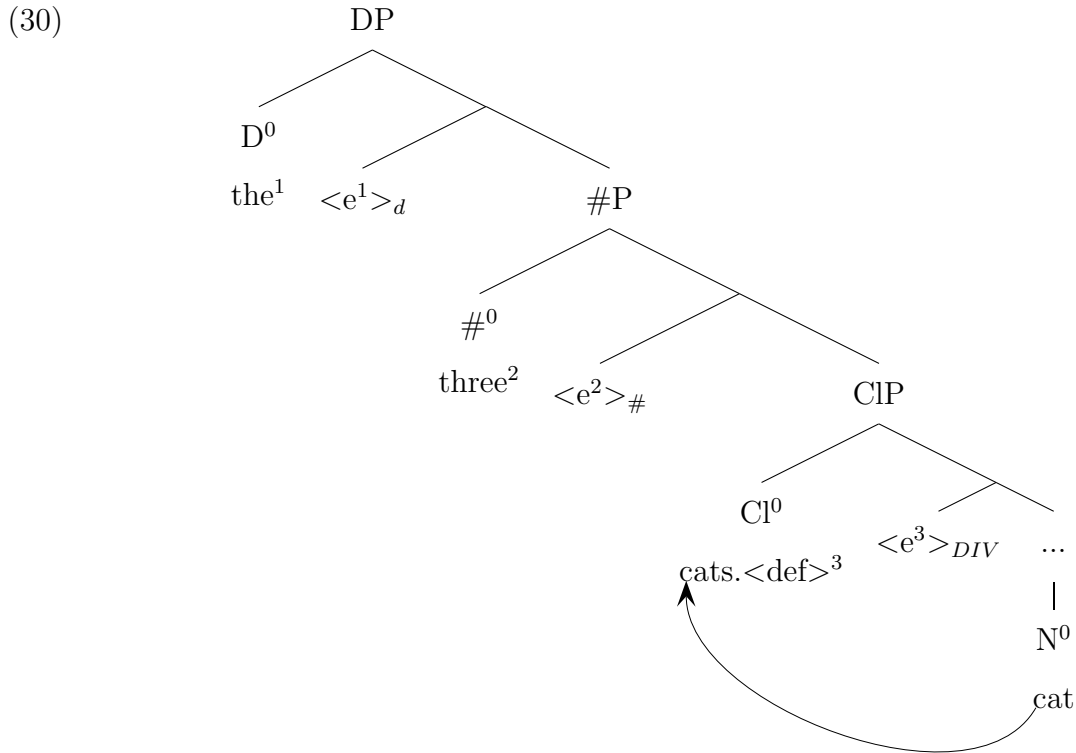


Borer also introduces two concepts – *open values* and *range assignment*. A phrase such as *the cat* would be generated as follows:



where α (the determiner) determines the range to be assigned, and $\langle e \rangle$ is an open value which assigns grammatical properties to its sister, a lexical item; in other words, it determines that *cat* is a noun. The phonological output is the definite phrase *the cat*.

(30) shows the full range of functional projections proposed for the nominal domain, as exemplified with the phrase *the three cats*.



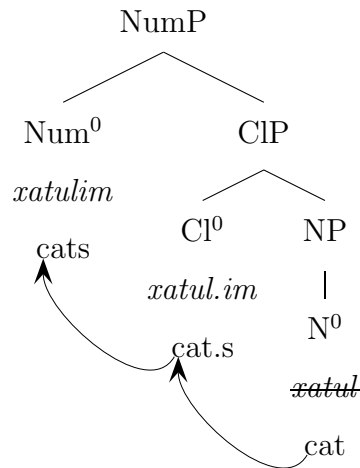
In (30), $\langle e \rangle_d$ has scope over the entire structure and determines that *cat* is of category N. The intermediate projections further assign grammatical properties to N – $\langle e \rangle_\#$ determines that $\langle e \rangle_{div}$ should assign plural morphology to N. $\langle e \rangle_{div}$ is responsible for full ϕ -agreement, and the phonological result of N merging with $\langle e \rangle_{div}$ is the form *cats*.

In Hebrew, there is also gender agreement between the noun and its modifier, in this case a cardinal numeral. Ritter (1991) proposes that gender is inherent in nouns in Hebrew. In contrast, in Borer’s approach, lexical items are not specified for grammatical properties and therefore the gender feature should be assigned through a functional element. I suggest that both number and gender are assigned through $\langle e \rangle_{div}$. I assume that the Quantity/Number Phrase only has a quantification role, and that ϕ -features can percolate up the structure to assign gender agreement, for example, in the case of

eyze.

One notational modification is introduced here, namely Number Phrase (NumP) instead of a Quantity Phrase (#P); Num⁰ hosts quantificational elements (e.g. numerals) and indefinite pronouns such as *kol* and *eyze*. Given that bare singular noun phrases need not project a DP level, for a noun phrase such as *cats*, we would have the derivation in (31).

(31)



The motivation for the NumP projection in Hebrew is in a way similar to that of the DP in Longobardi (1994). This projection can contain overt or covert modifiers and is responsible for type shifting the noun when necessary. As we have seen at the beginning of this chapter, in Hebrew, where bare singulars are less restricted than in other languages, their interpretation as kinds/arguments or as properties is determined at the NumP level.

5.3.2 The syntax of *še-hu*

Še-hu is a complex particle composed of two parts: *še*, which is a complementizer (Shlonsky, 1997), and *hu*, which in Hebrew stands for both the copula *be* and the third-person personal pronoun. *Še* may attach to different categories: in the sentential adjuncts in (32a,b), *še* attaches to a prepositional component, as well as to the

proposition it introduces; in (32c), *še* attaches to a small relative clause.

- (32) a. *k-še- yored gešem, ani ohev letayel ba-xuč.*
 PREP-that- falls-down rain I like take-a-trip.INF in-the-outside
 ‘When it rains, I like to walk outside.’
- b. *k-še- hem bau le-bikur, hevi’u yain.*
 PREP-that- 3pl.m came.3pl to-visit brought.3pl wine
 ‘When they came to visit, they brought wine.’
- c. *ha-xatul še- pihek halax lišon.*
 the-cat that- yawned went sleep.INF
 ‘The cat who yawned went to sleep.’

Shlonsky (1997:41) gives the following structure to *k-še* ‘when’:



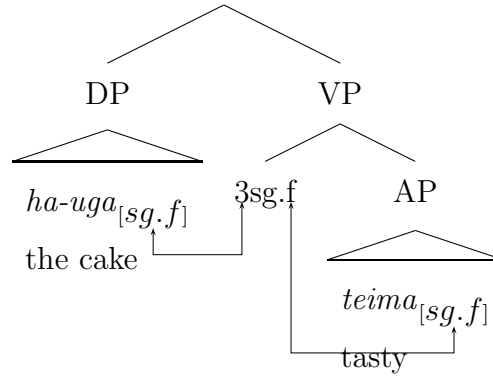
I propose to analyze *še-hu* ‘that-be’ as a relative clause, a CP, which in the case of our split determiners creates a dependency between the D-domain and the N-domain. Evidence for such a dependency comes from cases in which modifiers cannot (usually) intervene in the split construction.

- (34) a. tavi ugiot teimot *kol-še-hen*.
bring.2sg.f cookies.pl.f tasty.pl.f KOL-INDEF
‘Bring any tasty cookies (whatsoever).’
- b. tavi *kol* ugiot ?teimot *še-hen*.
bring.2sg.f KOL cookies.pl.f tasty.pl.f INDEF
- c. tavi *kol* *štey ugiot *še-hen*.
bring.2sg.f KOL two.f cookies.pl.f INDEF
- d. tavi *kol* ugiot *še-hen* *teimot.
bring.2sg.f KOL cookies.pl.f INDEF tasty.pl.f

I also suggest that the *hu* part of *še-hu*, stands in fact for the copula *be* which in Hebrew is either phonologically null, as in (35a) or, when overt, has the same morphological form as the third-person pronoun, (35b), including inflection for number and gender. Note that in (35b) the third-person pronominal copula agrees in gender and number with both the subject and the object.

- (35) a. ha-uga teima.
the-cake.sg.f tasty.sg.f
‘The cake is tasty.’
- b. ha-uga hi teima.
the-cake.sg.f **3sg.f** tasty.sg.f
‘The cake is tasty.’

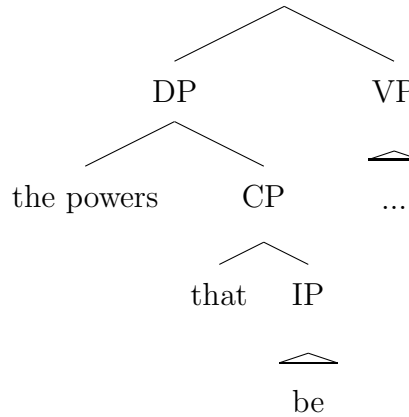
c.



For illustration, the structure that I attribute to *še-hu* is comparable to *be*-relatives in English such as (36):

(36) a. *The powers that be* decided that today it should rain.

b.



The difference between the English construction and the Hebrew one is that in English we have a non-finite CP, whereas in Hebrew we have a finite CP. The latter allows for (gender and) number agreement with the noun phrase. This is similar to English finite relative clauses, which also show agreement with the noun they modify, as illustrated in (37).

- (37) a. Every student_[sg] [who is_[sg] thinking about applying] must complete a form.
- b. All students_[pl] [who are_[pl] are thinking about applying] must complete a form.

When discussing the structure of indefinite phrases, we need to take into account the properties of three elements: the indefinite pronouns *kol* and *eyze*, the *še-hu* phrase, and their possible combinations which are explored in the next section.

5.3.3 Pre- and postnominal modifiers

I consider *eyze* to be a determiner merged in D^0 . *Kol* may be either a head or a phrase and, given its quantificational-like properties, merges either in Num^0 or in the specifier of NumP. Finally, *še-hu*, a CP, merges either in the specifier of a noun phrase or as the complement of the determiner it modifies.

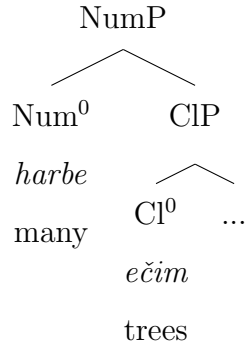
According to Borer (2005), certain quantified elements in Hebrew can merge as either heads or phrases. Borer makes the following assumption:

“In Hebrew, all cardinals and (most) quantifiers (*’exád* excepted) are heads, that is, on a par with English *the* and *a*, they must project. It is for this reason that they must occur pre-nominally, and do not exhibit (obligatory) agreement in gender, number, and definiteness with the N head which follows them. Two quantifiers, *me’at*, ‘few, little’, and *harbe/rav*, ‘many, much’, need not project, and hence may be either heads or phrases. In the latter case, they allow N movement past them with an obligatory agreement in gender, number, and definiteness with the moved N head as a result.”
(Borer, 2005:197)

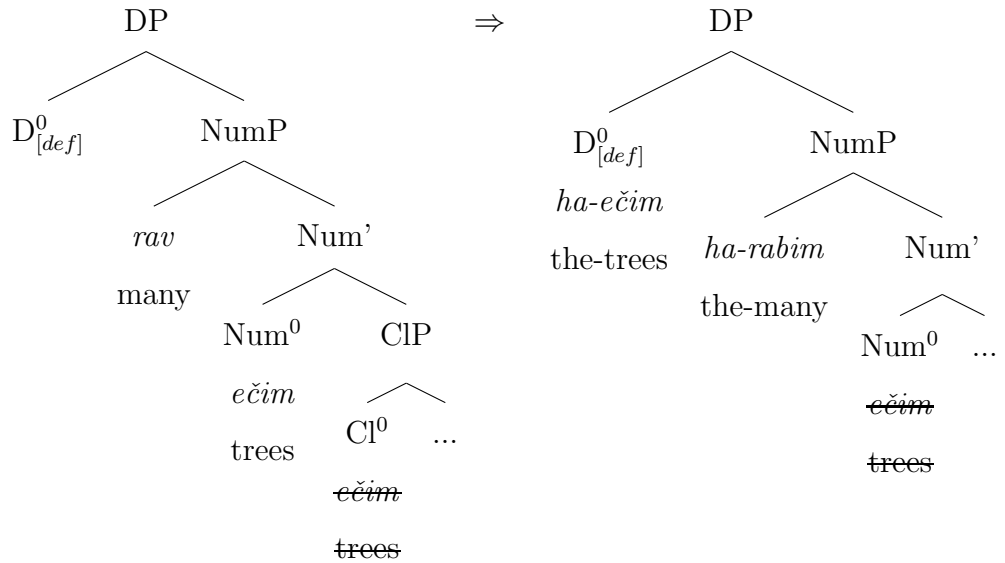
Compare (38a), where *harbe* ‘many, much’ is merged in Num^0 , with (38b), where *harbe* is merged in Spec NumP, thus allowing the noun to move past it to D^0 and resulting

in specifier-head agreement in both ϕ -features and definiteness; the noun moves to D^0 to check [def].

- (38) a. *harbe ečim*
many trees.pl



- b. *ha-ečim ha-rabim*
the-trees.pl the-many.pl
'the many trees'



Interestingly, overt definiteness marking is not always present, as shown in (39). As-

suming that the modifier is in Spec NumP, as in (38b), (39) implies that the bare noun has moved to D⁰. The question is what would motivate such N-to-D movement, since there are no interpretable features present (e.g. [genitive] or [definite]).

- (39) ečim *rabim*
 trees.pl many.pl
 ‘many trees’

A different way of looking at (38b) versus (39) would be to consider the postnominal modifier on a par with adjectival modifiers. The existence of agreement on the modifier could be taken to show that the modifier is actually merged in a lower specifier position, for example Spec NP or Spec CIP. If this were the case, we would not need to postulate an explanation for movement of the noun to D⁰.

For Borer, evidence that the modifier is in Spec NumP, even in (39), comes from three sources. First, when following the noun, these modifiers are merged highest (rightmost) with respect to adjectival modifiers, (40a). “If *rav* [‘much’] and *me’at* [‘little’] need not merge in [Spec,#P] – in fact the highest position available for modifiers – it is not clear why they should always occur higher than all other adjectives” (Borer, 2005:229).

- (40) a. balonim čehubim *rabim*
 balloons yellow many
- b. *balonim *rabim* čehubim
 balloons many yellow
 (Borer, 2005:229)

Second, evidence that the postnominal modifier in (39) (*trees many*) occupies Spec NumP, similarly to its definite counterpart (*the-trees the-many*), but unlike its prenominal counterpart (*many trees*), comes from contexts where the postnominal modifier is

disallowed, (41c,d), while the prenominal modifier is allowed, (41a,b), therefore suggesting that they are merged in different places.⁶

- (41) a. eyn **harbe ečim** ba-gan.
 there-aren't many trees.pl in-the-garden
 'There aren't many trees in the garden.'
- b. yeš **me'at ečim** ba-gan.
 there-are few trees.pl in-the-garden
 'There are few trees in the garden.'
- c. *eyn **ečim rabim** ba-gan.
 there-aren't trees.pl many.pl in-the-garden
 'There aren't many trees in the garden.'
- d. *yeš **ečim me'atim** ba-gan.
 there-are trees.pl few.pl in-the-garden
 'There are few trees in the garden.'
- (modified from Borer, 2005:230)

These data show pre- and postnominal modifiers to be merged in different places.

An additional context where both the definite and the indefinite postnominal modifiers are either allowed or disallowed is as postverbal subjects of achievement verbs (which do not allow strong postverbal subjects), such as *erupted (argument)* and *appeared (stars)* (Borer, 2005:230-1)⁷. In contrast, prenominal modifiers are allowed, (42c).

⁶The acceptability of these examples improves with strong emphasis on the modifier (Borer, 2005:230).

⁷Again, the acceptability improves with contrastive emphasis.

- (42) a. *parač ha-vikuax/ kol vikuax/ rov ha-vikuax
 erupted the-argument/ every argument/ most-of the-argument
 ha-boker
 the-morning
- b. *parču **vikuxim me’atim** ha-boker
 erupted arguments.pl few.pl the-morning
- c. parču **me’at vikuxim** ha-boker
 erupted few arguments.pl the-morning
- d. **vikuxim me’atim** parču ha-boker
 arguments.pl few.pl erupted the-morning
 ‘Few arguments erupted this morning.’
 (modified from Borer, 2005:230-1)

We observe a parallel behaviour with the indefinite determiners discussed here: prenominal *eyze-še-hu* is allowed in the context of achievement verbs, while the postnominal *kol-še-hu* is disallowed, as illustrated in (43). This suggests that the property of having different syntactic functions (as heads or as phrases) can be extended to indefinite determiners as well.

- (43) a. *parač **vikuax kol-še-hu** ha-boker
 erupted argument KOL-INDEF the-morning
- b. parač **eyze(še-hu) vikuax** ha-boker
 erupted which(INDEF) argument the-morning
 ‘Some argument erupted this morning.’

A third piece of evidence for the strong reading of postnominal modifiers comes from contexts where they can scope over a nominal or over an event (Borer, 2005:232).

- (44) **Four hundred ships** passed through the lock.
- a. Nominal reading: refers to a flotilla.
 - b. Event reading: refers to events of individual ships passing through the lock.

In Hebrew, in postverbal position, which allows both strong and weak quantifiers, we find the same ambiguity as in (44). It is predicted that if indeed a postnominal quantifier induces a strong reading (movement of N to D), then an event reading is blocked. On the other hand, prenominal modifiers are expected to be ambiguous, on a par with their English counterparts. This is illustrated in (45). (Borer, 2005:232-3)

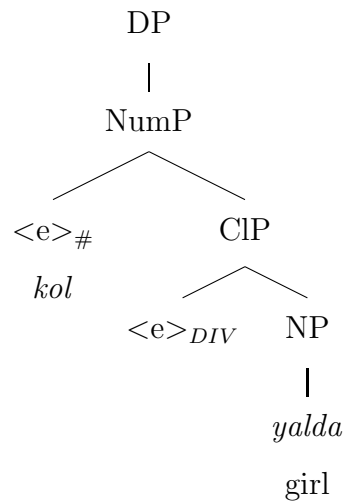
- (45) a. ha-šavua xaču **harbe mexoniot** et ha-gešer
 the-week crossed many cars ACC the-bridge
Many distinct cars crossed the bridge this week.
There are many events of cars crossing the bridge this week.
- b. ha-šavua xaču **mexoniot rabot** et ha-gešer
 the-week crossed cars many.pl ACC the-bridge
Many distinct cars crossed the bridge this week. (no event reading)
 (Borer, 2005:232-3)

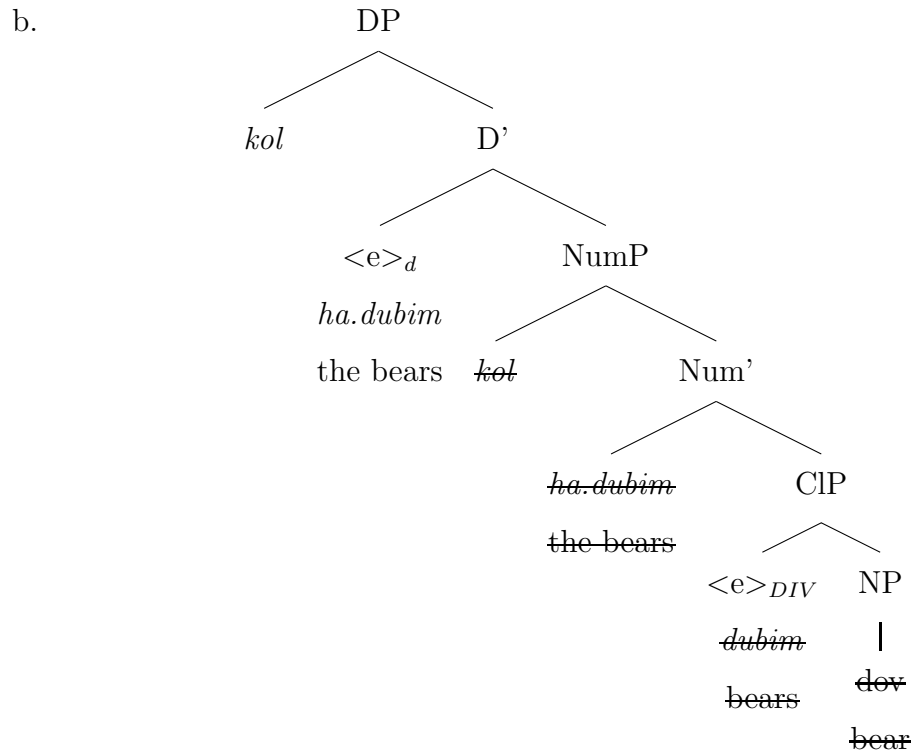
Borer suggests that a strong reading associated with a weak determiner involves the merging of a copy in D^0 (the determiner is merged as a head). This cannot be directly extended to postnominal modification of bare nouns (e.g. *ečim rabim* ‘trees.pl many.pl’) because in that case, based on the word order facts, the modifier cannot occupy D^0 . If the quantifiers are by necessity in Spec NumP, then it follows that the bare noun must be in D^0 . A strong reading for this phrase (which renders a variable reading as impossible) is suggestive of N^0 in D^0 (Borer, 2005:233). In other words, if the noun moves only as far as Num⁰, we get the variable reading (open value in D^0), and if the

noun moves all the way to D^0 , we get the “specific” reading. We have already seen that this reading is available for bare (singular) nouns in Hebrew.

Following Borer’s (2005:242) proposed typology for determiners in Hebrew, when *kol* modifies an indefinite singular noun phrase, (46a), it is syntactically realized as a head; differently from Borer, for whom *kol* is merged in Cl^0 and moves to (or is being interpreted in) Num^0 , I merge *kol* directly as Num^0 . The reason for this is that *kol* is not specified for number or gender and therefore merging it in Cl^0 would imply that it is, or that these features reside elsewhere. When *kol* modifies a definite noun phrase, (46b), it is syntactically a specifier (of $NumP$). *Kol* moves to Spec DP, otherwise we would get its alternation in (47a).

(46) a.





Two points should be noted here. First, this analysis differs from Ritter (1991) in that *kol* is a specifier to the DP rather than being a Num⁰ and taking the DP as its complement (as in Ritter’s analysis). Second, *kol* cannot merge in ClP. Evidence for this is shown in (47); compare (47a) where movement of the noun past *kol*, for [def] feature checking purposes, allows spec-head agreement with *kol*, with (47b) where the same type of movement results in an ungrammatical construction. If *kol* were merged in Cl⁰, then (47b) would have been allowed.

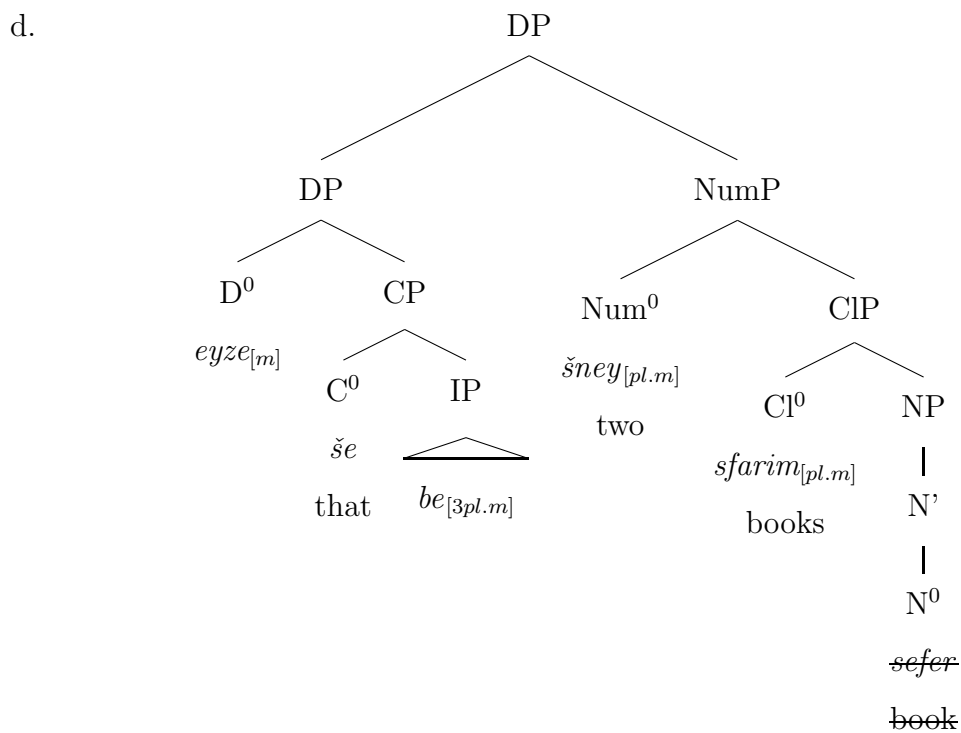
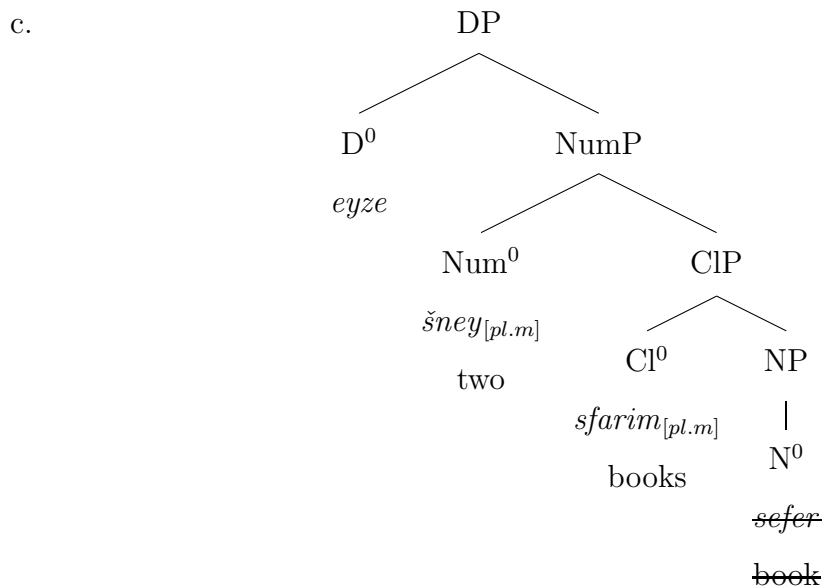
- (47) a. ha-yeladim kul-am ba’u le-bikur.
 the-children.pl.m KOL.pl.m came to-visit
- b. #yeladim kul-am ba’u le-bikur.
 children.pl.m KOL.pl.m came to-visit
 ‘All the children came for a visit.’

We now turn to the three syntactic scenarios available for the indefinite pronouns under discussion. We look first at prenominal *eyze* and *eyze-še-hu*, followed by prenominal *kol*, and will contrast these with postnominal *kol-še-hu* and their split variants.

5.3.4 *Eyze* and *eyze-še-hu*

Differently from the quantificational determiners discussed by Borer (*harbe* ‘many’ and *me’at* ‘few’), there is no evidence to suggest that the indefinite pronoun *eyze* may merge as either a head or as a specifier (and as we will see later in this chapter, none of the alternations found with *kol* or with the determiners discussed by Borer apply to *eyze*). *Eyze* can only appear prenominally – it does not allow movement of the noun past it, and does not carry number agreement; it agrees partially with the noun – in gender, an agreement which is slowly disappearing in colloquial Hebrew. All this points to its status as a functional head merged in D⁰. *Eyze* can modify a quantified noun phrase (cardinal numeral + noun), (48b). In addition, it may take as its complement the *še-hu* particle. I propose the structures in (48c,d) for prenominal modification.

- (48) a. *eyze(še-hu)* sefer
 which.m-INDEF.sg.m book.sg.m
 ‘some book (or other)’
- b. *eyze(še-hem)* šney sfarim
 which.m-INDEF.pl.m two.pl.m book.pl.m
 ‘some/any two books’



Next, we examine prenominal *kol* versus postnominal *kol-še-hu*.

5.3.5 *Kol* and *kol-še-hu*

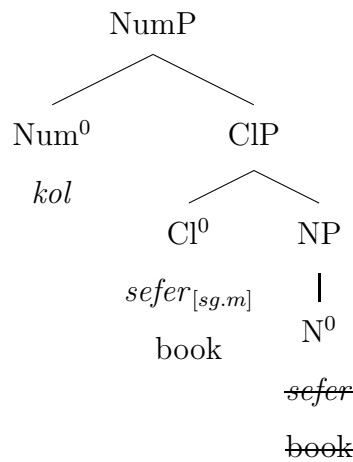
We know that unlike *eyze*, *kol* cannot be modified prenominally by *še-hu*, and it does not carry any agreement features. We also know, however, that it can appear postnominally, where it exhibits adjectival-like properties, such as full ϕ -agreement with the noun, (49c); modification by *še-hu* is responsible for this agreement, since *še-hu* is the element that morphologically carries the agreement features. I will consider *kol* syntactically on a par with the pre/postnominal quantifier alternation found with *rov* ‘most’ and *me’at* ‘little’ presented earlier in the chapter.

- (49) a. *kol* sefer
 KOL book.sg.m
 ‘each and every book’
- b. *kol* šney sfarim
 KOL two.pl.m book.pl.m
 ‘each two books’
- c. sefer *kol-še-hu*
 book.sg.m KOL-INDEF.sg.m
 ‘some book (or other), any book’
- d. **kol-še-hu* sefer
 KOL-INDEF book

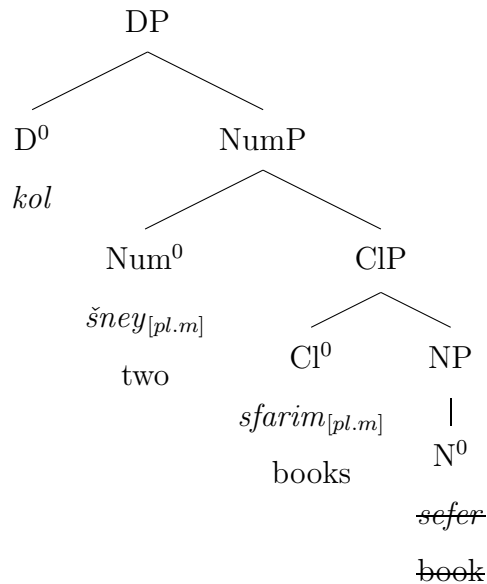
The respective structures for (49a,b) are illustrated in (50). The structure for (49c) is provided in (52) with the discussion of the complex determiner. The ungrammaticality of (49d) has to do with the fact that *eyze* and *kol* belong to different functional categories, D and Num, respectively, as well as with properties of nominal modifiers in Hebrew, which must follow the noun. *Eyze* is merged in D so no adjectival-like prop-

erties are expected. *Kol*, on the other hand, is merged in NumP either as a specifier or as a head. As a noun modifier, *kol* merges in the specifier of NumP – the highest position available for nominal modifiers in Hebrew; this would explain why *kol-še-hu* exhibits adjectival-like properties and appears to participate in adjectival hierarchies of the type discussed by Shlonsky (2004). The relation between this modifier and the noun it modifies is the same as that of other postnominal modifiers relative to the noun. Basically, what we have in (49d) would be a stage in the derivation; assuming that the *kol* phrase is positioned in the specifier of NumP, the derivation would crash unless the noun moves to D⁰, for agreement purposes (spec-head agreement with the *kol* specifier phrase).

(50) a.

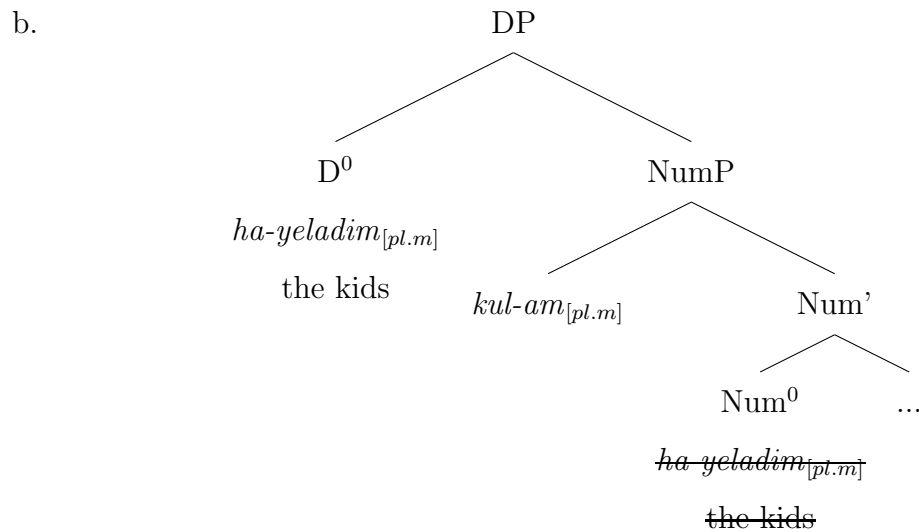


b.



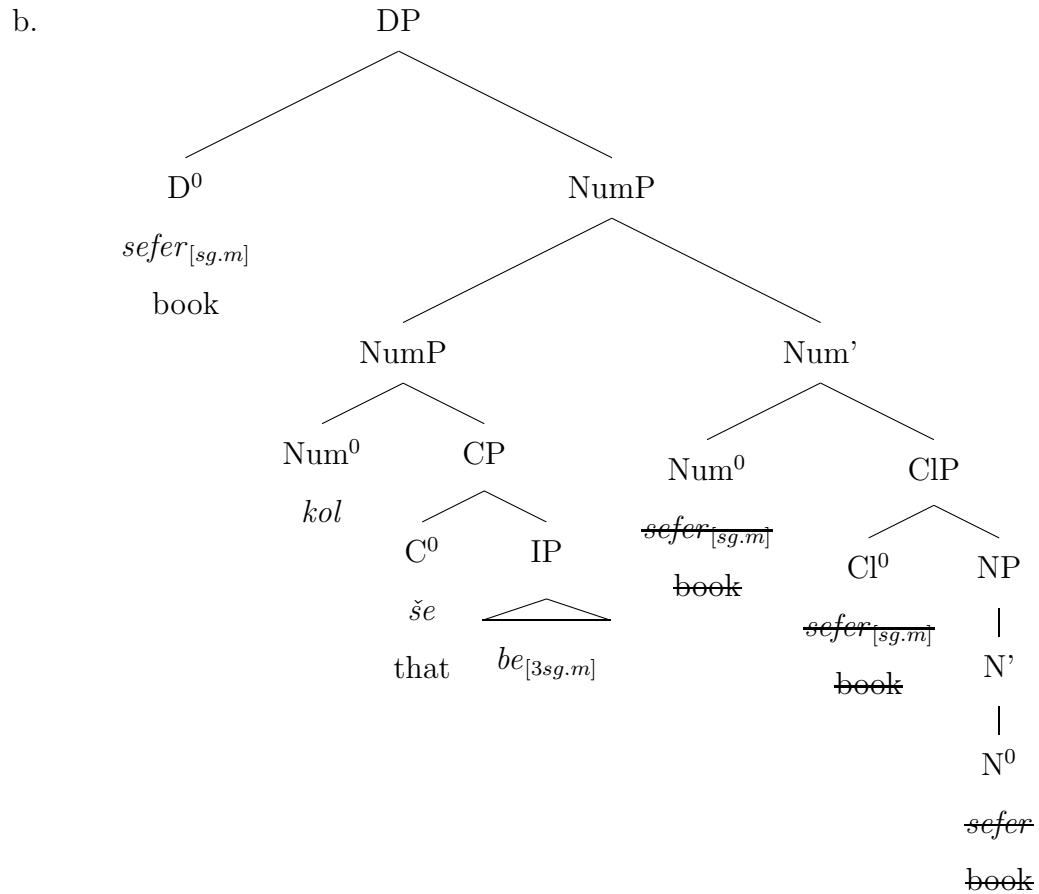
Kol may also host pronominal clitics, and by extension, agreement, (51), in which case it merges as a specifier and allows specifier-head agreement with the noun.

- (51) a. *ha-yeladim kul-am*
 the-kids.3pl.m KOL.3pl.m
 ‘all the kids (the kids, all of them)’



A second case which suggests that *kol* may be merged in the specifier position is (52). Postnominal *kol-še-hu* differs from *kol* in several important syntactic aspects: first, *kol-še-hu* is postnominal, while *kol* is pronominal; if *kol* and *kol-še-hu* stand in the same relation as *eyze* and *eyze-še-hu*, the postnominal position of *kol-še-hu* is left unexplained. We want to find out what allows the noun to move past *kol-še-hu*, as well as where and how *kol-še-hu* is merged. Second, *kol-še-hu*, but not *kol*, exhibits adjectival-like properties – full ϕ -agreement with the noun it modifies. Finally, *kol-še-hu* must be higher than other preceding adjectives, which again suggests that it is merged as a specifier (Borer, 2005). This allows head-movement of the noun past *kol-še-hu* to D^0 . The proposed structure is illustrated in (52b).

- (52) a. *sefer kol-še-hu*
 book KOL-INDEF
 ‘any/some book (or other)’



Assuming a specifier position for *kol*, when modified by a pronominal clitic or by the *še-hu* phrase, explains the word order facts – the noun is free to move past *kol* and enter into a specifier-head agreement relation with the *kol* phrase.

5.3.6 The split construction

Hebrew has another interesting construction, which I refer to as the “split construction”, where the noun appears to move to an intermediate position between an indefinite

determiner, *eyze* or *kol*, and the *še-hu* particle modifying them, of the form in (53):

(53) *kol/eyze* Noun *še-hu*

My proposal that *še-hu* is a free choice particle is supported by the fact that this construction is available only in intensional environments – modal contexts, imperatives, future tense statements, and with intensional verbs such as *want*. It is unacceptable in extensional (present tense) environments, as shown in (54b), or with factual verbs such as *know*.

- (54) a. ma at osa? ani koret *eyze-še-hu* sefer
 what you doing? I read which-INDEF book
 ‘What are you doing? I’m reading some book.’
- b. ... #ani koret *eyze* sefer *še-hu*.
 ... I read which book INDEF

Syntactically, no material is usually⁸ allowed to intervene inside the split construction. Although Hebrew allows postnominal stacking of modifiers with the restriction that the determiner be the most embedded element, this does not hold for split constructions, as illustrated in (55).

- (55) a. sefer harpatkaot *kol-še-hu*
 book adventures KOL-INDEF
 ‘any adventure book’
- b. ??*kol* sefer harpatkaot *še-hu*
 KOL book adventures INDEF

⁸This type of data needs to be further tested.

An important point is that the split construction always bears emphatic stress. It closely resembles what we find with *any* in English as observed by Kadmon and Landman (1993) in (56) and (57).

(56) You: Will there be French fries tonight?

Me: No, I don't have potatoes.

You: Maybe you have just a couple of potatoes that I could fry in my room?

Me: Sorry, I don't have ANY potatoes.

(Kadmon and Landman, 1993:360)

(57) a. A: Do you have dry socks?

B: I don't have ANY socks.

b. A: Perhaps some dry socks would help?

B: ANY socks would help.

(Kadmon and Landman, 1993:356)

Kadmon and Landman suggest that *any* indicates a reduced tolerance to exceptions. For example, in (57a), an interpretation of what B says would be that there are not even wet socks around, and similarly, (57b) implies that wet socks are not an exception to B's claim. For Kadmon and Landman, this reduced tolerance to exceptions translates into an inherent lexical property of *any* – semantic *domain widening* of the noun phrase modified by *any*, and a pragmatic effect – *strengthening* of the utterance in which *any* appears. It has been argued, for example in Krifka (1995) that domain widening with *any* happens only if *any* is stressed. Kadmon and Landman acknowledge the fact that emphatic stress may accompany *any*, but do not consider it the source of the domain widening observed with *any*.

“Here lies one of the difficulties in demonstrating that stress does not induce widening: the difference between ‘real’ widening and other cases of domain

selection can be subtle, and since prosody (stress, intonation, rhythm) can play a role in clarifying intended domain selection, it is hard to show that it does not induce ‘real’ widening. In trying to argue that the effect of stress alone is not ‘real’ widening, our first point was that we do see an intuitive difference between ‘real’ widening (with *any*) and other domain selection (without).” (Kadmon and Landman, 1993:364)

Še-hu in the split construction shows a similar stress pattern and/or domain widening property that we find with *any* in (56) and (57), as illustrated in (58). For the time being, I will consider it as stress, especially since we find a marked (with stress) versus unmarked (no stress) contrast if we compare the split version with the non-split one. It should be noted that while the split version is obligatorily stressed, the non-split version may be optionally stressed (and perhaps it needs a special intonation pattern, which is not needed for the split version).

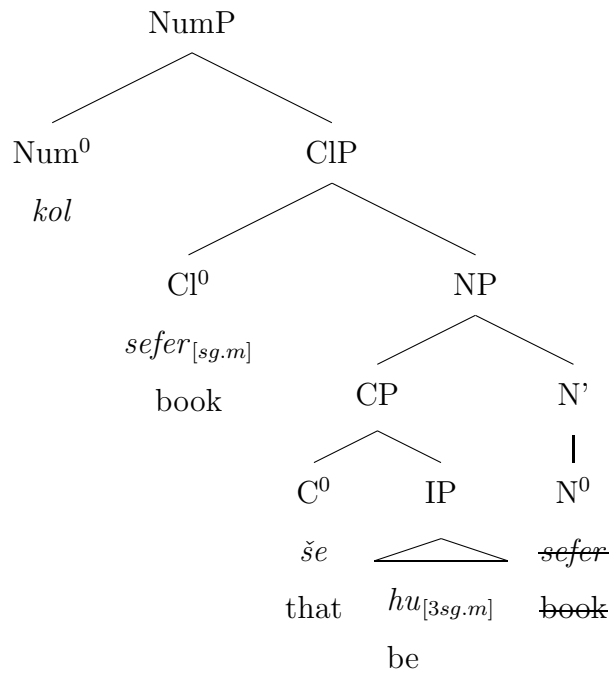
(58) Scenario: Mary asks Joe to pick a number to think about, which Mary will eventually try to guess.

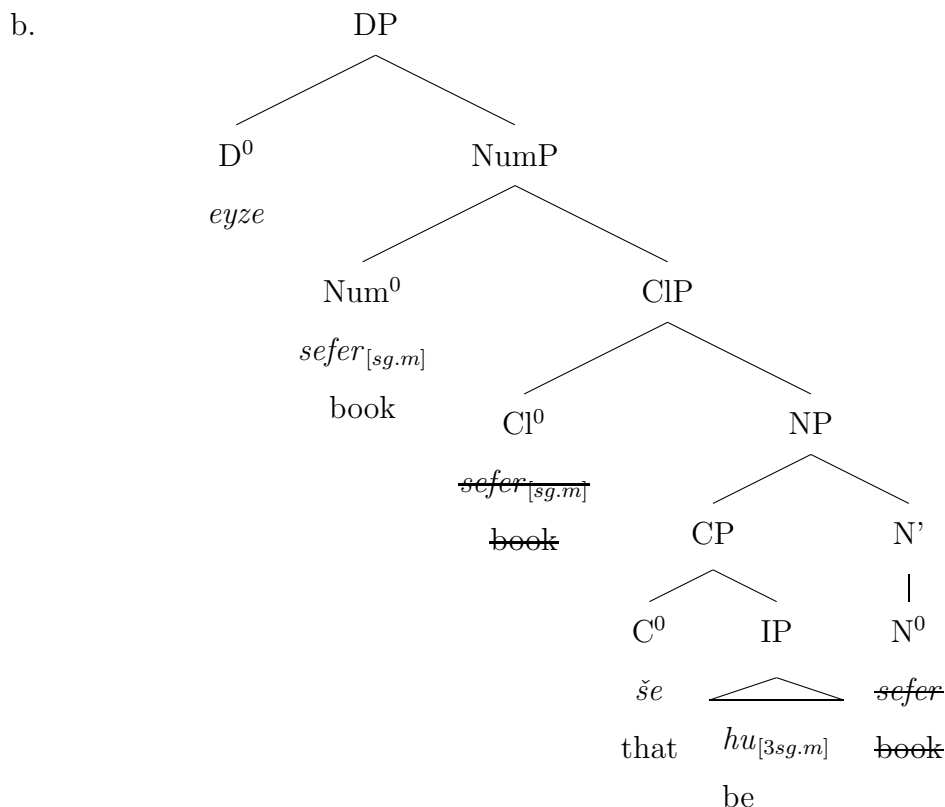
- a. tivxar mispar *kol-še-hu*.
 choose.2sg.m number KOL-INDEF
 ‘Pick a number (whatsoever).’
- b. ata yexol livxor mispar *kol-še-hu*
 you can choose number KOL-INDEF
 ‘You can pick any number.’
- c. be’emet, ata yexol livxor *kol/KOL* mispar *še-hu/ŠE-HU*.
 really, you can choose KOL number INDEF
 ‘Really, you can pick any/ANY number WHATSOEVER.’

In (58a), we have Mary’s initial utterance – this is the unstressed use of *kol-še-hu*. If Joe asked whether choosing very big numbers is also ok, Mary can reply with (58b) – (un)stressed non-split pronoun, or with (58c) stressed split pronoun, to express the idea that any number is a possible option, even the most unlikely one as far as Joe’s consideration of numbers goes.

The following structures are proposed:

(59) a.





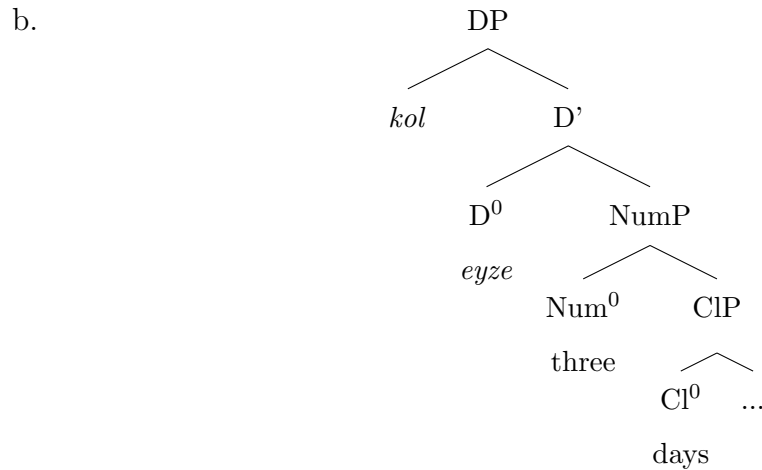
The link between the position of the CP modifier and the FC interpretation remains to be explored in detail in future research.

At this point, one additional observation needs to be taken into account, and this has to do with the distribution of *kol* and *eyze* and whether they can co-occur. We know that adjectives in Hebrew can be stacked, but they must be ordered along a particular hierarchy (see Shlonsky 2004). A similar hierarchy can be found with *kol* and *eyze* in the environment discussed in the next section.

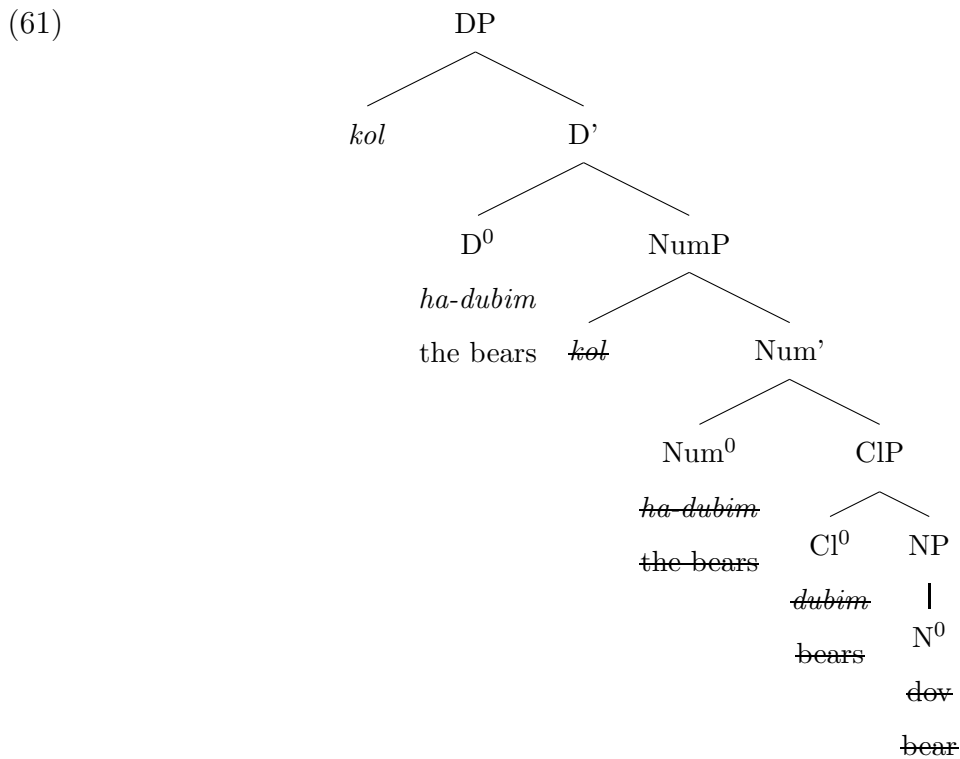
5.3.7 An indefinite hierarchy

In Modern colloquial Hebrew, we find that *kol* and *eyze*, two indefinite pronouns, can co-occur, as shown in (60a) and illustrated in (60b).

- (60) a. *kol eyze šloša yamim kibalti mixtav.*
 KOL which three days received.1sg letter
 ‘Every three days, more or less, I received a letter.’



(60b) parallels Borer’s (2005) proposal for cases where *kol* modifies a definite noun phrase, repeated below.



(This structure alternates with *ha-dubim kul-am* ‘the bears all of them’ where *kol* stays in Spec NumP and enters into spec-head agreement with the noun moving to D⁰.)

I suggest that the relative order of *kol* and *eyze* is determined at the syntax-semantics interface. In Chapter 4 of the thesis, I argued that *kol* associates with a universal operator. Therefore, the only possibility for this derivation to take place is on the condition that no operator intervenes between *kol* and the universal operator that it must agree with; this means that *kol* would need to merge in the highest position within the DP. The result is the determiner hierarchy observed in (60).

The properties of the different indefinite determiners are summarized in Table 5.2.

Table 5.2: Indefinite determiners: summary of properties

	<i>eyze</i>	<i>kol</i>	<i>še-hu</i>
Gender agreement	✓	*	✓
Number agreement	*	*	✓
Appear pre/post nominally	*	✓	✓
Co-occurrence with the definite article	*	✓	*
Co-occurrence with Construct State Nominals	*	✓	*
Can host a pronominal element/agreement	*	✓	✓
Merges in D ⁰	✓	–	–
Merges as Num ⁰ or in Spec NumP	–	✓	–
Merges as specifier of noun or complement of indefinite pronoun	–	–	✓

Some of the theoretical observations addressed in this chapter have been tested via a *grammaticality judgments* pilot study. The conditions and results are presented and discussed in the next section.

5.4 Experimental results

The indefinite pronouns discussed in this chapter – *eyze-še-hu N*, *eyze N še-hu*, *N kol-še-hu*, *kol N še-hu* – were tested in free choice contexts via a *grammaticality judgment* task. This condition was meant to test the correlation between free choice readings and the postnominal occurrence of the *še-hu* particle. It was hypothesized that the postnominal position is associated with unrestricted freedom of choice. The determiner *kol N še-hu* (and also *eyze N še-hu*) was considered the best candidate for expressing free choice (it can only appear in modal environments). The determiner *eyze-še-hu* was considered the least likely candidate for expressing free choice because it allows singleton interpretations which are incompatible with free choice.

In addition, the task was meant to check whether there is a difference in the use of a split determiner (*eyze N še-hu*, *kol N še-hu*) versus a nonsplit determiner (*eyze-še-hu*, *kol-še-hu*) in free choice contexts. A sample set for this condition is given in Table 5.3. The participants were asked to evaluate the target sentence while taking into consideration the background sentence, and to rate the target sentence on a scale of 1 to 4 such that 1=*never used* (in their own everyday speech), 2=*rarely used*, 3=*sometimes used* and 4=*always used*.

Table 5.3: Sample set of the Free Choice condition

Condition	Background sentence	Target sentence
1.1 Split determiner <i>eyze N šehu</i>	Guy wanted to wear the blue sweater but now he's getting really cold.	He's willing to wear <u>eyze</u> sweater <u>šehu</u> 'any'.
1.2 Split determiner <i>kol N šehu</i>	Shimshon wanted to wear the blue sweater but now he's getting really cold.	He's willing to wear <u>kol</u> sweater <u>šehu</u> 'any'.
2.1 Non-split determiner <i>eyzešehu N</i>	Zvi wanted to wear the blue sweater but now he's getting really cold.	He's willing to wear <u>eyzešehu</u> 'some' sweater.
2.2 Non-split determiner <i>N kolšehu</i>	Yossi wanted to wear the blue sweater but now he's getting really cold.	He's willing to wear sweater <u>kolšehu</u> 'any'.

The Free Choice condition was divided into two factors: a *split determiner* factor and a *nonsplit determiner* factor, each containing two levels corresponding to the two

determiners. The descriptive results are summarized in Table 5.4. As mentioned above, the rating ranged from 1=*never used* to 4=*always used*.

Table 5.4: The Free Choice condition: descriptive statistics

Condition	Mean	Nr. of answers	St.dev.	Median
1.1 <i>eyze N še-hu</i>	2.27	76	1.18	2.00
1.2 <i>kol N še-hu</i>	3.09	76	1.15	4.00
2.1 <i>eyze-še-hu</i>	2.32	76	1.12	2.00
2.2 <i>kol-še-hu</i>	2.52	76	1.17	3.00

In terms of *mean* effect, the results show that the split determiner *kol N še-hu* receives the highest rating, as expected, with an average of 3.09/4.00. However, when comparing the *mean* ratings for the other three determiners, they are very similar; particularly unexpected was the result that the nonsplit determiner *eyze-še-hu* received a slightly better rating than its split counterpart, although the difference was not significant. Table 5.5 summarizes the percentage of answers per rating and shows that *kol N še-hu* is by far the preferred determiner in this type of context. For the other determiners, the possible ratings are more evenly distributed among participants.

Table 5.5: The Free Choice condition: percentage of answers per rating

Condition/Rating	4=always	3=sometimes	2=rarely	1=never
1.1 <i>eyze N še-hu</i>	22%	20%	21%	37%
1.2 <i>kol N še-hu</i>	54%	18%	11%	17%
2.1 <i>eyze-še-hu</i>	21%	21%	28%	30%
2.2 <i>kol-še-hu</i>	28%	25%	20%	28%

A 2x2 repeated measures ANOVA, within-subjects effects, revealed a significant effect in both factors: *split determiner* ($F(1,74) = 5.335, p = .024$) and *nonsplit determiner* ($F(1,74) = 14.779, p < .001$). In other words, there was a significant *mean* difference between the two split determiners, on the one hand, and between the two nonsplit determiners, on the other hand. The former could be considered a trend. The fact

that the effect was much more pronounced in the “nonsplit” factor indicates that the determiner *kol-še-hu* was preferred to its counterpart, *eyze-še-hu*, in free choice contexts, as per our prediction. This result suggests that the hypothesis linking the postnominal position with free choice readings is on the right track.

In addition, there was a significant interaction between the two factors ($F(1,74) = 7.8$, $p = .007$), meaning that the type of determiner (split vs. nonsplit) played a role as well. This effect could be due to the *kol N še-hu* determiner, which was rated significantly higher than the other determiners; however, since there was a list effect in interaction with the “nonsplit determiner” factor ($F(1,74) = 13.94$, $p < .001$), this result is less reliable. Nevertheless, it can be concluded that speakers associate the split determiner *kol N še-hu* with maximal free choice readings, while in the case of the other three determiners free choice is one possible interpretation rather than the *only* interpretation.

Given the significant results obtained, a further analysis was performed of two-tailed paired-samples *t*-tests. A significant *mean* effect was found in three of the pairs:

- *kol+N+še-hu* & *kol-še-hu*: $t(75) = -3.92$, $p < .001$
- *kol+N+še-hu* & *eyze+N+še-hu*: $t(75) = 4.62$, $p < .001$
- *kol+N+še-hu* & *eyze-še-hu*: $t(75) = -3.86$, $p < .001$

The *t*-test results strengthen the observation that the split determiner *kol N še-hu* is preferred in free choice environments relative to the other possible determiner options.

Overall, the results support the hypothesis put forward in this chapter that an interface account is needed to explain the Hebrew data. The interpretation of these indefinites is determined by the syntactic position they appear in, in concord with the properties of the determiner modified by the free choice *še-hu* particle.

5.5 Summary and further notes

This chapter has explored syntactic aspects of indefinite noun phrases in Hebrew with special attention to two determiners in particular – *eyze-še-hu* and *kol-še-hu* – and their intriguing property of being able to split and receive emphatic stress within the DP in order to express maximal free choice. Many languages have complex determiners, for example Polish *kolwiek*⁹ pronouns, to take just one example, which may become focalized and may appear in free choice environments. The strategy in Polish, for example, for semantic focus, may involve left-dislocation of an adjectival modifier resulting in a discontinuous noun phrase, (62), but a determiner under these conditions would remain intact, (63b,c)¹⁰.

(62) **Czerwona** kupilem koszule.

red.Acc bought.1sg shirt.Acc

‘I bought a RED shirt.’

(Frackowiak, 2009)

(63) a. Słyszałam, że chcesz kupić bardzo droga koszule.

‘I heard that you want to buy a very expensive shirt.’

b. **Koszule** kupię **jakakolwiek**. [Contrastive Topic]

Shirt.Acc buy.Pres.1sg which.Acc-kolwiek

I will buy ANY_F SHIRT_T.

c. **Jakakolwiek** kupię **koszule**. [Contrastive Focus]

Which.Acc-kolwiek buy.Pres.1sg shirt.Acc

‘I will buy ANY_F shirt.’

(Frackowiak, p.c.)

⁹The Polish *-kolwiek* series of indefinite pronouns is based on interrogative pronouns (e.g. *jaka-kolwiek* ‘which-ACC.kolwiek’), and as such parallels the *-še-hu* series of indefinite pronouns in Hebrew.

¹⁰In the Polish examples ‘bold’ font indicates stress.

However, I have only found one example where the actual determiner splits.¹¹ The data comes from Old Spanish:

- (64) a. Sea significador daquel rey por **qual** otra manera
 Let-it-be indicative of-that king in what other manner
quier
 (one)-may-want
- b. Por fazer su prouecho en **qual** **quier** otra manera
 To do his benefit in whatever other manner
 (Rivero, 1986:449)

“In the 13th century, the paradigm of *wh*-compounds such as *qualquier(e)* ‘whoever, whatever’, *quantoquier(e)* ‘whatever’, etc. coexists with the syntactic sequences *qual ... quier(e)* ‘what one-may-want’ at their historical origin, as in the contrast in [(64)].” (Rivero, 1986:449)

On a speculative note, *še-hu*, if taken at its literal meaning, adds up to *that-be* which can be easily considered to be equivalent to Old Spanish *qual ... quier(e)* ‘what one-may-want’, basically resulting in a free choice effect.

To conclude, one of the issues addressed in this chapter had to do with the internal structure of these indefinite noun phrases and how a semantic property such as free choice may be dependent upon the syntactic position of the free choice expressing particle, in this case *še-hu*.

Exploring the properties of these determiners has led to a revision of their functions, and to the need to classify an indefinite that is not found in Haspelmath’s (1997) typology, namely *kol-še-hu*. For Hebrew, Haspelmath (1997:74) categorizes two separate function series that have been discussed in this chapter – *še-hu* indefinites, said to cover the *specific known*, *specific unknown* and *nonspecific* functions, and the *kol* series, said to

¹¹Many thanks to Professor María Luisa Rivero for bringing these data to my attention.

cover the free choice function. Given the evidence accumulated from previous chapters with respect to the properties of *kol* indefinites, as well as from the present chapter with respect to *še-hu* indefinites, and especially the maximal free choice property associated with the *še-hu* particle, I propose the following revision of the functional map for indefinite pronouns in Hebrew, (65).

- (65) a. Series: interrogative determiner
Function: nonspecific
Determiner: *eyze* ‘some’
- b. Series: *še-hu*
Function: specific, nonspecific, **free choice**
Determiners:
– *eyze-še-hu N* ‘a certain, some’
– *eyze N še-hu* ‘any’
– *N kol-še-hu* ‘any, some or other’
– *kol N še-hu* ‘any’
- c. Series: *kol*
Function: **distributive**, free choice
Determiner: *kol* ‘any, no, each, every, all’

A small puzzle resolved: one question in relation to the morphological form of *še-hu* is why is it that when it functions as the complement of a determiner, it undergoes cliticization [*determiner-še-hu*] (resembling a ‘bound’ morpheme), but when it functions as a specifier to the noun, it is a ‘free’ bi-morphemic item? Perhaps the reason for this has to do with its function – as a complement, *še-hu* need not enter into an Agree relation with its determiner, while as a specifier to the noun, it does; in the latter case, given the general properties of noun modifiers in Hebrew, *še-hu* must participate in spec-head agreement with the noun. This derives the correct word order facts.

Chapter 6

Conclusions

In the present work, I have explored the properties that define the indefinite pronoun system in Hebrew in terms of the distribution of labor between syntax, semantics and pragmatics. The aim was to identify the licensing conditions of indefinite pronouns with the purpose of integrating the findings within ongoing crosslinguistic research.

In the semantic literature, indefinites have been considered to be either quantifiers or discourse variables. Advantages and disadvantages of both approaches have been debated for over 30 years, and in the course of this time, the research has progressed from general investigations taking English as the default example, to the idea of identifying core properties of indefinites across languages. We are now beginning to form an idea of what are the language-specific issues in Romance and Germanic languages, but we have yet more to find out about other languages, one of them being Modern Hebrew, a Semitic language.

The main problem with adopting a quantificational approach to indefinites is that indefinite pronouns, of which *any* is still the leading example, exhibit variable quantificational force. The question is whether it is optimal to postulate lexical entries of a quantificational type and then resort to postulating additional lexical entries of a variable type. From the point of view of language acquisition, this appears to be a

complicated solution.

The project which led to this dissertation began a few years ago, when I first learned about *any* as a problematic indefinite. Thinking about Hebrew, the immediate correspondants to *any* that came to mind were *af* and *kol*. Investigating these two indefinite pronouns, I found that, first, they differ in distribution and interpretation from one another and in comparison to *any*, and second, that there was not much written about them. This was the beginning of the project.

The general aim of the project has been to provide an overview of how indefiniteness is expressed in Hebrew. The summary map of the functions of indefinite pronouns in Hebrew provided in Haspelmath (1997) is a good starting point, but does not capture the complexity of the system, nor the subtle differences between these pronouns. My aim has been to provide an extensive overview of the data, and of the semantic and syntactic properties which define these pronouns.

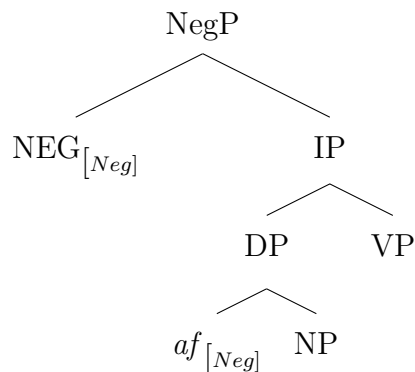
In order to better understand how native speakers prefer to express indefiniteness in everyday speech, a very preliminary grammaticality judgments pilot study was conducted, in which (thirty-eight) native speakers of Hebrew could choose between apparently similar pronouns, for example, *af* ‘any’ versus *kol* ‘any’, *eyze* ‘some (or other)’ versus *eyzešehu* ‘some, a certain’, and so on, based on given contexts. This study has been very helpful for a number of reasons, the most important being that it has confirmed the hypothesis that there are syntactic, semantic and pragmatic differences setting apart each of these pronouns. Another important finding was that there seems to be a correlation between the syntactic positioning of an indefinite pronoun and the availability of a nonrestricted free choice reading. The study provides a basis for future experiments and is indicative of trends¹ in the conditions of usage of these pronouns by native speakers.

¹Although some of the results were found to be statistically significant, with $p < .05$, given the limitations of the study, it is perhaps better to consider them as ‘trends’, at least until a further, more in-depth study reconfirms the results.

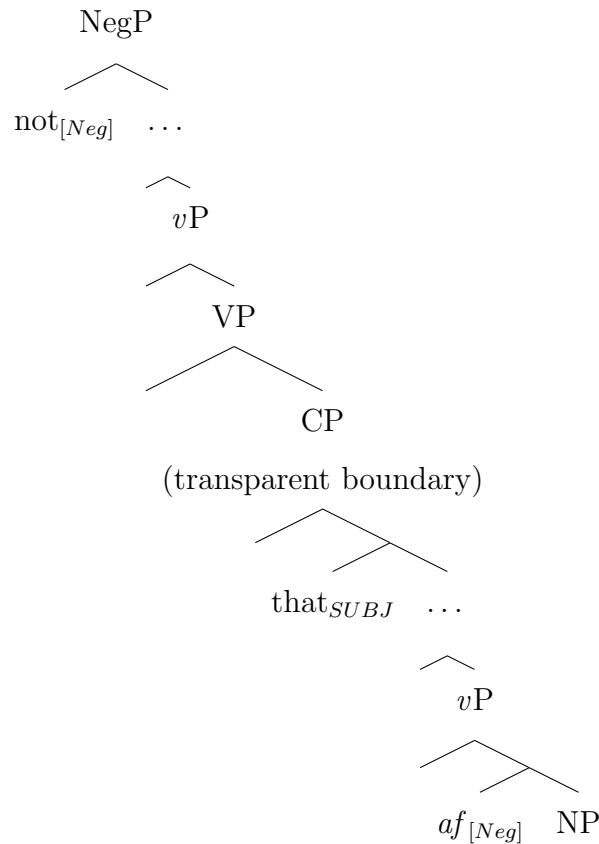
In the course of my work on Hebrew indefinites, the focus has shifted from comparing each pair of indefinite pronouns separately, to understanding the system as a system of variables where all indefinite pronouns share the same type of (semantic) lexical entry, but differ in feature composition and in the domain restrictions they impose on the noun phrase they modify. In some languages, for some indefinite pronouns, these restrictions have become encoded in their semantics; for example, Spanish *algún* may have an antisingleton constraint as part of its lexical entry. In other cases, domain restrictions may be derived in the pragmatics, as conversational implicatures cancellable in conversation, for example, the domain widening property of German *irgendein*. I suggested that in Hebrew, domain restrictions, such as free choice, are not part of the lexical entries of these indefinite pronouns, but may be derived pragmatically, with dependence on the syntax.

Exploring the syntax-semantics of *af* ‘any, no’ and *kol* ‘any, each, every, all’ revealed that these indefinites are sensitive to particular operators available in the syntax. *Af* is specified for a [Neg] feature which needs to be valued by the matching feature of a negation operator; this is possible in long-distance contexts only if the properties of the matrix verb allow for the domain to be extended in such a way as to allow feature valuation. Therefore, we can say that *af* is licensed at the syntax-semantics interface. (1a,b) illustrate the proposed structures for the derivation of *af* in the immediate scope of a negation operator, (1a), and long-distance with respect to a negation operator, (1b).

- (1) a. Immediate Scope Licensing:



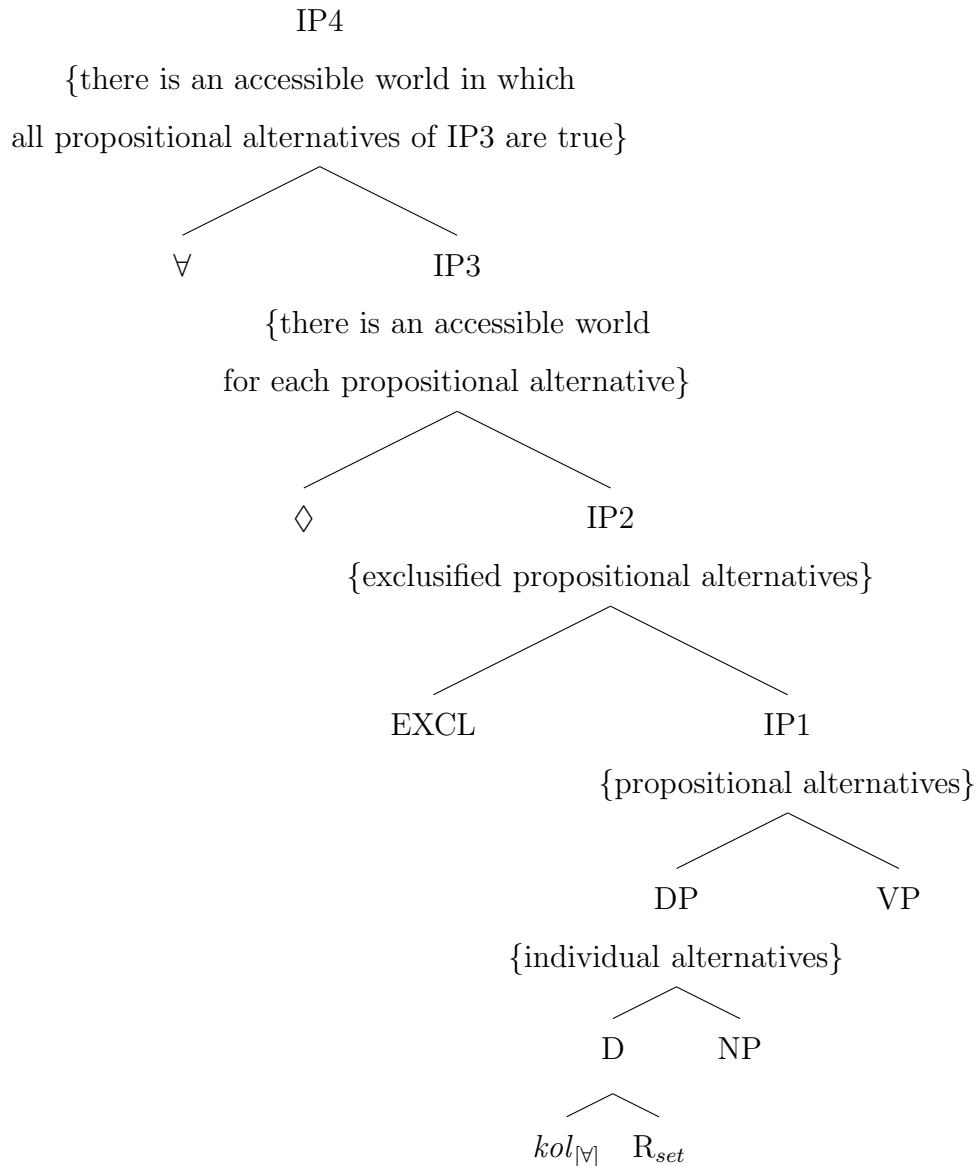
b. Long-Distance Licensing:



With respect to *kol*, it was proposed that the semantics of *kol* involves a contextual restriction, which leads to the interpretational differences found with *kol*, and relative to *af*. It was shown that *kol* is specified for a universal $[\forall]$ feature which is valued by the matching feature of a universal operator present in the syntax. Two agreement options were suggested to account for the various readings we find with *kol*, similar to the options available for the Spanish universal indefinite pronoun *cualquier*:

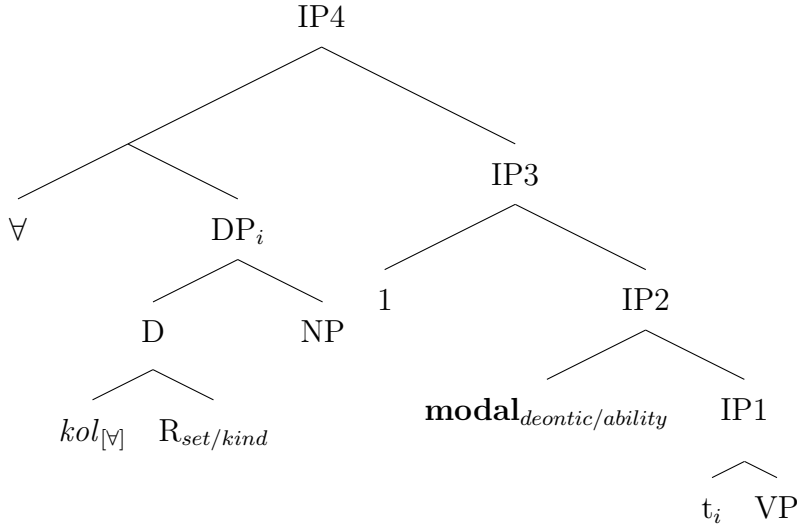
(a) Agreement with a universal operator (sentential quantifier) over propositional alternatives. If the *kol*-phrase stays in situ, the individual alternatives it introduces combine via pointwise functional application with the verbal predicate and expand

into propositional alternatives. These alternatives are then excluded, which results in a free choice interpretation of the *kol*-utterance.



- (b) Agreement with a universal operator (generalized quantifier) over individual alternatives. If the *kol*-phrase moves for checking purposes to a position where it is the first argument of a universal operator, then, depending on verbal aspect – episodic or generic – and because of the fact that noun phrases in Hebrew may denote instances of kinds or properties, the *kol*-utterance receives a generic or an episodic reading. The universal quantifier binds/“absorbs” the individual alterna-

tives generated by the *kol*-phrase such that the result is a singleton set containing a proposition.



It was also observed that similarly to other specialized indefinites crosslinguistically, for example German *irgendein*, no other operator may intervene between *kol* and the feature it is specialized for, in the case of *kol* – [∀]. This was shown in data where *kol* was found to be ungrammatical – in *there*-constructions, which are known to introduce an existential operator, as well as in the ‘indefinite hierarchy’ mentioned in Chapter 5.

- (2) a. #*yeš* **kol* *sakana be-štiat maim me-ha-berez.*
 there-is KOL danger in-drinking water from-the-tap
 #‘There is any danger in drinking tap water.’
- b. *kol*_[∀] *eyze*_[∃] *šloša yamim kibalti mixtav.* [**eyze*_[∃] *kol*_[∀]]
 KOL which three days received.1sg letter
 ‘Every three days, more or less, I received a letter.’

The dependence on the syntax was discussed in more detail with respect to *eyzešehu* ‘some, a certain’ (a prenominal indefinite), and *kolšehu* ‘some (or other), any’ (a postnominal indefinite). Both determiners have the property of being able to split, with the

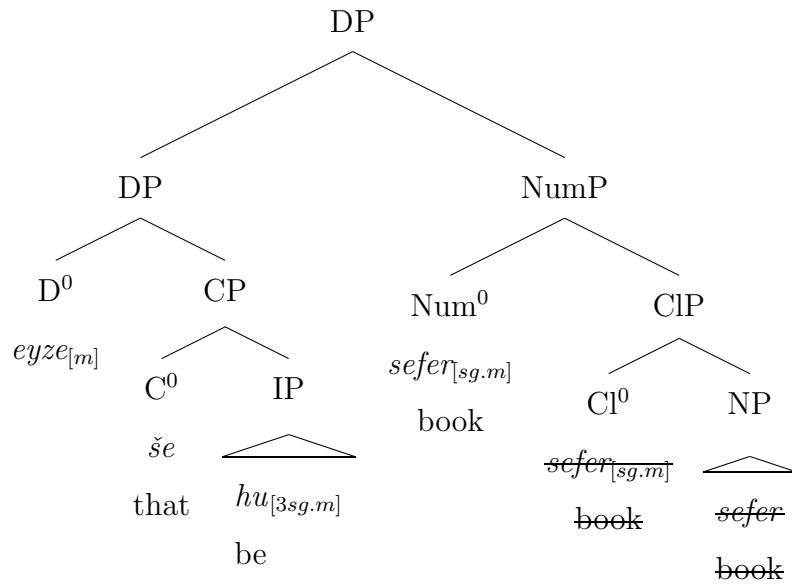
form [*eyze/kol* Noun *šehu*].

- (3) a. ani roča *eyze-še-hu* sefer.
 I want which-INDEF book
 ‘I want some/a certain book.’
- b. ani roča sefer *kol-še-hu*.
 I want book KOL-INDEF
 ‘I want some/any book.’
- c. ani roča *kol/eyze* sefer *še-hu*.
 I want KOL/which book INDEF
 ‘I want any book.’

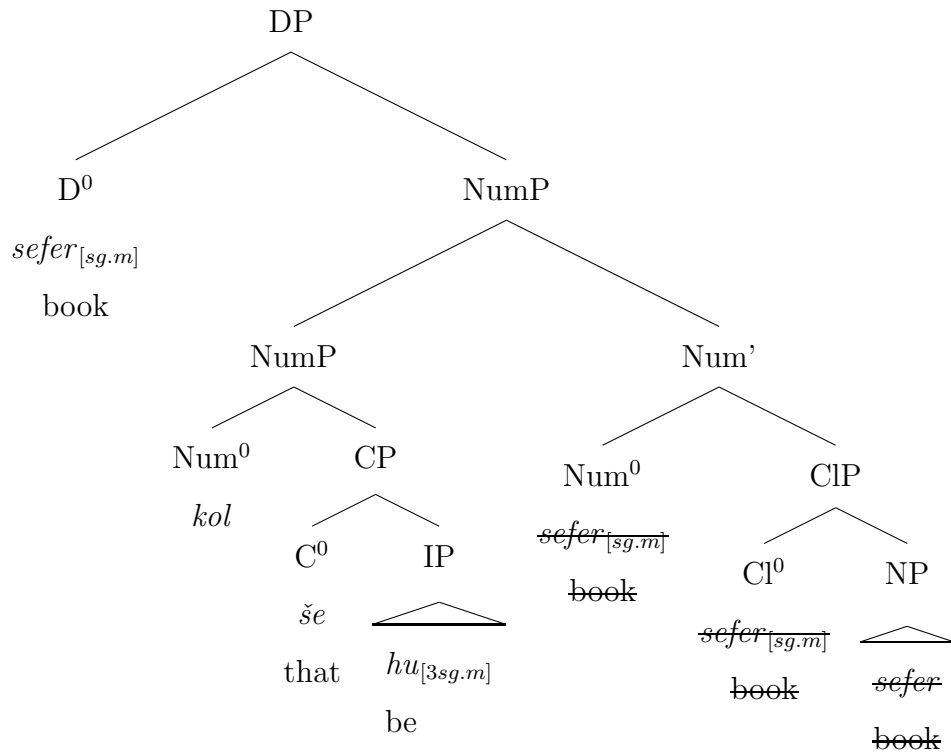
It was observed that in the cases where the determiner (or part of it) was postnominal, (3b,c), a free choice reading was more readily available; this was especially the case in the split version of these pronouns, (3c), as corroborated by the results of the experimental pilot study. Further studies are necessary to reconfirm the findings.

In addition, DP-internal syntactic structures were proposed for the complex *še-hu* particle, which I suggested functions as a free choice modifier. These are illustrated below for prenominal modification, postnominal modification, and the split construction, respectively.

(4) Prenominal *eyzešehu*:

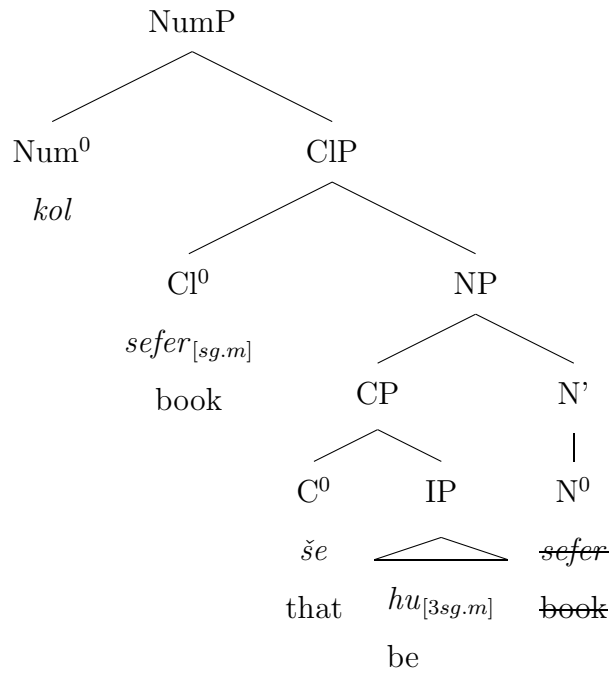


(5) Postnominal *kolšehu*:

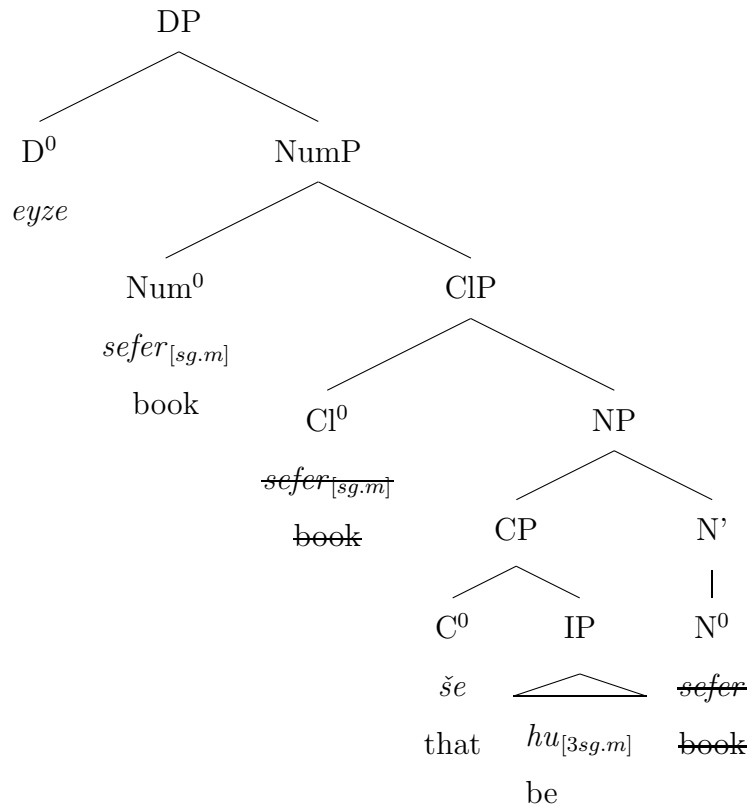


(6) The split construction:

a.



b.



A correlation between postnominal position and free choice readings of indefinite pronouns (in Hebrew) suggests that domain restrictions, usually derived in the semantic/pragmatic components of grammar, may also be encoded in the syntax. If this hypothesis is on the right track, it could eventually provide us with a better understanding of when and how, in the process of language acquisition, the domain restrictions found with indefinite pronouns are acquired.

Chapter 7

Appendix

The appendix has two parts. The first part, 7.1 – notes on existential indefinites, is intended for future research; it includes an overview of the data and ideas, and presents the relevant results from the experimental task. The second part, 7.2 includes the experimental items (the questionnaires), in Hebrew, as presented to the native speakers for the experimental task.

7.1 Notes on existential indefinites

In future work, I would like to address in detail the properties, licensing conditions and domain restrictions that distinguish another pair of indefinite pronouns in Modern Hebrew, namely *eyze* ‘some (or other)’ and *eyzešehu* ‘some, a certain’. In sections 7.1.2 to 7.1.6, I present some of the data gathered so far, in comparison with data and proposals for German *irgendein* and Spanish *algún* existential indefinites. Section 7.1.7 sketches some ideas that might eventually become part of an account for the interpretational variability observed with these indefinites. Section 7.1.8 reports the experimental results obtained in the grammaticality task, where *eyze* and *eyzešehu* were contrasted with respect to their ability to express specific (referential) interpretations.

7.1.1 Overview of research question

Recent research has been concerned with the fact that different indefinites impose different constraints on their domain of quantification: German *irgendein* has been associated with maximal domain widening and absolute free choice (Kratzer and Shimoyama 2002, Kratzer 2005), Spanish *algún* with an antisingleton constraint (Alonso-Ovalle and Menéndez-Benito 2010), and Hebrew *eyze* with proximal alternatives (Kagan and Spector 2008).

Eyze(šehu) determiners give rise to an interpretation that conveys ‘choice’, but do not require the maximal domain widening associated with ‘free choice’. The term ‘choice’ will be used to refer to an interpretation in which various alternatives are considered possible without making a commitment to the idea that all alternatives are possible (free choice). A question to be addressed is whether the effects observed with these determiners should be encoded in the semantics or in the pragmatics (as implicatures).

A preliminary suggestion is that *eyze(šehu)* determiners are existential indefinites that induce non-maximal domain widening. They carry a $[\exists]$ feature and must associate with an existential operator. Unlike *algún*, which encodes the ignorance effect in its semantics as an antisingleton constraint, the ignorance and indifference effects observed with *eyze(šehu)* determiners point towards a pragmatic solution.

Comparing the domain restrictions observed with different pronouns will provide us with a better understanding of their licensing conditions and whether these are semantic or pragmatic in nature.

7.1.2 *Eyze* nouns

In Hebrew, *eyze* indefinites differ from bare nouns in that they are not acceptable in generic, (1), and predicative contexts, (2).

- (1) a. be-dereX klal *kelev* noveax.
 usually dog barks
 ‘Usually a dog barks.’
- b. #be-dereX klal *eyze(šehu)* kelev noveax.
 usually which(INDEF) dog barks
 ‘Usually some dog barks.’
- (2) a. John (hu) **eyze(šehu)* *marče* le-balšanut.
 John (he) which(INDEF) professor to-linguistics
 ‘John is a/*some linguistics professor.’

In addition, as shown by Kagan and Spector (2008:247-248), there are truth-conditional effects distinguishing *eyze*-nouns from bare nouns. Two exemplifying situations are found in (3) and (4):

- (3) a. kxi tylenol.
 take tylenol
 ‘Take a tylenol.’
- b. kxi *eyze* tylenol.
 take which tylenol
Take some type of analgesic.

In (3a), the speaker suggest a particular type of headache medicine, while in (3b) the speaker suggests that any type of analgesic will do. Similarly, (4a) would be false in a situation where the discussion took any time different than exactly an hour.

- (4) a. dibarnu ša'a. [exactly]
 talked.2pl hour
 'We talked for an hour.'
- b. dibarnu *eyze* ša'a. [approximately]
 talked.2pl which hour
 'We talked for about an hour.'
- (from Kagan and Spector, 2008:247-248)

Another aspect of *eyze* has to do with an *ignorance/indifference* effect which appears relevant to the choice of *eyze* instead of a bare noun. For example, in (5),

- (5) tir'i! *eyze* baxur metapes al ha-gader. [ignorance/indifference]
 look! which guy is-climbing on the-fence
 'Look! A guy is climbing the fence.'

in a context in which we do not have any information about the guy climbing the fence, native speakers prefer to use *eyze* (rather than a bare noun). In a similar fashion, if the speaker is not willing to (or cannot) provide information regarding an individual, *eyze* is the preferred form.

- (6) A: mi hitkašer? B: *eyze* baxur. #A: ma šmo?
 who called which guy what name-his
 'A: Who called? B: Some guy. #?A: What's his name?'

It would be pragmatically odd to follow up on an *eyze baxur* 'some guy' answer with a question regarding the person's name, for example. The same happens with German *irgendein*.

Further evidence that the choice of *eyze* indicates ignorance and/or indifference can be found in the examples below. In a context where the noun phrase is modified in such a way as to provide specific information about a non-salient entity, *eyze* cannot be used felicitously precisely because such a context does not allow an indifference or an ignorance reading. This is exemplified in (7).

- (7) a. mi/ma ose et ha-ra'aš ha-ze? – *klavlav/#eyze* klavlav
 who/what makes ACC the-noise the-this? – puppy/some puppy
 xamud še- ymačti lifney šavua.
 cute that- adopted.1sg before week
 ‘Who/what is making that noise? – A/#some cute puppy I adopted last week.’

Notice however that if the context allows an ignorance/indifference reading, *eyze(šehu)* is fine.

- (8) Joe kana *eyze(šehu)* sefer še- haya haxi yakar ba-xanut.
 Joe bought which(INDEF) book that- was the-most expensive in-the-store
 ‘Joe bought a book that happened to be the most expensive one in the store.’
 (Modeled after Alonso-Ovalle and Menéndez-Benito, 2008:14).

The last examples make two important points. First, they show that *eyze(šehu)* determiners cannot be used for the *specific known* function; they can only be used if either ignorance or indifference are conveyed. Second, they show that the domain of *eyze(šehu)* determiners may be reduced to a singleton. This contrasts with Spanish *algún*, for example, which would be unacceptable in both (7) and (8).

7.1.3 *Eyzešehu* nouns

Eyze and *eyzešehu* have been considered as free variants (Borer 2005:154-5, footnote 18). This is illustrated in (9) where the distinction between *eyze* and *eyzešehu* is almost undetectable.

- (9) a. tav'i li *eyzešehu* perax yafe
 bring.f.IMP to-me which-INDEF flower pretty
 'Bring me any pretty flower.'
- b. tav'i li *eyze* perax yafe
 bring.f.IMP to-me which flower pretty
 'Bring me any pretty flower.'

In other contexts, however, we can find a clear difference between the uses of a bare noun, *eyze* and *eyzešehu*, with truth-conditional and pragmatic effects.

- (10) a. dibarnu ša'a. [exactly]
 talked.2pl hour
 'We talked for an hour.'
- b. dibarnu *eyze* ša'a. [approximately]
 talked.2pl which hour
 'We talked for about an hour.'
- (Modified from Kagan and Spector, 2008:247-248)
- c. #dibarnu *eyzošehi* ša'a.
 talked.2pl which-INDEF hour
 'We talked for about an hour.'

(10a) is true in a situation where we talked for exactly one hour, while (10b) would also be true in a situation where we talked for less, more or exactly one hour. *Eyzešehu* in (10c) is ungrammatical.

A second context where *eyze* and *eyzešehu* differ involves numeral quantifiers.

- (11) a. Dani hizmin šmona xaverim. [exactly]
 Dani invited eight friends
 ‘Dani invited eight friends.’
- b. Dani hizmin *eyze* šmona xaverim. [approximation; indiff./ign.]
 Dani invited which eight friends
 ‘Dani invited about eight friends.’
 (Modified from Kagan and Spector, 2008:247-248)
- c. Dani hizmin *eyzešehem* šmona xaverim. [indifference/ignorance]
 Dani invited which-INDEF eight friends
 ‘Dani invited some eight friends.’

The difference in terms of truth-conditions is similar to that in (10a&b) in that if Dani invited any number of friends other than exactly eight, (11a) is false, while (11b) is true. Interestingly, for the truth-conditions of (11c) reference to number is irrelevant. (11c) is true in a situation where the speaker does not care which particular (eight, in this case) friends Dani invited.¹

¹This intuition was confirmed by several native speakers of Hebrew residing in Israel. They were asked: (1) whether they prefer *eyze* šmona xaverim OR *eyzešehem* šmona xaverim; *eyze* was preferred; and (2) whether they felt a difference in meaning between the use of *eyze* versus *eyzešehu* in this example, and if yes, how would they describe it; the answer was “uncertainty with respect to the number of friends” with *eyze* versus “it doesn’t matter who these friends are” with *eyzešehu*.

Thirdly, *eyze* allows modification by a relative clause, while at the same time maintaining its free choice effect, i.e., in (12a), any book is a permitted option. In contrast, *eyzešehu*, in (12b), is odd (it would be marginally acceptable only under a wide scope, non-free choice interpretation, i.e., if there is a book *x* such that you want to read *x*, then you should read *x*). (12c) is added to show that this difference is indeed the result of modification by a relative clause.

- (12) a. At yexola likro *eyze* sefer še- at roča. [FC]
 you can read.INF which book that- you want
 ‘You can/may read any/whichever book you want.’
 Scenario: Any book in my library is a possible reading option.
- b. ??At yexola likro *eyzešehu* sefer še- at rotza. [no FC]
 you can read.INF which-INDEF book that- you want
 ‘You can/may read a book that you want.’
- c. At yexola likro *eyze(šehu)* sefer. [FC]
 you can read.INF which(INDEF) book
 ‘You can/may read some book.’
 Scenario: It is suggested to the addressee that reading a book, any book is a permitted option.

A fourth distinguishing feature is that *eyzešehu* can be ‘specific’ (the *specific known* function), as in (13). This property sets it apart from bare nouns and *eyze* nouns, both of which are dispreferred in this context, as well as from *irgendein* and *algún*, which cannot receive a referential interpretation.

- (13) a. kol ba'al shaxax *eyzešehu* ta'arix - et ha-yom huledet shel
 each husband forgot which-INDEF date - ACC the-day birth of
 ishto.
 wife-his
 'Each husband has forgotten a certain date - his wife's birthday.'
- b. #bare noun; #*eyze*; #*irgendein*; #*algún*

Finally, there are cases where *eyzešehu* is dispreferred, while *eyze* is the preferred determiner.

- (14) a. ??tir'il *eyzešehu* baxur metapes al ha-gader.
 look! which-INDEF guy is-climbing on the-fence
 'Look! Some guy is climbing the fence.'
- b. tir'il *eyze* baxur metapes al ha-gader.
 look! which guy is-climbing on the-fence
 'Look! Some guy is climbing the fence.'

Some native speakers of Hebrew report an intuition with respect to *eyze* and *eyzešehu* which can be described as a narrowing down of the set of possible individuals corresponding to these indefinites – the set corresponding to *eyze* is wider than the set corresponding to *eyzešehu*.

7.1.4 Proximal alternatives

Kagan and Spector (2008) discuss *eyze* pronouns – interrogative *eyze* and existential/indefinite *eyze*. The initial aim of the authors is to find a unified account for both types of *eyze* in terms of Hamblin alternatives. They propose that interrogative

eyze, (15a), triggers a set of alternatives, shown in (15c), where any book is a possible answer.

- (15) a. *eyze sefer at ohevet?*
 which book you like?
 ‘Which book do you like?’
- b. $[[eyze\ sefer]] = \{\text{Huck Finn, The Bartimaeus Trilogy, ...}\}$

For existential/indefinite *eyze*, Kagan and Spector distinguish three environments where this determiner appears and claim that the interpretation of *eyze* depends on the type of noun phrase it combines with.

(I) *Eyze* can appear with quantity-denoting constituents, such as numerals, and gives rise to an approximately interpretation, with truth-conditional effects.

- (16) Dani hizmin *eyze šmona xaverim*. [approximately]
 Dani invited which eight friends
 ‘Dani invited about/some eight friends.’
 (from Kagan and Spector, 2008:247)

Kagan and Spector propose that *eyze* triggers an ‘alternative’ interpretation of the numeral that it combines with and quantifies over the alternatives. The alternatives need to be restricted to those “close” or “similar” to the contextually salient quantity; we need a proximity component for *eyze*, such that *eyze* would trigger existential quantification over a set of “close by” alternatives. This proximity requirement is also found when *eyze* does not have a truth-conditional affect, as in (17).

(II) Kagan and Spector also show that when *eyze* combines with property-denoting constituents, it appears to quantify over a subset of the relevant noun phrase.

- (17) a. kxi *eyze* tylenol. (any type of analgesic)
 take which tylenol
 ‘Take some tylenol.’
- b. $[[eyze\ tylenol]] = \{\text{excedrin, tylenol, ..., analgesic}\}$

In (17a), *eyze* quantifies over the property-denoting “tylenol”, but also over similar entities such as other types of headache medicine, (17c), including their superset (i.e. analgesic).

Kagan and Spector propose the following solution for the semantics of *eyze* in terms of proximal alternatives. “A sentence that contains an expression of the type *eyze* α asserts roughly that there exists an individual within the set of α ’s alternatives that makes the proposition true” (Kagan and Spector, 2008:250).

- (18) Preliminary semantics of existential *eyze* (Kagan and Spector, 2008:250-254):
 Let p be the propositional content of the sentence S that contains indefinite *eyze*. Let α be the constituent to which *eyze* applies. $[[\alpha]]_A$ is the set of α ’s alternatives, $[[\alpha]]_{PA}$ is the set of α ’s proximal alternatives, and p^a is identical to p except for the fact that within p^a , α is substituted by a , and *eyze* is omitted. Then,
- $$[[S]] = \{\exists a[a \in [[\alpha]]_{PA} \wedge p^a = 1]\}$$

An apparent problem with Kagan and Spector’s proposal is that the substitution process is taking place inside a proposition; propositions are opaque in the relevant sense, rendering this substitution unlikely.

Furthermore, if we want to extend this proposal to *eyzešehu* determiners², we see that it is not possible; *eyzešehu* determiners do not have an approximation reading.

²Since *eyze* and *eyzešehu* have been considered as free variants (Borer 2005:154-5, footnote 18), we may expect them to have similar semantics/pragmatics.

- (19) Dani hizmin *eyzešehem* šmona xaverim. [$\sqrt{\text{indiff.}}$, #approx.]
 Dani invited which-INDEF eight friends
 ‘Dani invited some eight friends.’ (we do not know or care who these people are, we just know that there are eight of them in this case)

(III) Kagan and Spector propose that when *eyze* does not quantify over proximal alternatives, it is assigned a regular Hamblin semantics (it triggers a set of open alternatives). Existential/indefinite *eyze* can appear with a set of individuals, and in this case it has no affect on truth-conditions.

- (20) a. Dani pagaš (*eyze*) student.
 Dani met (which) student
 ‘Dani met a/some student.’
- b. $\{\exists x[x \in [[a \text{ student}]]_A \wedge \text{met}(\text{dani}, x) = 1]\}$
 $= \{\text{Dani met Jim, Dani met Joe, ...}\}$
 (Modeled after Kagan and Spector, 2008:253)

The proposed semantics for *eyze* determiners which are undefined with respect to ‘proximity’ is given in (21):

- (21) Revised semantics of existential *eyze* (Kagan and Spector, 2008:254): same as (18) except that if $[[\alpha]]_{PA}$ is undefined, then,
 $[[S]] = \{\exists a[a \in [[\alpha]]_A \wedge p^a = 1]\}$

The main problem with Kagan and Spector’s account is that we do not know how the proximal alternatives are restricted. Given the data examined so far, the only reliable environment for proximal alternatives is when *eyze* modifies a numeral quantifier. In addition, there are important properties of *eyze* that are not accounted for such as

ignorance and *indifference* effects. Since we do not yet know how proximal alternatives are defined, let us say, for now, that *eyze* quantifies over an open set of alternatives, as Kagan and Spector suggest. We would then expect *eyze* to behave similarly to other free choice indefinites, such as German *irgendein*. This is considered in the next section.

7.1.5 Free Choice indefinites – *irgendein*

Eyze and *irgendein* appear to give rise to similar ignorance and indifference effects:

- (22) a. *Irgendjemand* hat angerufen. #Wer war es? [ignorance and/or indiff.]
 irgendet-*one* has called. who was it?
 ‘Someone called. Who was it?’ (Kratzer & Shimoyama, 2002:10)
- b. *eyze* baxur čilčel. #mi ze haya? [ignorance and/or indifference]
 which guy called. who this was?
 ‘Someone called. Who was it?’

as well as to free choice effects:

- (23) a. Wen soll ich einladen? *Irgendjemand*/#Jemand. [indifference]
 Who shall I invite? Somebody or other/Somebody. (Kratzer and Shimoyama, 2002:10)
- b. et mi ani azmin? – tazmini *eyze* student.
 ACC who I invite.1sg.FUT? – invite.2sg.f.FUT which student
 ‘Who should/shall I invite?’ – Invite some student (or other).’

However, they differ with respect to the free choice effects that they trigger, in other words, they place different restrictions on their quantification domains. This is exemplified in the following scenario, modified from Alonso-Ovalle and Menéndez-Benito 2008, which shows that the domain of *irgendein* cannot be restricted, while the domain of *eyze* allows this.

- (24) Hide and seek scenario 1: the set of rooms is {living-room, room 1, room 2}.
Where is Juan?
- a. Juan is in some room. [\Diamond living-room \vee \Diamond room 1 \vee \Diamond room2]
 $\sqrt{\text{algún}}$; $\sqrt{\text{irgendein}}$; $\sqrt{\text{eyze}(\text{šehu})}$
 - b. Juan is not in the living room, but he is in some room. [\Diamond room1 \vee \Diamond room2]
 $\sqrt{\text{algún}}$; $\sqrt{\text{eyze}(\text{šehu})}$; $\# \text{irgendein}$
 - c. Juan is not in the living room or in room 1. [\Box room2]
 $\# \text{algún}$; $\# \text{eyze}(\text{šehu})$; $\# \text{irgendein}$

Irgendein is felicitous only in a situation where all rooms are possibilities and infelicitous otherwise. *Eyze* and *algún* are more flexible in that if we subtract one room, they are still fine in this situation. The main point here is that the options for *eyze* and *algún* can be restricted, unlike for *irgendein*.

Irgendein-type indefinites are existential free choice items (FCIs); they are domain wideners and cannot be contextually restricted (Kratzer & Shimoyama 2002; Kratzer 2005). The difference between the plain indefinite *ein* and *irgendein* is that *ein* selects for a proper subset of a given domain, while *irgendein* selects a whole set (Kratzer and Shimoyama, 2002). This is illustrated in (25) where *ein mann* denotes a subset of the set of men, while *irgendein* denotes the set of all men.

- (25) For $[[\alpha]]^{w,g} \subseteq D_e$:
- a. $[[\mathbf{ein}_{D'}-\alpha]]^{w,g} = \{x: x \in [[\alpha]]^{w,g'} \ \& \ x \in g'(D')\}$
 - b. $[[\mathbf{irgend}-\alpha]]^{w,g} = \{x: \exists g'[x \in [[\alpha]]^{w,g'}]\}$
 - c. $[[\mathbf{irgend}-[\mathbf{ein}_{D'} \text{ mann}]]]^{w,g} = \{x: \exists g'[x \text{ is a man in } w \ \& \ x \in g'(D')]\} = \{x: x \text{ is a man in } w\}$

Under a free choice reading, the propositional alternatives generated by the free choice indefinite are ‘distributed over’ the accessible worlds introduced by the modal. *Irgendein*, unlike *ein*, induces maximal domain widening, similarly to English *any*. In (26a), the modal requires that there is an alternative that is true in every accessible world. This however still allows Mary, in (26b), to marry the same man in every accessible world.

- (26) a. Mary musste irgendeinen Arzt heiraten.
 Mary had to *irgend-one* doctor marry
 ‘Mary had to marry some doctor or other.’ (Kratzer 2005)
 \rightarrow any doctor is a permitted option, i.e., for every doctor *d*, there is some permitted world in which Mary marries *d*.
- b. Situation 1:
 {Mary marries John is *w*1,
 Mary marries John is *w*2,
 Mary marries John is *w*3 ...}
- c. Situation 2:
 {Mary marries John is *w*1,
 Mary marries John is *w*2,
 Mary marries Tim is *w*3, ...}

Thus, in order to derive the free choice effect, there must be an additional distribution requirement, which ensures that there is an accessible world for every alternative generated by the free choice indefinite, as illustrated in (27):

- (27) Situation 3:
 {Mary marries Adam is w1,
 Mary marries John is w2,
 Mary marries Tim is w3, ...}

This distribution requirement is derived by Kratzer and Shimoyama (2002) as a conversational implicature, since the effect is cancelable/disappears in certain environments such as with negation and in downward entailing contexts.

An example with the Hebrew determiners is given below. Differently from the conditions for a felicitous *irgendein*-utterance, in Hebrew, (28a) successfully describes both the situation in (28b) and the situation in (28c).

- (28) a. Rina tikne *eyze(šehu)* sefer balaši.
 Rina buy.FUT which(INDEF) book detective
 ‘Rina will buy some detective novel.’
- b. Situation 1: Rina is on her way to the store, but she’s in a hurry, so she will buy the first suspense book she comes across, it doesn’t matter to her which one.
 Set of alternatives:
 {Rina buys *A Study In Scarlet* in w1,
 Rina buys *The Sign of the Four* in w2,
 Rina buys *The Hound of the Baskervilles* in w3, ... }

- c. Situation 2: Rina has told me that she is going to buy a Sherlock Holmes detective novel today and she is debating between two particular ones – *A Study In Scarlet* and *The Sign of the Four*; she is not interested in buying any other book but one of these two.

Set of alternatives:

{Rina buys *A Study In Scarlet* in w1,
Rina buys *The Sign of the Four* in w2,
Rina buys *A Study In Scarlet* in w3, ... }

In modal cases, *eyze(šehu)* may have a free choice reading (29a), or a wide-scope reading (epistemic effect), namely that there is only one doctor who is relevant to the discourse, (29b). This is similar to *irgendein*.

- (29) a. Rina črixa lehitxaten im *eyze(šehu)* rofe. [FC]
Rina has-to marry.INF with which(INDEF) doctor
'Rina should marry a/some doctor.' – i.e., any doctor is a permitted option.
- b. Rina črixa lehitxaten im *eyze(šehu)* rofe. [indiff./ign.]
Rina has-to marry.INF with which(INDEF) doctor
'Rina has to marry a/some doctor.' – i.e., I could point him out to you.

A contrast between *eyze* and *eyzešehu* indefinites is observed in (30a). When the domain of the noun is modified by a relative clause, *eyze* behaves similarly to *irgendein* in that they are both acceptable and may indicate maximal domains; *eyzešehu* and *algún*, on the other hand, are not felicitous.

- (30) a. At yexola likro *eyze/#eyzešehu* sefer še- at roča.
 you can read.INF which(INDEF) book that- you want
 ‘You can/may read any book you want.’ [ability/permission]

$\sqrt{\textit{irgendein}}$, $\#\textit{algún}$

- b. At yexola likro *eyze(šehu)* sefer.
 you can read.INF which/which-INDEF book
 ‘You can/may read any/some book.’

$\sqrt{\textit{irgendein}}$, $\sqrt{\textit{algún}}$

This example indicates that *eyze* and *eyzešehu* may be subject to different domain restrictions. I leave this for further research.

Turning our attention to *eyzešehu*, although in some contexts, e.g. with modals, *eyzešehu* can express free choice, this is not always the case. The specific reading found with *eyzešehu* is not available with *irgendein*, nor with *algún*.

- (31) kol ba'al shaxax *eyzešehu* ta'arix - et ha-yom huledet shel
 each husband forgot which-INDEF date - ACC the-day birth of
 ishto.
 wife-his
 ‘Each husband has forgotten a certain date - his wife’s birthday.’

$\#\textit{eyze}$; $\#\textit{irgendein}$; $\#\textit{algún}$

The data show that unlike the domain of *irgendein*, the domains of *eyze* and *eyzešehu* can be restricted, in different ways, but are they like *algún*?

7.1.6 Antisingleton indefinites – *algún*

Alonso-Ovalle and Menéndez-Benito (2003) have shown that Spanish *algún* is used to indicate ignorance. In the following example, *algún* can be used felicitously only if there are no restrictions known to the speaker regarding the possible candidates for dating.

- (32) a. María está saliendo con algún chico del departamento de
 Mary is going out with some guy of the department of
 lingüística.
 Linguistics
 ‘Maria is dating some guy from the Linguistics department.’
- b. #Cuál? ‘Which one?’
 (Alonso-Ovalle and Menéndez-Benito, 2003:2)

The Hebrew version is found in (33):

- (33) a. Mika yočet im eyze baxur me-ha-xug le-balšanut.
 Mika is-going-out with which guy from-the-department to-linguistics
 ‘Mika is dating a/some guy from the linguistics department.’
- b. √ Mi? ‘Who?’

(33) shows that Hebrew *eyze* is not equivalent to Spanish *algún* in terms of ignorance effects. First, (33) allows follow-up questions regarding the identity of the person Mika is dating. A scenario that would allow this kind of follow-up question, would be, for example, a case where the interlocutor assumes indifference rather than ignorance on the speaker’s part. This distinction is not possible with *algún*. Second, although both *eyze* and *algún* signal ignorance, they seem to do so in different ways.

(34) We are talking to a friend at a party. We see his wife with a group of people further away. We know they are literature professors, but nothing else.

a. *eyze* marče le-sifrut medaber ita.
 which prof to-literature talks to-her
 ‘Some literature professor is talking to her.’

b. #*Algún* profesor de literatura está hablando con tu mujer.
 ‘Some literature professor is talking to your wife.’

The above scenario combines partial information about a group of individuals (the knowledge that they are literature professors, but ignorance in all other relevant respects) with visual identification of one/the referent as belonging to this group. *Eyze* is licensed in these conditions, while *algún* is not. This distinction appears to be due to the visual identification part. If we are able to pinpoint one individual (therefore, a singleton) then *algún* cannot be licensed; *eyze*, on the other hand, seems to be more sensitive to the ignorance aspect, rather than the cardinality of its domain. Alonso-Ovalle and Menéndez-Benito (2003:2) suggest that in addition to the ignorance component, there is another condition that needs to be satisfied for *algún* to be felicitously used, namely, there must be no direct perceptual acquaintance between the speaker and the individual (?or entity) under discussion.

The data suggest that two situations need to be taken into account. When there is no direct evidence as to the members of a set of possible relevant individuals, *algún* conveys ignorance with respect to at least two different individuals; this is evidenced by the dating example and the pragmatic oddity of asking “who?” following an *algún* modified noun. *Eyze* on the other hand, does not have such a restriction; the hearer can either infer ignorance on the speaker’s part thus rendering the question “who?” pragmatically odd, or, the hearer can infer that the speaker refrains from providing available information which renders asking “who?” pragmatically fine.

Alonso-Ovalle and Menéndez-Benito (2010) derive ignorance implicatures in non-modal contexts from the assumption that there is a silent *Assert* operator (a universal epistemic modal; all sentences are implicitly modalized), and use subset selection functions (functions from sets to subsets) to model contextual domain restrictions. *Algún* is shown to have an ignorance component not present with the ‘plain’ indefinite determiner *un*, as shown in (35a). Compare with (35b) where *algún* is licensed in the scope of an intensional operator.

- (35) a. María married *un* linguistics student, namely Pedro. #*algún*
 b. Pedro thinks that María married *algún* Linguistics student.

Algún imposes a constraint on the speaker’s epistemic alternatives (the set of worlds compatible with what the speaker believes), that María didn’t marry the same Linguistics student in all those worlds. (35b) carries a uniqueness assumption: in each accessible world, María married only one student. When uniqueness cannot be taken for granted, *algún* can convey ignorance with respect to the total number of individuals that satisfy the existential claim. In (36a), for example, the speaker does not know how many dents the car has. This is similar to the approximation reading found with *eyze* in Hebrew. However, (35b) shows that differently from *eyze*, which is licensed with an NP modified by a numeral quantifier, *algún* is not.

- (36) a. My car has *algún/eyze* dent.
 b. My car has **algún/eyze* five dents.

Alonso-Ovalle & Menéndez-Benito propose that the modal component of *algún* is weaker than Free Choice in that it requires that at least two individuals in the domain be possibilities. The authors suggest that this modal component is a conversational

implicature, meaning that it is cancellable, (37).

- (37) Juan knows that María married *algún* student in the department. He doesn't know who, but I do!
 → This conveys ignorance on Juan's part, rather than the speaker's. The implicature is cancelled when the epistemic background is updated with the information available to the speaker.

The fact that the modal component of *algún* is weaker than free choice is illustrated with a hide-and-seek scenario. As long as there are two available options, *algún* may be used felicitously.

- (38) Hide and seek scenario: {room1, room2, room3}. Where is Juan?
 a. Juan is not in room1, but he is in *alguna/some* room.

Algún is possible because there is a choice, as far as the speaker's epistemic state is concerned, regarding the room of the house where Juan is hiding. This is so even though one of the rooms has been ruled out. German *irgendein* is not possible in this case because it triggers maximal widening of the domain and so every room must be an option as far as the epistemic state of the speaker is concerned.

Alonso-Ovalle and Menéndez-Benito (2010) derive the interpretation of *algún* as follows:

- (39) Juan is in *alguna* room of the house.
 a. The set of possible rooms: {room1, room2}
 b. $\Box(\text{algún}(P)(Q))$, where P and Q are the two predicates that *algún* combines with.

- c. Assertion: $\Box[\exists x[x \in f(\text{room}) \ \& \ \text{Juan is in } x]]$ (f is a subset selection function) (= $\Box(\text{Juan is in room1} \vee \text{Juan is in room2})$)
- d. Antisingleton constraint: $|f(\text{room})| > 1$
- e. The Modal Variation component: $\exists w', w'' \in D_w[\{x: P(w')(x) \ \& \ Q(w')(x)\} \neq \{x: P(w'')(x) \ \& \ Q(w'')(x)\}]$, where D_w is the set of worlds epistemically accessible from w .
- f. Ignorance implicature: $\neg\Box(\text{Juan is in room1}) \ \& \ \neg\Box(\text{Juan is in room2})$ In interaction with the epistemic modal *Assert*, *algún* gives rise to the implicature that it is false that we know that the stronger claims are true.
- g. **The semantics of *algún*:**
 $[[\text{algún}]] = \lambda f_{\langle et, et \rangle} . \lambda P_{\langle et \rangle} . \lambda Q_{\langle et \rangle} : \text{antisingleton}(f) . \exists x[f(P)(x) \ \& \ Q(x)]$
 (from Alonso-Ovalle and Menéndez-Benito (2010))

Although *eyze* and *algún* both signal ignorance, they do so in different ways.

- (40) We are talking to a friend at a party. We see his wife with a group of people further away. We know they are literature professors, but nothing else.

- a. *eyze* marče le-sifrut medaber ita.
 which prof to-literature talks to-her
 ‘Some literature professor is talking to her.’
- b. #*Algún* profesor de literatura está hablando con tu mujer.
 ‘Some literature professor is talking to your wife.’

(40) shows that when there is direct evidence as to which individual we are referring to while still maintaining the ignorance factor, *eyze* is felicitous but *algún* is not. Similarly, *eyze* is felicitous in (41) where it can be associated with both ignorance and irrelevance, while *algún* is not acceptable.

(41) a. #*Algún* hombre está subiendo a la reja.

‘Some man is climbing the railing.’

√*eyze*, ??*eyzešehu*

(41) make sense if we assume an antisingleton constraint for *algún*. They also show that we cannot assume the same constraint for *eyze*.

In the case of *algún*, besides the ignorance component, there is another condition that needs to be satisfied, namely, there must be no direct perceptual acquaintance between the speaker and the individual (entity) under discussion. In contrast, *eyze* is the preferred choice in these scenarios.

Comparing *eyze(šehu)*, *algún* and *irgendein*, we find that:

- *Eyze(šehu)* differs from *irgendein* in terms of widening – unlike *irgendein*, *eyze(šehu)* does not necessarily require a maximal domain; and,
- *Eyze(šehu)* differs from *algún* in terms of ignorance and indifference, as well as in terms of restrictions on the quantification domain – *algún* has an antisingleton constraint, while for *eyze(šehu)* determiners this is a possible but not necessary condition.

I suggest that *eyze* is used in order to indicate ignorance/indifference and to avoid a false claim. *Eyzešehu*, in addition to the latter, can indicate specificity (but not approximation). I suggest that the approximation implicature of *eyze* can also be thought of in terms of indifference/ignorance. This would unify the different types of existential *eyze* with similar pronouns crosslinguistically. Deriving the difference

between *eyze* and *eyze(šehu)* in the pragmatics would mean an appeal to Grice's (1975) conversational maxims, in this case, the *maxim of relevance* and the *maxim of quality*. From the point of view of the maxim of relevance, by using *eyze* or *eyze(šehu)*, the speaker conveys indifference with respect to the subject matter. From the point of view of the maxim of quality, by using *eyze* or *eyze(šehu)*, the speaker conveys ignorance with respect to the subject matter and the determiner is used to avoid making a false claim.

7.1.7 Summary and a tentative proposal

Summarizing the observed differences between *eyze* and *eyzešehu*, we find the following:

- (a) With time adverbials, *eyze* may express approximation, while *eyzešehu* is disallowed:
 - (a.1) *He was chatting for eyze/*eyzešehu/approximately an hour.*
- (b) In the context of modification of a numeral quantifier or of a property-denoting noun, *eyze* may express approximation, as in (b.1) and (b.2), while *eyzešehu* can only express indifference (b.3):
 - (b.1) *Take eyze/*eyzešehu/some apple (or other fruit).*
 - (b.2) *Dani invited eyze/*eyzešehu/approximately eight friends.*
 - (b.3) *Dani invited *eyze/eyzešehu/??some eight friends, I don't know or care who they are.*
- (c) *Eyze*, but not *eyzešehu*, is allowed in subtriggered cases:
 - (c.1) *You may read any/eyze/*eyzešehu book you like.*
- (d) In “singleton” scenarios, i.e. scenarios where *eyze* and *eyzešehu* can be used even when the domain is restricted to a singleton set, *eyze* is used for specific unknown readings, as in (d.1), where the unknown referent can be pointed out; *eyzešehu* is the preferred determiner for specific known readings, (d.2); and both determiners

may be used when the speaker wants to convey ignorance or indifference with respect to an (un)known entity, as in (d.3).

(d.1) *Look! some/eyze/*eyzešehu/*algún/*irgendein guy is climbing the fence.*

(d.2) *I'm looking for a certain/??eyze/eyzešehu/*algún/*irgendein book; it is called The Bartimaeus Trilogy.*

(d.3) *He bought some/eyze/eyzešehu/*algún book that happened to be the most expensive one in the store.*

I suggest that the approximation reading of *eyze* may be considered as a type of free choice reading, to be derived as a conversational implicature. However, we would still need to find a solution to explain proximal alternatives in a way that would help us identify those “reasonably close” alternatives. Perhaps a solution can be found by appealing to a doubly-relative semantics of modality (Kratzer 1981, 1991), where we would have two context-dependent parameters (conversational backgrounds): (i) a *modal base* providing the accessibility relation, and (ii) an *ordering source* which would give us from among all accessible worlds, the ones that are the most relevant to the conversation. This idea will be explored in future work.

Summing up, the property that unifies *eyze* and *eyzešehu* across contexts is that they express an attitude of *indifference* and/or *ignorance* on the speaker’s part. These are (cancellable) conversational implicatures. From a crosslinguistic point of view, both *eyze* and *eyzešehu* belong to the group of domain widening indefinites, but show language specific variability as well. Similarly to *irgendein* and *algún* they express choice, but not necessarily free choice (unlike *irgendein*), nor restricted choice (unlike *algún*).

7.1.8 Experimental results and discussion

The indefinite determiners *eyze* ‘some (or other)’ and *eyzešehu* ‘some, a certain’ were tested for differences in terms of specificity. Initial observations varied with respect to the use of one versus the other determiner – some native speakers dispreferred *eyzešehu*

altogether, while other native speakers preferred *eyzešehu* when referring to specific entities mentioned in the discourse. Several items were used in this condition in order to try and “draw out” the specific reading of either determiner, if indeed native speakers perceive the determiners as such, for example, the adverb *only* (example below) and inverse scope with respect to negation. The cues were given in the background sentence. A sample set of this condition is rendered in Table 7.1.

Table 7.1: Sample set of the *Specificity* condition

Conditions	Background sentence	Target sentence
1.1 <i>specific eyze</i>	<u>Only</u> Eyal wrote a bad review of Ron’s new designs.	Ron is sad, so I’m guessing that he heard <u>eyzo</u> review...
1.2 <i>specific eyzešehu</i>	<u>Only</u> Yaron wrote a bad review of Eyal’s new designs.	Eyal is sad, so I’m guessing that he heard <u>eyzošehi</u> review...
2.1 <i>nonspecific eyze</i>	Sharon’s new designs received lots of bad reviews.	Sharon is sad so I’m guessing that he heard <u>eyzo</u> review...
2.2 <i>nonspecific eyzešehu</i>	Gil’s new designs received lots of bad reviews.	Gil is sad so I’m guessing that he heard <u>eyzošehi</u> review...

The means per condition, presented in Table 7.2, indicate a slight preference for *eyzešehu* in both conditions, specific and nonspecific, when comparing the two determiners. However, overall, the rating is quite low, meaning that native speakers generally disprefer using these determiners when they want to convey *uniqueness*. Note also that the rating improves when these determiners appear in nonspecific contexts.

Table 7.2: *Specificity* condition: descriptive statistics

Condition	Mean	Nr. of answers	St.dev.	Median
1.1 <i>specific eyze</i>	1.61	71	.86	1.00
1.2 <i>specific eyzešehu</i>	2.06	76	1.12	2.00
2.1 <i>nonspecific eyze</i>	2.25	76	1.16	2.00
2.2 <i>nonspecific eyzešehu</i>	2.57	76	1.09	3.00

Since Hebrew does have the adjective *mesuyam* meaning ‘particular, specific’, this would probably be used as default. In colloquial Hebrew, speakers also use *spečifi* ‘particular,

specific’. Therefore, the low rating is not really surprising. The question is whether we can find a pattern after all.

If we look at Table 7.3, percentages of answers per rating per condition support the above observation and show more clearly that *eyze* is dispreferred in specific contexts – only 4% (out of 71 answers) would use *eyze* in this context, while 16% (out of 76 answers) prefer *eyzešehu*.

Table 7.3: Percentages of answers per rating in the *Specificity* condition

Condition/Rating	4=always	3=sometimes	2=rarely	1=never
1.1 specific <i>eyze</i>	4%	13%	24%	59%
1.2 specific <i>eyzešehu</i>	16%	18%	22%	43%
2.1 nonspecific <i>eyze</i>	22%	16%	26%	36%
2.2 nonspecific <i>eyzešehu</i>	25%	30%	22%	22%

A 2x2 repeated measures ANOVA, within-subjects effects, revealed a significant effect ($p < .05$) in both factors: *specific* ($F(1,69) = 31.15, p < .001$) and *nonspecific* ($F(1,69) = 5.54, p = .021$), meaning that within each factor a particular determiner, namely *eyzešehu*, was preferred.

To verify this result, a further analysis was performed of two-tailed paired-samples t -tests. A significant mean effect was found in three of the pairs. There was no significant difference in the nonspecific pair, meaning that both determiners were more or less equally acceptable in nonspecific contexts.

- 1st pair: specific *eyze* versus *eyzešehu* ($t(70) = -2.28, p = .025$).
- 2nd pair: specific versus nonspecific *eyze* ($t(70) = -4.34, p < .001$).
- 3rd pair: specific versus nonspecific *eyzešehu* ($t(75) = -3.82, p < .001$).

The pair that is of interest here is the first pair, where comparing the *specific* use of *eyze* versus *eyzešehu* produced a significant result/trend ($p = .025$). This is consistent

with the observations from Table 7.3, namely that *eyzešehu* is favoured over *eyze* in specific environments.

The findings so far suggest that *eyze* is dispreferred with a referential reading. On the other hand, we have also observed that *eyze* may be used for the “specific unknown” function, for example when we point out a particular individual in a situation but lack the information to identify the person further (e.g. *Look! eyze/some guy is climbing the fence.*). Further analysis of the data is needed in order to better understand the interpretational differences found with the *eyze* versus *eyzešehu* indefinite pronouns.

The next section lists the experimental items (the two versions of the questionnaire), in Hebrew, as they were presented to the native speakers.

7.2 Experimental items

Questionnaires
שאלון על עברית מדוברת

Questionnaire version A

משפט לדירוג	שאלון א משפט רקע	
הוא לא רוצה שכל עיתון יכתוב על זה.	אורן מצא נושא לכתבה השבועית שלו ומקווה שהוא היחיד שחשב על זה.	1
הם הסתובבו שם שנה.	אחרי הצבא החברים נסעו לטיול ארוך באירופה.	2
הוא לא יודע שיפגוש כל דוב בטיול היום.	אין דובים בכלל אבל סשה לא יודע את זה והוא מצפה לראות דובים.	3
לא ראו את הכוכבים.	היה גשם זלעפות בלילה.	4
הוא יודע שלא יפגוש כל דוב בטיול היום.	אלכס יודע שאין דובים אחרים.	5
נקווה שלא ירד גשם.	אנחנו נוסעים מחר לאסוף תותים.	6
הוא לא קנה איזה דיסק.	גיא קנה דיסק של מדונה אבל לא של שר.	7
אם דרון לא בוכה זה בגלל שלא שם לב שאיזשהו צעצוע שבור עכשיו.	דרון מאוד אוהב את הצעצועים שלו וחומי בדיוק לועס צעצוע.	8
הוא לא רוצה ששמעון יפגוש כל דוב בטיול היום.	דני יודע ששמעון מפחד מדובים.	9
עכשיו היא מוכנה להתפשר על איזשהו ספר.	האמא מאוכזבת שהילדים לא קוראים.	10
היא לא יודעת שכל עיתון יכתוב על זה.	הבוקר מאיה פרסמה כתבה על חתולים והיא מודאגת שעיתונים אחרים גם יכתבו על זה (אבל אנחנו יודעים שהעיתונים לא יכתבו על חתולים).	11
הוא היה מאוד קטן.	הגנן מצא קיפוד בגינה.	12
עכשיו היא מוכנה להתפשר על איזה ספר שהוא.	המורה מאוכזבת שהתלמידים לא קוראים.	13
שרון עצוב אז אני מניחה שהוא שמע איזו ביקורת...	העיצובים החדשים של שרון קיבלו הרבה ביקורות לא טובות.	14
אכלת כל אגס.	הצלחת מלאה באגסים בדיוק כמו שהשארתי לך אותה בבוקר.	15
אלון לא יודע שלילך תזכה באף פרס.	השופטים החליטו לבטל את חלוקת הפרסים השנה.	16
היום, למשל, לא היה ענן כלשהו בשמיים.	זיו מתמיד במחקרו על עננים למרות שהוא מתקדם מאוד לאט.	17
הוא מוכן ללבוש סוודר כלשהו.	יוסי רצה ללבוש את הסוודר הכחול אבל עכשיו נהיה לו ממש קר.	18
בשלב הזה הם מוכנים לגור באיזושהי דירה.	לחברים שלי נמאס לחפש דירות.	19
לכן, ליאת לא יודעת שאופירה תמצא אף צעצוע.	ליאת החביאה את הצעצועים אבל אופירה מכירה את מקומות המחבוא.	20

	שאלון א	
משפט לדירוג	משפט רקע	
היא לא הלכה לראות איזשהו סרט.	לירון הלכה לקולנוע אבל בדרך התחרטה.	21
היא לא רוצה שרחל תזכה באף פרס.	נרית רוצה את הפרסים לעצמה.	22
בשלב הזה אני מוכנה לגור באיזו דירה שהיא.	נמאס לי לחפש דירות.	23
היא לא ראתה איזשהו סרט.	נעמה ראתה את "היפה והחיה" אבל לא את "סינדרלה".	24
הוא קנה איזה דיסק.	עופר רצה לקנות דיסק למשה ליום הולדת והוא יצא עם שקית מהחנות.	25
אם איתמר לא בוכה זה בגלל שלא שם לב שאיזשהו צעצוע שבור עכשיו.	פלוטו אכל את הצעצוע הכי אהוב על איתמר.	26
היא רוצה שנעה לא תמצא אף צעצוע.	קרן שמה את הצעצועים במקום סודי.	27
ראיתי אף כוכב.	הלילה מעונן מאוד.	28
היא לא רוצה ששמוליק ימצא אף צעצוע אחר.	רותי החביאה את כל הצעצועים חוץ מהפנתר.	29
רון עצוב, אז אני מניחה שהוא שמע איזו ביקורת...	רק אייל כתב ביקורת לא טובה על העיצובים החדשים של רון.	30
היום, למשל, לא היה כל ענן שהוא בשמיים.	שמאל מתמיד במחקרו על עננים למרות שהוא מתקדם מאוד לאט.	31
הוא מוכן ללבוש כל סוודר שהוא.	שמשון רצה ללבוש את הסוודר הכחול אבל עכשיו נהיה לו קר ממש.	32

Questionnaire version B

	שאלון ב	
משפט לדירוג	משפט רקע	
הוא לא רוצה שאלכס יפגוש אף דוב בטיול היום.	אדם יודע שאלכס מפחד מדובים.	1
לכן, איילת לא יודעת שנינה תמצא כל צעצוע.	איילת החביאה את הצעצועים אבל נינה מכירה את מקומות המחבוא.	2
אף עטלף נבהל.	האנשים נכנסו בשקט למערה.	3
הוא לא יודע שיפגוש אף דוב בטיול היום.	אין דובים בכלל אבל פלד לא יודע את זה והוא מצפה לראות דובים.	4
הוא מוכן ללבוש איזה סוודר שהוא.	גיא רצה ללבוש את הסוודר הכחול אבל עכשיו נהיה לו קר ממש.	5
היום, למשל, לא היה איזה ענן שהוא בשמיים.	דורית מתמידה במחקרה על עננים למרות שהיא מתקדמת מאוד לאט.	6
היא רוצה שרן לא יזכה בכל פרס.	רונה רוצה את הפרסים לעצמה.	7
עכשיו הוא מוכן להתפשר על ספר כלשהו.	האבא מאוכזב שהילדים לא קוראים.	8
היא לא יודעת שאף עיתון יכתוב על זה.	הבוקר ורד פרסמה כתבה על חתולים והיא מודאגת שעיתונים אחרים גם יכתבו על זה (אבל אנחנו יודעים שהעיתונים לא יכתבו על חתולים).	9

	שאלון ב	
משפט לדירוג	משפט רקע	
כל ציפור הייתה שם.	הגינה הייתה ריקה.	10
עכשיו היא מוכנה להתפשר על כל ספר שהוא.	המחנכת מאוכזבת שהתלמידים לא קוראים.	11
גיל עצוב אז אני מניחה שהוא שמע איזושהי ביקורת...	העיצובים החדשים של גיל קיבלו הרבה ביקורות לא טובות.	12
אם יונתן לא בוכה זה בגלל שלא שם לב שאיזה צעצוע שבור עכשיו.	חומי אכל את הצעצוע הכי אהוב על יונתן.	13
היא לא רוצה שאורנית תזכה בכל פרס.	טובה רוצה את הפרסים לעצמה.	14
היא לא ראתה איזה סרט.	יעל ראתה את "היפיפייה והיחפן" אבל לא את "הקוסם מארץ עוץ".	15
בשלב הזה אני מוכנה לגור בדירה כלשהי.	נמאס לי לחפש דירות.	16
היה מזג-האוויר מאוד סוער.	המטריה עפה ברוח.	17
הוא לא קנה איזשהו דיסק.	יריב קנה דיסק של מדונה אבל לא של שר.	18
משה לא יודע שמינה תזכה בכל פרס.	השופטים החליטו לבטל את חלוקת הפרסים השנה.	19
אח"כ הוא עף החוצה ומצא גלידה.	הזבוב התיישב על החלון.	20
הוא קנה איזשהו דיסק.	מנשה רצה לקנות דיסק למיקה ליום הולדת והוא יצא עם שקית מהחנות.	21
אם זה קשה אני אעזור לך.	מצאתי תרגיל שתוכלי לפתור.	22
אם ניר לא בוכה זה בגלל שלא שם לב שאיזה צעצוע שבור עכשיו.	ניר מאוד אוהב את הצעצועים שלו וחומי בדיוק לועס צעצוע.	23
בשלב הזה אני מוכנה לגור בכל דירה שהיא.	נמאס לי לחפש דירות.	24
הוא יודע שלא יפגוש אף דוב.	סיפרו לטדי שאין דובים כאן בכלל.	25
היא לא הלכה לראות איזה סרט.	פנינה הלכה לקולנוע אבל בדרך התחרטה.	26
הוא מוכן ללבוש איזשהו סוודר.	צבי רצה ללבוש את הסוודר הכחול אבל עכשיו נהיה לו ממש קר.	27
הוא לא רוצה שאף עיתון יכתוב על זה.	רון מצא נושא לכתבה השבועית שלו והוא מקווה שהוא היחיד שחשב על זה.	28
היום, למשל, לא היה איזשהו ענן בשמיים.	רמי מתמיד במחקרו על עננים למרות שהוא מתקדם מאוד לאט.	29
אייל עצוב, אז אני מניחה שהוא שמע איזושהי ביקורת...	רק ירון כתב ביקורת לא טובה על העיצובים החדשים של אייל.	30
היא לא רוצה שדנה תמצא כל צעצוע אחר.	שירה החביאה את כל הצעצועים חוץ מהפנתר.	31
בטח ישמיעו אותו שוב בקרוב.	שמעתי שיר אתמול אבל אני לא זוכרת את המנגינה.	32

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