NEGATIVE DEPENDENCIES AND INTERVENTION EFFECTS IN TURKISH

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Negative Dependencies and Intervention Effects in Turkish

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ABSTRACT

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There are two main goals of this study: (i) to understand the descriptive properties of the *negative dependencies* (e.g. *hiçbir*, *any*, *ever*) in Turkish, which are basically expressions that require some kind of negation in a given structure (Giannakidou and Zeijlstra, 2017; Giannakidou, 2020; Zeijlstra, 2016, 2022); and (ii) to understand the so-called *intervention effects* (Linebarger (1980, 1987); Guerzoni (2006); Chierchia (2004, 2013); among others) on negative dependencies in Turkish, which, excluding the work of Kelepir (2001), seems to have gone largely unnoticed in Turkish literature on negative dependencies. To give an account for the problem of intervention effects, we will adopt the *scalar implicatures* approach based on the work of Chierchia (2004, 2013), which essentially proposes that the presence of some elements (e.g. universal quantifier, coordination, etc.) may disturb the licensing environment for negative dependents even when there is a valid licensor. Although the theory has some shortcomings, especially regarding the licensing of negative dependencies under question structures, we will observe that the scalar implicatures theory is able to account for a considerable fragment of intervention data in Turkish.

Keywords: Negative Dependency, NPI, NCI, Intervention Effects, Negation, Scalar Implicatures

ÖZ

TÜRKÇE'DE OLUMSUZ BAĞIMLILIKLAR VE ARAYA GİRME ETKİLERİ

Karataş, Batuhan

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Bu çalışmanın iki temel hedefi bulunmaktadır: (i) basitçe, belirli bir yapıda bir çeşit olumsuzluğa gereksinimi olan *olumsuz bağımlılıklar*'ın (örn. *hiçbir*, *any*, *ever*) Türkçe'deki betimleyici özelliklerini anlamak (Giannakidou and Zeijlstra, 2017; Giannakidou, 2020; Zeijlstra, 2016, 2022); (ii) Kelepir'in (2001) çalışması dışında Türkçe olumsuz bağımlılıklar alanyazınında pek fark edilmemiş olan olumsuz bağımlılıklar'daki *araya girme etkileri*'ni anlamak (Linebarger, 1980, 1987; Guerzoni, 2006; Chierchia, 2004, 2013). Araya girme etkileri sorununa bir açıklama getirmek için, Chierchia'nın (2004; 2013) çalışmasına dayanan ve temelde bazı birimlerin (örn. evrensel niceleyici, bağlaç, vb.) varlığının, uygun bir lisanslayıcı olduğu durumda bile olumsuz bağımlıların lisanslama alanını bozabileceğini öne süren *sayıl sezdirimleri* yaklaşımını temel alacağız. Sayıl sezdirimler kuramının, özellikle soru yapılarında olumsuz bağımlılıkların lisanslanmasıyla ilgili bazı eksikleri olmasına karşın, Türkçe'deki araya girme verilerinin kaydadeğer bir bölümünü açıklayabildiğini gözlemleyeceğiz.

Anahtar Kelimeler: Olumsuz Bağımlılık, OKB, OUB, Araya Girme Etkileri, Olumsuzluk, Sayıl Sezdirimleri

To my parents, who did everything they could for me.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AUX	Auxiliary
PAST	Past Tense
PRES	Present Tense
FUT	Future Tense
EVI	Evidentiality
ND	Negative Dependent
NC	Negative Concord
NPI	Negative Polarity Item
PPI	Positive Polarity Item
NCI	Negative Concord Item
NQ	Negative Quantifier
ASP	Aspect
MOD	Modality
NOM	Nominative
ACC	Accusative
DAT	Dative
GEN	Genitive
POSS	Possessive
INST	Instrumental
ABL	Ablative
NEG	Negation/Negative
SG	Singular

PL	Plural
1	First person
2	Second person
3	Third person
∅	Zero Marker
AM	Anti-Morphic
AA	Anti-Additive
DE	Downward Entailing/Entailment
ISC	Immediate Scope Constraint
Q	Question Marker
OPT	Optative
COND	Conditional
INF	Infinitive/Infinitival
PERF	Perfective
EP.COP	Epistemic Copula
IMPE	Imperative
NMN	Nominalizer
AOR	Aorist
NI	Negative Implicature/Implicatum
SI	Scalar Implicature
AtF	Attraction to Focus
UQ	Universal Quantifier

CHAPTER 1

INTRODUCTION

There are two main research goals of this thesis: (i) to analyze the descriptive properties of the *negative dependencies* in Turkish, where negative dependents are expressions, in which their well-formedness roughly "depend" on negation in a given structure (Giannakidou and Zeijlstra, 2017; Giannakidou, 2020; Zeijlstra, 2016, 2022); and (ii) to analyze and describe the so-called *intervention effects* on negative dependencies in Turkish, which refers to the "disruption" of the licensing of such dependencies (Linebarger (1980, 1987); Guerzoni (2006); Chierchia (2004, 2013); among others), and excluding Kelepir's (2001) work, said effects seem to have not been studied thoroughly in Turkish literature on negative dependencies.

The notion of negative dependencies mainly correspond to two types of expressions: Negative Polarity Items (NPIs) and Negative Concord Items (NCIs, or sometimes used as n-words or neg-words) (Zeijlstra (2016, 2022); Giannakidou and Zeijlstra (2017); Giannakidou (2020)).[1] A typical example of a negative dependency is illustrated below, where a negative dependent (i.e. *hiçbir öğrenci* and *any student*) results in an ill-formed structure if there is no negation:

(1) a. Hoca hiçbir öğrenci-ye yardım et-me-di.
Teacher no student-DAT help AUX-NEG-PAST
'The teacher did not help any student./The teacher helped no student.'
b. *Hoca hiçbir öğrenci-ye yardım et-ti.
Teacher no student-DAT help AUX-PAST
Unavailable:'The teacher did not help any student./The teacher helped no student.'

(2) a. The teacher did not help any student.
b. *The teacher helped any student.[2]

When we look at (1-a), we see that a negative dependent (ND) and a negation within the same structure returns a well-formed sentence, but when the negation is not present in the structure, the sentence is

[1] There is also another term, called *Negative Sensitive Items*, which seem to cover both NPIs and NCIs in a more neutral manner (Miyagawa et al., 2016; Zeijlstra, 2022; Bayırlı, 2017). However, see (Zeijlstra, 2022, p. 226–227) for a discussion on why such a term might be problematic.

[2] In this study, I will not deal with the free choice readings of *any* or any other negative dependent that may also have a free choice interpretation. See (Chierchia, 2013; Giannakidou, 2001) on free choice readings and free choice items (FCIs).

ungrammatical as in (1-b), indicating that a negative dependent (e.g. *hiçbir öğrenci)* requires negation to be grammatical in a given structure. Similar reasoning can be applied to (2) as well.[3]

In this study, I will mainly explore the distributive properties of the given negative dependents. Additionally, related to the description of the distributive properties of given NDs, I also aim to illustrate the *intervention effects* on such expressions, which can be informally characterized as the "blocking" of the licensing of NDs due to certain types of "interrupting" elements, such as universal quantifiers, conjunctions, attraction to focus structures, some WH elements, *after*-structures and so on (Linebarger, 1980, 1987; Guerzoni, 2006; Chierchia, 2004, 2013; Homer, 2021). Homer (2021) provides the following data to show a set of intervention effects on NDs in English:

(3) a. *When Fred speaks French, John doesn't always understand anything.
b. *When Fred speaks French, not everyone understands anything.
c. *When Fred speaks French, it's not the case that everyone understands anything.
d. *John didn't understand anything because it was easy but because he is smart.
e. *John didn't drink wine and any coffee.

(Homer, 2021, p. 20)

The sentences above illustrate the intervention effects. In all the sentences above, there is a suitable licensor (i.e. negation) for NDs, but the sentences are ill-formed regardless. The occurence of some elements like universal quantifiers, conjunctions and *because*-clauses in between the licensor (e.g. negation) and NDs (e.g. anything) appear to *anti-license* (i.e. disturb) the given NDs, thus causing the structure to be ill-formed. For instance, in (3-a), (3-b) and (3-c), the universal quantifier (UQ) is in the middle of the negation and ND (i.e. $*\neg > \forall >$ ND). A similar configuration with an intervening element is also given in (3-d) and (3-e). However, we can also observe that not every element acts as an intervener for NDs:

(4) a. When Fred speaks French, it's not the case that anyone understands anything.
b. John didn't drink wine or any coffee.

(Homer, 2021, p. 20)

In (4-a), as an example, there is an ND in between the negation and the lowest ND, but the sentence is still well-formed (i.e. $\neg >$ ND $>$ ND). It seems, then, certain elements may cause intervention when they are positioned in the middle of the licensor and a given ND, whereas others do not. Essentially, the anti-licensing of NDs due to the presence of certain elements (but not others) is called the problem of intervention effects, and understanding this problem by analyzing the said effects in Turkish is the other research goal of this study.

[3]The idea that negative dependencies are only dependent on negation is not necessarily accurate, which we will discuss afterwards. For instance, in English, the NPI *anyone* can be licensed in yes/no question structures, similar to Turkish *kimse*:

(i) a. Did anyone trust you?
b. Kimse sana güvendi mi?
'Did anyone trust you?'

See Giannakidou (2019) and Zeijlstra (2022) for the set of not obviously negative licensors for the so called negative dependents.

Now that we have discussed the intervention effects in the literature briefly, we can return to the intervention effects on NDs in Turkish. The data set in (5) below illustrates the case in point and these sentences basically make up the problem that we will try to investigate within this study.

(5) **Intervention Effects in Turkish**

a. *Her hoca hiçbir öğrenci-ye güven-me-di.
Every teacher no student-DAT trust-NEG-PAST.3sg
Not available:'Not every teacher helped any students.'[4]

b. *Hiçbir hoca ve iki öğrenci gelmedi.
No teacher and two student came-NEG-PAST.3sg
Not available:'It is not the case that any teachers and two students came.'

c. *HİÇBİR öğrenci-ye güven-me-di-m, BİRÇOK öğrenci-ye güven-di-m.
NO student-DAT trust-NEG-PAST-1sg, MANY student-DAT trust-PAST-1sg
Unavailable:'I didn't trust ANY student, I trusted MANY students.'

d. ??/*Can sadece hiçbir öğrenci-ye güven-me-di.
Can only no student-DAT trust-NEG-PAST.3sg
Unavailable:'Can didn't trust only any student/Can trusted only no student'

e. *Sen hiçbir öğrenci-ye yardım et-tik-ten sonra gel-me-yeceğ-im.
you no student-DAT help AUX-NMN-ABL after come-NEG-FUT-1sg
Unavailable:'I won't come after you help any student.'

In all the sentences above, we have a structure that can be represented as $\neg > X > ND$, where X stands for all the interveners above, and all the structures are ill-formed.[5] When it comes to such intervention effects in Turkish, the only study that seems to have gathered attraction in the literature of negative dependencies in Turkish appears to be Kelepir's (2001) work. Her analysis makes use of the *Immediate Scope Constraint* (ISC) of Linebarger (1980, 1987), which is a proposal that seems to account for a considerable fragment of intervention structures. However, as we will see, ISC has some non-trivial complications, indicating that we either need a revision of it, or another theory to give an

[4] For some native speakers, this sentence is grammatical under the reading 'No teacher helped any students' where the universal quantifier seem to scope over negation to yield the given reading, thus yielding a logical structure roughly equivalent to $\forall > \neg > NCI$. Since the UQ does not intervene in between the negation and the ND in the given reading, it does not seem to cause the intervention effect, which results in a well-formed structure. Similar behavior of universal quantifiers was also discussed in (Linebarger, 1980, pp. 47–48, 99). Nevertheless, the structure is ungrammatical under the reading $\neg > \forall > NCI$, where the universal quantifier intervenes between the NCI and the negation, which appears to cause the intervention effect.

[5] There is also another seemingly relevant data:

(i) ??Hiçbir öğrenci kim-e yardım et-me-di?
No student who-DAT help AUX-NEG-PAST.3sg
Unavailable: 'To whom didn't any student help?'

In this example the structure does not really have an intervener in the traditional sense, since there isn't any element that intervenes between the negation and the ND. If my understanding is not too far off, then in Beck's (2006) analysis, the intervention effect in (i) is caused by the quantifier ND that is argued to have focus properties, and by virtue of having such properties, it cannot intervene between the WH element and its "licensing" complementizer. If my analysis is on the right track, then in (i) there is no intervention effect *on* negative dependencies, rather there is an intervention effect *by* negative dependencies on other elements, and since we are dealing with intervention effects on NDs, such structures are not directly within the scope of this study, but are still worth noting as they are related.

account of the intervention problem of NDs in Turkish. I will follow the latter, and adopt the so-called *Scalar Implicature* (SI) theory of Chierchia (2004, 2006, 2013).

In essence, Chierchia argues that intervention effects are the result of inherent properties of NPIs (or NDs in general). Briefly, Chierchia proposes that the presence of certain elements (e.g. universal quantifier, coordination, etc.) disturb the *Downward Entailment* (DE) of a structure, and since he (basically) argues that NDs require DE environment to be licensed, the presence of elements that disturb the DEness of a structure are bound to cause ill-formedness when there is a ND. To not further prolong the introduction, for now I will not elaborate on the details of Chierchia's system, which can be referred as the *scalar implicature* or *exhaustification* theory, and we will discuss it thoroughly after going over the relevant literature.

Overall, as we have briefly discussed above, the main goal of this study is essentially to better understand the behavior of negative dependencies and to describe the intervention effects on negative dependencies in Turkish, which seem to be a prerequisite for an adequate descriptive account of such negative dependencies as a whole. Then, by adopting Chierchia (2004, 2006, 2013) (mainly utilizing Chierchia (2004)), we will try to explain the problem of intervention effects in Turkish.

The thesis is structured as follows: first we will discuss the general literature on negative dependencies, focusing on both descriptive and explanatory work. Then, I will introduce the literature on negative dependencies in Turkish, while trying to elaborate on the success and shortcomings of the approaches that we will see. Next, the focus will be on intervention effects in general, and the studies that try to describe and account for the given effect will be discussed. In the following chapter, I will try to describe the negative dependencies and the intervention effects in Turkish by illustrating a relatively comprehensive set of relevant data. Afterward, we will adopt the scalar implicature idea of Chierchia (2004) to give an account for the intervention effects we will have seen in Turkish. Lastly, we will discuss the negative dependencies and intervention effects in general.

CHAPTER 2

NEGATIVE DEPENDENCIES

In this section, we will review the literature on negative dependencies, while mainly focusing on the works of (Zeijlstra, 2016, 2022; Giannakidou and Zeijlstra, 2017; Giannakidou, 2020; Hoeksama, 2012). Initially, we will start with the fundamental research questions regarding negative polarity that comes from Ladusaw (1996): (i) the licensor question, (ii) the licensee question, (iii) the licensing question, and (iv) the status question. Then we will continue with negative concord and elaborate on NC structures and NCIs. Afterwards, we will examine two primary analyses of NCIs: (i) NCIs as negative quantifiers (NQs), which aim to reduce NCIs to NQs; and (ii) NCIs as NPIs, which aim to reduce NCIs to NPIs.

When it comes to negative dependencies, it might be constructive to start by observing that some negative dependencies, such as NPIs, are actually misnomers, as was pointed out by Zeijlstra (2022) and Giannakidou (1999). There are variety of configurations where the so-called negative polarity items are licensed by seemingly non-negative elements or environments, and further, there are variety of structures where they are not licensed even when there is negation:

(6) a. Does *anyone* like Bill?
b. Every scientist who has done *any* research knows about these things.
c. At most two students will like *any* teacher here.
d. If you see *anyone*, please let me know.

(7) a. **Anyone* does not like Harry.
b. **Anyone* is not liked by Harry.

The data above indicates that even though negation seems to play a role in the grammaticality of NPIs (or perhaps negative dependencies in general), the given elements may not be necessarily "negative" polarity items in the strict sense. Yet, negative sensitivity or dependencies (even if such a term may be a misnomer to some degree) appear to be typologically quite common, (see Haspelmath (1997) for a general overview of the crosslinguistic nature of negative dependents and indefinites), and therefore, understanding the properties of negative dependencies can be considered to be critical for understanding crosslinguistic, or possibly universal properties of natural language.

Returning to the studies on negative dependencies, there are at least three different types of negative dependencies: negative polarity, positive polarity, and negative concord (Zeijlstra, 2022, p. 28):

(8) a. John didn't read anything.
$(NEG > NPI)$, *$(NPI > NEG)$ (NPI)

b. John didn't read something.
*$(NEG > PPI)$, $(PPI > NEG)$ (PPI)

c. Can hiçbirşey oku-ma-dı.
Can nothing read-NEG-PAST.3sg
'Can didn't read anything.' (NCI)

Positive polarity items (PPIs), according to Szabolcsi (2004), "have the boring property that they cannot scope below negation". For reasons of space and time, I will not discuss positive polarity in my thesis, and in return, I will mostly focus on negative polarity and negative concord. First I will introduce a brief literature on negative polarity, and then I will follow up with negative concord.

Arguably, there have been four fundamental research questions regarding NPIs (perhaps negative dependencies in general) (see Ladusaw (1996)):

(9) a. *The licensor question*, which is about what kind of elements (or domains) "permit" the presence of negative polarity items;
b. *The licensee question* that is about the question of in what ways the polarity items are different from non-polarity items;
c. *The licensing relation question*, which deals with the nature of the interaction between the licensor and the licensee (i.e. whether it is syntactic, semantic, etc.);
d. And *the status question*, which questions the nature of the "unlicensed" NPIs, meaning, the goal is to understand if they are ill-formed in terms of syntax, semantics, pragmatics, or some combination of them.

(Zeijlstra, 2022, p. 17–18)

However, as Zeijlstra puts it, *status question* can essentially be reduced to the *licensee question*, thus leaving three main research questions (for more on the fundamental questions, see Zeijlstra (2013, 2022) and the references therein).

As far as I can see, there is no reason why the same questions cannot be reflected onto negative dependencies in general with some alterations, and so, I argue that reviewing the literature on all these three questions is relevant for negative dependencies in Turkish as well, even if it turns out that Turkish NDs are better classified as NCIs instead of NPIs. Therefore, in the following sections, I will start by introducing a part of the literature on each of the three questions regarding NPIs.[6] Then, I will return to negative concord.

[6] I will follow Zeijlstra's (2022) style where he introduces sub-chapters for each question, because I think such sequencing of the questions makes it relatively straightforward to follow the discussion at hand.

2.1 The Research Questions of Negative Polarity

2.1.1 The Licensor Question

A number of accounts have been proposed for the licensor question (Ladusaw (1979); Linebarger (1980, 1987); Giannakidou (2019); Zwarts (1998); von Fintel (1999), among others).[7] One of the earliest and still prominent theory that tries to capture NPIs under a uniform property is the notion of *Downward Entailment* (DE) by Ladusaw (1979), who propose that all NPIs are licensed in DE environments:

(10) F is downward entailing iff for all x,y such that x $\rightarrow$ y, f(y) $\rightarrow$ f(x).

(Ladusaw, 1979, as cited in Hoeksama, 2012, p. 4)

Downward entailment can be thought as a set to subset truth preserving entailment, where an expression a is downward entailing if by substituting a for its subset a', the truth value of the sentence would be preserved with respect to the given scenario, as in (11):

(11) Harry does not attend a class. $\rightarrow$ Harry does not attend a physics class.

If in a given scenario, Harry does not attend a class in general as in (11), then in that scenario Harry also does not attend a physics class, or any class for that matter, thus we can substitute *a class* with any of its subsets, and the sentence would be still true. Such structures are called *downward entailing*. Although a stereotypical example of DE structures include classical negation, there are non-negative structures that are also DE:

(12) a. Every scientist who has done a research hates the chore. $\rightarrow$ Every scientist who has done a physics research hates the chore.
b. At most two students will like a teacher here. $\rightarrow$ At most two students will like a physics teacher here.

The examples in (12) illustrate structures with no obvious negation that are also DE with respect to certain positions within that structure (i.e. *every* is DE for its restriction but not for its nuclear scope, while *at most N* appears to be DE for its nuclear scope). The DE account of negative polarity tries to reduce the licensing of NPIs to DE contexts:

(13) a. Every scientist who has done *any* research hates the chore.
b. At most two students will like *any* teacher here.
c. Harry does not attend *any* class.

[7] This section is about the literature regarding the negative polarity phenomena, and will not contain much else. So if a reader is not interested in the given literature review, or is already familiar with the topic, they can safely skip to the next section.

Even though the proposal of DE seems to capture a considerable fragment of NPI data in English, it faces some problems. Two main problems are: (i) there are some DE environments that do not license every type of NPI; and (ii) there are seemingly non-DE environments (mainly questions) that license NPIs (Zeijlstra, 2016).

We can illustrate the shortcoming (i) for the pure DE account with the following example, where the Dutch NPI is not fine under *not every*, which creates a DE environment:[8]

(14) Niemand / *niet iedereen heeft *ook maar iets* gegeten (Dutch)
nobody / not everybody has PRT PRT something eaten
'Nobody/not everybody ate anything'

(Zeijlstra, 2016, p. 248)

If we follow the DE theory in a strict sense, then we would predict every NPI to be licensed under every DE environment, contrary to the fact that is shown by the Dutch data above. In order to account for this incorrect prediction, van der Wouden (1994), while building on Zwarts (1995), proposes that DE can be considered as part of a negative hierarchy that seems to be present in natural language. In this negation hierarchy, classic negation like *not* is argued to be Anti-Morphic (AM), while negative quantifiers, such as *nobody* are argued to be Anti-Additive (AA). The definitions of AM and AA, which are based on De Morgan laws, are given below (see Zwarts (1998) for more on the relation between the De Morgan laws and negation in natural language):

(15) a. A function f is Anti-Morphic iff $f(A \vee B) \leftrightarrow (f(A) \wedge f(B))$ and $f(A \wedge B) \leftrightarrow (f(A) \vee f(B))$.
b. A function f is Anti-Additive iff $f(A \vee B) \leftrightarrow (f(A) \wedge f(B))$.

To see how the set theoretic laws above correspond to negative elements, we can take a look at Zwarts's (1998) examples. For instance, the English *it is not the case that* is argued to be AM as in (16):

(16) a. It is not the case that Jack ate or Jill ran. $\leftrightarrow$ It is not the case that Jack ate and it is not the case that Jill ran.
b. It is not the case that Jack ate and Jill ran. $\leftrightarrow$ It is not the case that Jack ate or it is not the case that Jill ran.

(Zwarts, 1998, p. 181)

[8] Zeijlstra (2016) takes the English counterpart *not everybody ate anything* to be grammatical in his examples. However, as noted elsewhere (e.g. Homer (2021)), *not every...* does not seem to (at least always) license NPIs like *any*. Regardless if *not everybody ate anything* is grammatical or not, Zeijlstra's analysis still illustrates that there are seemingly DE environments in which an NPI is not licensed, and if English NPIs behave similarly to Dutch NPIs under *not every...*, meaning that if English NPIs also yield ill-formed structures under *not every...* structures, this would fit with the observation that there are some seemingly DE environments that do not license NPIs.
On the other hand, *not every...* structures may not constitute DE environments if we follow the scalar implicature ideas of Chierchia (2004, 2013), thus the given sentence may not be a counterexample to the DE licensing proposal. We will elaborate on the scalar implicatures and their interaction with DEness when we get to Chierchia's work.

In (16), all the De Morgan laws are in effect. A world, such that, it is not the case that Jack ate or Jill ran, is also a world, in which it is not the case that Jack ate and it is not the case that Jill ran, and vice versa. Naturally, similar reasoning holds for (16-b). On the other hand, *nobody* is not AM, rather it is AA:

(17) a. No man escaped or got killed. $\rightarrow$ No man escaped and no man got killed.
b. No man escaped and no man got killed. $\rightarrow$ No man escaped or got killed.
c. No man escaped and got killed. $\not\rightarrow$ No man escaped or no man got killed.
d. No man escaped or no man got killed. $\rightarrow$ No man escaped and got killed.

(Zwarts, 1998, p. 182)

In the example set above the '$\not\rightarrow$' stands for *does not entail*, which means that, out of the four laws of De Morgan, only three of them hold for a negative quantifier like *nobody*, thus it is classified as AA instead of AM (I leave the AA verification of (17) to the reader). In simple terms, Anti-Morphic is the most strict negation, while Anti-Additive is a weaker form of negation. Further, downward entailing is also considered to be part of this negation hierarchy (e.g. *not every*) and it is taken to be even weaker than AA. Thus, we have a three level negation hierarchy and in this hierarchy every Anti-Morphic negation is also Anti-Additive, and every Anti-Additive is also Downward entailing, or to put it differently, AM is a subset of AA, and AA is a subset of DE (Zwarts, 1998; Giannakidou and Zeijlstra, 2017). With the triple level negation hierarchy at hand, some NPIs can be classified with respect to what level of negation they require to be licensed, for instance, *any* seems to be fine in roughly all DE contexts, but not the Dutch *ook maar*, which apparently requires AA or a stronger negation. Some NPIs, such as the Dutch idiomatic expression *voor de poes*, is argued to be licensed only under AM contexts (Zeijlstra, 2016, p. 248). The elements that are usually licensed by every DE context are called the *weak* NPIs, whereas the NPIs that are licensed in only AA or stronger negative contexts are called *strong* NPIs, and the set of NPIs that are licensed under only AM contexts are called *superstrong* NPIs.

Although the "elegant" nature of the classification above may appear intriguing, Zeijlstra (2022, p. 20) notes that Hoeksema (1999) provides data related to *hoeven*, which is a Dutch NPI that cannot occur in the restriction of universal quantifiers, but it can occur in other pure DE contexts:

(18) a. *Iedereen die hoeft te vertrekken, moet nu opstaan.
everybody who needs to leave must now get.up
'Everybody who needs to leave, must get up now' Dutch
b. Weinig mensen hoeven te vertrekken.
Few people need to leave
'Few people need to leave' Dutch

We have seen above that the restriction of universal quantifiers do constitute a DE context (e.g. (13)), which can license *any* in English (e.g. *every student who enjoyed any class will attend the school*), similar to *few*, which is also argued to constitute a DE context. This means that, if weak NPIs are licensed under DE contexts, we expect them the be licensed under every DE context, but as is illustrated in (18), *hoeven* is fine in the DE nuclear scope of *weining*, while it is ungrammatical in the DE restriction of *Iedereen*. Such an asymmetry is not predicted by the ternary categorization of NPIs (i.e. weak/strong/superstrong), due to the fact that a *weak* NPI is predicted to be licensed under all DE

contexts, which does not empirically hold if we consider (18) (see the relevant references for more examples). In short, we overgenerate some DE contexts that do not license some weak NPIs, thus the *weak*, *strong*, *superstrong* distinction that is based on the strength of the negation of the NPI licensors requires a revision in order to be a sufficient characterization of NPIs.

For (ii), which is the second shortcoming of a DE account of negative polarity, the complication is about the fact that there are non-DE contexts that license some NPIs, and perhaps the most straightforward illustration would be the question and *only* structures, as in these structures we see that DE may not even be a necessary condition for NPI licensing:

(19) a. Did you see anyone?
b. Only Harry helped anyone.

In (19), neither sentence is downward entailing (the question structure is possibly not entailing at all, though cf. Nicolae (2015)), however NPIs are well-formed. So in essence, we can observe that the DE approach has an overgeneralization problem, in that there are some structures that are not (at least obviously) DE, which can still license NPIs. There have been some proposals that can arguably capture some aspects of the overgeneralization problem of NPIs, such as the *non-veridicality* proposal by Giannakidou (1999) or the *strawson downward entailment* idea by von Fintel (1999). Let us first start with the former.

To capture the data in such structures that are not straightforwardly DE as in (19), Giannakidou (1999) suggests adding a new weaker layer to the negation hierarchy of Zwarts, called *Non-veridicality* following Zwarts (1995):

(20) Veridicality, non-veridicality, antiveridicality of functions
a. A function f is veridical iff f(p) entails p.
b. If f(p) does not entail p, f is non-veridical.
c. If f(p) entails not p, f is antiveridical.

(Giannakidou and Zeijlstra, 2017, p. 4)

Following the definitions above, if a function (e.g. operator) that applies to an expression (e.g. sentence) returns the input truth value without changing its value, then it is a veridical function (e.g. the adverb *Yesterday*). If a function does not necessarily entail the input truth value, while not exactly entailing its opposite, then we have a non-veridical function (e.g. yes/no question operators). Finally, if an operator entails the opposite of its input value, then we have an anti-veridical operator (e.g. negation). The sentences below illustrate the so-called veridicality functions of natural language expressions:

(21) a. Yesterday, Harry came here. $\rightarrow$ Harry came here.
b. Did Harry come here? $\not\rightarrow$ Harry came here.
c. Harry did not come here. $\rightarrow \neg$(Harry came here).

In the example (21-a), we see that the antecedent entails the truth of the consequent, because in a world Harry arrived yesterday, entails that Harry must have arrived in some point in the past, meaning the

adverb *yesterday* can be considered as a veridical operator. For (21-b), the question operator neither entails the truth, nor the falsity of its complement, and accordingly is taken to be a non-veridicial operator. Finally, we see a negation structure in (21-c), and here, the antecedent entails the negation of its consequent, and is considered to be an anti-veridical operator.

The goal of the proposal of non-veridical level of negation is to capture some NPIs, such as the Greek *tipota* and the English *any*, which apparently can be licensed under a variety of non-DE contexts that are one way or the other argued to be non-veridical. Such negative dependents that are licensed under "pure" non-veridical contexts are called *superweak* NPIs (Hoeksama, 2012; Zeijlstra, 2022). Hence, taking non-veridicality to be a negation level as well, we have a four level negation hierarchy: every non-veridical context is Downward Entailing (see Zwarts (1995)), every Downward Entailing context is Anti-Additive, and every Anti-Additive context is Anti-Morphic. The Venn diagram in Figure 1 illustrates the so-called negation hierarchy.

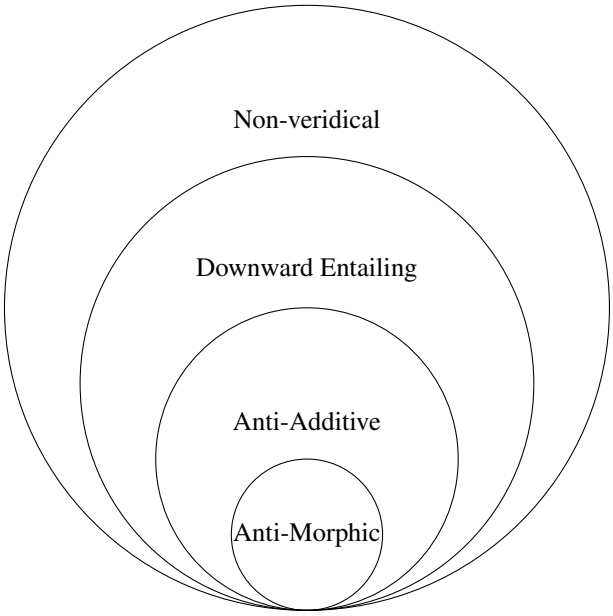

Figure 1: The Negative Hierarchy

(Zeijlstra, 2022; Giannakidou and Zeijlstra, 2017; Hoeksama, 2012)

One advantage of a hierarchy of negation based classification of negative dependents is that it gives us a straightforward way of mapping certain types of negative dependents to certain levels of negation (i.e. *superweak* NPIs are licensed by non-veridicality, *weak* NPIs are licensed by DE contexts, and so on). Hoeksama (2012, p. 5) illustrates the negation level and their correspondent NPI type in Table 1, which shows what kind of NPIs are licensed under what kinds of "negative" contexts.

Although the negation hierarchy and NPI correspondences may appear compelling, we have already noted that there were some NPIs (e.g. the Dutch *hoeven*) that do not necessarily fit into one category of NPIs. Another difficulty for the given four level distinction is the existence of some seemingly *superweak* NPIs (e.g. *any*) not being licensed under some non-veridical contexts. For instance, Zeijlstra (2022) notes that adverbials like *perhaps* can create a non-veridical domain, because they do not

Table 1: Implicational hierarchy based on the Zwarts hierarchy

	Anti-Morphic	**Anti-Additive**	**Downward Entailing**	**Non-veridical**
Superweak	+	+	+	+
Weak	+	+	+	−
Strong	+	+	−	−
Superstrong	+	−	−	−

(Hoeksama, 2012, p. 5)

necessarily entail the truth value of the sentence in which they occur, however, they do not license the NPI *any*:

(22) *Perhaps Harry loved anyone.

Although non-veridicality may not capture the distribution of NPIs such as *any*, like Zeijlstra states, there may be purely *superweak* NPIs that are licensed by all non-veridical domains and this is what Lin (2017) argues for the Chinese *shenme* ('any/a/some').

Another alternative proposal for the shortcoming of some NPIs being licensed under non-DE contexts comes from von Fintel (1999), who argues for replacing the traditional definition of DE with the notion of *Strawson Downward Entailing*:

(23) F is *Strawson Downward Entailing* iff for all x, y such that x $\rightarrow$ y, and f(x) and f(y) are defined, f(y) $\rightarrow$ f(x).

(Hoeksama, 2012, p. 7)

To demonstrate the reasoning of the *Strawson* DE, Hoeksama gives the following example:

(24) a. Only Fred eats meat.
b. Fred eats steak.
c. Therefore, only Fred eats steak.

For *only Fred eats meat* to entail *only Fred eats steak*, we have to assume the *Fred eats steak* to be also true. So, a world which *only Fred eats meat* and *Fred eats steak* is true, is a world where *only Fred eats steak* is also true. Essentially, *only Fred eats meat* strawson-entails *only Fred eats steak*. Nevertheless, as discussed in (Hoeksama, 2012, p. 7), the overgeneralization problem is not necessarily accounted for by the strawson entailment, since this proposal does not explicitly account for the fact that not every NPI is well-formed in strawson entailing environments:

(25) a. Only John noticed anything.
b. *Only John has seen him in weeks.
c. I am sorry I ever met you.

d. *I am sorry I recognized you until it was too late.

Looking at the sentences above, it appears that the "strength" of the NPIs need to be incorporated into the idea of the strawson entailment to be sufficient in capturing NPI licensing (for more on *Strawson Downward Entailment*, see Homer (2019) and Giannakidou (2002)).

To summarize, we have discussed the *licensor* question related to NPIs and mostly focused on the DE theory of NPI licensing due its prevalence in the related literature. Then we have noted two shortcomings for the DE account, namely (i) there are some DE environments that do not license every type of NPI; and (ii) there are seemingly non-DE environments (mainly questions) that license NPIs. We have seen that there have been attempts to refine the DE theory in order to account for the given problems. Even though such refinements seem to face their own complications, the notion of DE seems to be still relevant to the notion of NPIs (or possibly even negative dependencies in general), however looking at the discussion above, we may still need to come up with alterations to the DE theory in order to make the correct empirical predictions.

2.1.2 The Licensee Question

The licensee question is about the nature of NPIs, or more specifically, why they require a negation-related licenser to begin with. For instance, Giannakidou and Zeijlstra (2017) mention that NPI is a descriptive term that does not exactly correspond to a specific syntactic or semantic category. An NPI can be nominal (e.g. *anybody*), adverbial (e.g. *ever*, Turkish *hiç*), modal verb (e.g. Dutch *hoeven* and German *brauchen* meaning 'need'), and so on.

To capture what characterizes the NPIs (or possibly negative dependents in general), there are two main approaches:

(26) (i) NPIs are reduced to some semantic/pragmatic condition that require them to be licensed by some form of negation, possibly corresponding to the negation hierarchy in Figure 1;
(ii) NPIs have some kind of syntactic criteria (perhaps a syntactic feature) that imposes them to be in a certain syntactic configuration with a negative-like element or environment

(Zeijlstra, 2016, 2022)

Now, we will start analyzing some proposals that aim to account for the licensee question of NPIs, starting with the semantic/pragmatic paradigm, then moving onto the syntactic camp.

For the semantic/pragmatic approach to NPIs, one account comes from Kadmon and Landman (1993), in which the NPIs are proposed to *widen + strengthen* the structure they occur in. For example, in the following sentences, we see that the existence of the NPI indefinite appears to widen the domain of reference, unlike typical indefinites:

(27) a. I don't have potatoes.
b. I don't have any potatoes.

(Zeijlstra, 2022, p. 23)

In the example (27-a), the implication is that the individual who utters the sentence does not have potatoes in a given contextual scenario, but in (27-b), the speaker does not seem to have potatoes anywhere at all, and this is why NPI indefinites are argued to be domain wideners. Another idea of the *widen + strengthen* account is that the sentences that contain NPIs are thought to be "stronger" than sentences that contain their default indefinite correspondence (e.g. *any* vs. *a*). We see this strength dynamic in (27): in a scenario that is true with respect to the statement in (27-b), entails that the statement (27-a) is also true in the same scenario, which is taken to indicate that NPI indefinites like *any* make "stronger" claims than their default indefinite counterparts.

One shortcoming of the *widen + strengthen* account of Kadmon and Landman (1993) is related to the arbitrariness of the reason for strengthening. In the given account, the reason why NPIs impose constraints on their domain for strengthening is not clear, as these constraints are not lexically integrated into NPIs. Hence, it is not obvious why the structures that contain NPIs must be "stronger" than the corresponding structures that contain a non-NPI indefinite (see Zeijlstra, 2022, p. 24).[9]

A proposal that is similar to Kadmon and Landman (1993) comes from Chierchia (2013), which also gives a reason why NPIs must be "stronger" than their default indefinite counterparts. In the manner that was summarized in Szabolcsi (2018), the essence of Chierchia's theory is the idea that NPIs are different from other expressions in that NPIs introduce "obligatorily active grammaticized" alternatives to their given structure. These active grammaticized alternatives are incorporated into the interpretation of the sentence by operators that are sensitive to such alternatives, and one operator that is proposed to fit into the description is the covert correspondent of *only* (i.e. the exhaustifier operator O). The O_{DA} is an operator that is specified for subdomain alternatives and Szabolcsi gives the following data to illustrate how it works:

(28) # There are any cookies left.

a. Assertion: $\exists$x $\in$ D [cookies(x) $\wedge$ left(x)]
b. Alternatives: {$\exists$x $\in$ D$'$ [cookies(x) $\wedge$ left (x)] : D$'$ $\subseteq$ D}
c. Exhaustified: O_{DA} {$\exists$x $\in$ D$'$ [cookies(x) $\wedge$ left (x)] : D$'$ $\subseteq$ D} (contradicts assertion)

(29) There aren't any cookies left.

a. Assertion: $\neg\exists$x $\in$ D [cookies(x) $\wedge$ left(x)]
b. Alternatives: {$\neg\exists$x $\in$ D$'$ [cookies(x) $\wedge$ left (x)] : D$'$ $\subseteq$ D}
c. Exhaustified: O_{DA} {$\neg\exists$x $\in$ D$'$ [cookies(x) $\wedge$ left (x)] : D$'$ $\subseteq$ D} (no contradiction)

(Szabolcsi, 2018, pp. 4–5)

In the examples above, O_{DA} negates the alternatives that are not entailed by the assertion, meaning that in a monotone increasing (i.e. upward entailing) context such as (28), we get a logical contradiction. This is because the assertion that "there are any cookies left" does not entail the alternative subdomain "there are any cookies left on the table" or any other subdomain for that matter, which means all the subdomains will be negated by O_{DA}. Naturally, as all the subdomain alternatives of "there are any cookies left" will be negated, there will remain no domain in which "there are any cookies left" is true.

[9] There is also another seeming shortcoming of the *widen + strengthen* approach. Although the *widen + strengthen* approach seems to fit well for indefinite-type NPIs, as noted by Giannakidou, it is not exactly evident how the given approach can be reflected to non-indefinite NPIs, such as *either* (Zeijlstra, 2016, p. 251). Thus indicating that we need to refine the *widen + strengthen* account in order to capture NPIs in general.

Basically, if all the subdomains of "there are any cookies left" is negated by O_{DA}, then there are no cookies left anywhere in any subdomain, which means the assertion that "there are any cookies left" cannot be true (how can there be cookies left, if there are none left anywhere?), hence the logical error. But when it comes to downward entailing contexts such as (29), there are no contradictions, because "there aren't any cookies left" entails that "there are no cookies left on the table" and so on. So, all the subdomain alternatives are entailed by the assertion and O_{DA} does not negate any of these alternatives, which means there is no logical contradiction. In essence, the given reasoning explains why NPIs are licensed in downward entailing contexts, while also explaining why NPIs always strengthen their environment: NPIs themselves introduce the given domain and scalar alternatives, which are integrated into the interpretation of the sentence by a silent operator (e.g. O_{DA}), and in DE contexts, all the subdomains are also integrated into the interpretation (e.g. *I didn't read any books* entails *I didn't read any books about Physics* and the latter is incorporated into the interpretation of the sentence.), thus yielding a "stronger" reading compared to a default indefinite counterpart, which does not integrate such alternative interpretations into the meaning.[10] As we will utilize Chierchia's system for analyzing *intervention effects* in Turkish, I will leave the further details of the theory to a later chapter where we will get into it more thoroughly. So now that we have discussed some proposals within the semantic/pragmatic camp, we can move onto the syntactic approaches to the licensee question of NPIs.

For the licensee question, the syntactic paradigm, which assumes that NPIs have some kind of syntactic criteria that require them to be licensed by a negative-like element, can be traced back to at least Klima (1964) (Zeijlstra, 2016, 2022). More recently, Postal (2004) (also see Szabolcsi (2004) and Collins and Postal (2014)) proposed the following structure for *any*:

(30) *any*: [$_D$ NEG [SOME]]

(Zeijlstra, 2022, p. 25)

The idea for (30) is that in structures that are negative, the negation in *any* raises out and then becomes an overt negation in the given sentence. However, for sentences that are not classically negative, the negation in *any* may integrate into other elements.

Another approach that takes NPI-hood to be a syntactic requirement, comes from feature-based analyses of NPIs, such as the work of Den Dikken (2006), Neeleman and Van de Koot (2002) and Herburger and Mauck (2007) (Zeijlstra, 2022, pp. 25–26). In the feature-based analyses of NPIs, they are assumed to be equipped with a feature that needs to be checked or licensed by a negative element in a given structure. In minimalist terms, an NPI feature may be an uninterpretable feature that needs to be licensed by an interpretable counterpart.

In essence, the licensee question regarding NPIs have two main camps: (i) the semantic/pragmatic camp, and (ii) the syntactic camp. In the semantic/pragmatic camp, the NPIs are considered to be expressions that require some type of negation (e.g. downward entailment, anti-additivity, etc.) in

[10] Contradictions that we are dealing with are argued to be different than traditional contradictions, where the NPI contradiction yields an ill-formed structure (e.g. (28)), but classical contradictions do not:

(i) a. Is John smart?
b. Well, he is and he isn't.

The difference between the nature of contradictions is also discussed in Chierchia (2021).

order to be well-formed, whereas in the syntactic camp, the licensing of NPIs is taken to be a syntactic relation (e.g. c-command, Agree, etc.) with a negative-like element.

2.1.3 The Licensing Question

The last fundamental question regarding NPIs asks the nature of the dependency between the NPI and its licensor operator or domain. For instance, in the DE approach to NPIs, the licensing is taken to be a scope relation at the syntax-semantics interface (LF), where a DE element needs to scope over the NPI at LF for NPI to be licensed. Further, Ladusaw argues that the scope constraint on NPIs may be a necessary condition, rather than a sufficient one, since in English, the licensor needs to not only scope over the NPI at the LF, but also needs to be syntactically higher than the NPI (at least in some structures):

(31) *Anyone didn't sleep here.

In English, the negation *not* is assumed to be able to take scope over the subject at LF, but the subject NPI in (31) cannot be licensed. This is an indication that in addition to the LF requirement, there may be a syntactic requirement as well for NPI licensing, suggesting that the LF licensing constraint may be a necessary condition instead of a sufficient one.[11]

For the LF licensing approach, Linebarger (1980, 1987) points out the *intervention effects* on NPIs, which indicate that the LF licensing hypothesis must be more constrained.[12] If we assume that the LF hypothesis is that NPIs must be under the scope of negation at LF, then the sentences in (3) are not predicted to be ungrammatical. I illustrate some of them here for convenience:

(32) a. *When Fred speaks French, John doesn't always understand anything.
b. *John didn't understand anything because it was easy but because he is smart.
c. *John didn't drink wine and any coffee.

(Homer, 2021, p. 20)

In (32), the NPI is under the scope of negation at LF in every sentence, but the sentences are ungrammatical. Such data, Linebarger argues, indicates that NPIs must not only be scoped by DE elements at LF, rather there should be no logical elements in between the NPI and its given licensor. As we have briefly mentioned in the introduction, she calls this constraint the *Immediate Scope Constraint* (ISC), and the given constraint explains the intervention data in (32): in all the examples, there is a so-called logical element (e.g. UQ) in the middle of the NPI and its licensor, which results in a crash.

While discussing the licensing question, we have noted that one shortcoming for the LF licensing approaches based on DE is the fact that NPIs are sometimes fine under non-DE environments:

[11] There is another way to account for the shortcoming in (31). If we assume that negation cannot scope over subject NPIs at LF for a motivated reason (for instance, see Linebarger (1980, p. 79–81)), then (31) and similar data will not be a problem for the LF licensing hypothesis.

[12] I will keep the analysis of Linebarger brief here, since we will evaluate it in detail when we get to intervention effects.

(33) a. Did you help anyone?
b. Exactly three students did any homework.
c. Only Harry read anything.

In order to account for data that do not include an obvious negation (or a DE/AA/AM operator/domain), Linebarger proposes that a negative implicature licenses such NPIs, where the implicature has a negation that scopes over the NPI without interveners. Yet, the main shortcoming of the implicature based account of NPI licensing in Linebarger's (1980; 1987) account is the overgeneralization problem. Like Zeijlstra (2022) notes, as long as the formal characterization of the computation of such negative implicatures are not precisely defined, the negative implicature account of NPI licensing is prone to overgeneration, because essentially every sentence can be thought to have a negative implicature, but not every sentence licenses NPIs.

For the purely syntactic accounts of NPI licensing (e.g. the feature based accounts), the licensing occurs due to some syntactic configuration or operation, such as *c-command* or *Agree*. In the syntactic camp, as long as the proposed syntactic mechanism is available for a given NPI structure, NPIs are predicted to be grammatical. As an illustration of a feature based minimalist-like account (Pesetsky and Torrego, 2007), in the following sentence, the negation can be thought to have an interpretable negation feature that licenses the uninterpretable negation feature on the NPI via Agree operation:

(34) Harry did not$_{iNeg}$ like anything$_{uNeg}$ here.

The *iNeg* on *not* can be thought to license the *uNeg* on *anyhing* via Agree at the syntactic interface, thus yielding a well-formed sentence. Clearly, such an account faces its own challenges. For instance, what kind of common feature allows for NPIs to be licensed is not exactly clear. Stating that NPIs carry an uninterpretable negation is certainly problematic, because there are variety of non-negative structures that license NPIs. So we may propose that there is a feature that captures the DE nature of licensing, such as *uDE*, in spirit of Ladusaw (1979). Yet, at this point it should be clear that DE itself faces variety of challenges since we noted plenty of well-formed ND configurations that are not precisely DE, therefore even utilizing a feature like *uDE* is bound to cause complications without refinements. Similar reasoning applies to a possible feature theory that utilizes the notion of non-veridicality instead of negation or DE.

To recap, in this section we saw some proposals for the "dependency" between the NPIs and whatever licenses them. The DE account of NPI licensing proposes that NPI licensing takes place at LF, and this LF licensing is taken to be a necessary condition instead of a sufficient one. For the ISC account by Linebarger, we saw that some negative polarity configurations are licensed by implicatures, however we noted that due to the lack of a precise formalization, NPI licensing by negative implicature faces overgeneralization problems (Zeijlstra, 2022; Jackson, 1994). Lastly, the syntactic dependency possibilities were discussed, in which I focused more on the feature-based dependencies, and we have seen that, excluding other shortcomings, finding a uniform feature that may allow us to capture all types of NPIs is not a trivial task. Having discussed the notion of negative polarity, we can now move on to the notion of *negative concord*, which appears to be another primary type of negative dependency.

2.2 Negative Concord

This section is about the descriptive properties and some fundamental questions regarding the so-called negative concord (NC), so that we can better understand the notion and see if Turkish negative dependencies better fit NC or another type of negative dependency.[13] Negative Concord (NC) refers to the single negative interpretation of a structure that includes more than one "seemingly" negative item (Giannakidou, 2020; Giannakidou and Zeijlstra, 2017). Negative Concord Items (aka n-words or neg words) refer to elements (mainly negative-like indefinites) that can be interpreted as negative in "isolation", while also appearing in NC structures (Giannakidou and Zeijlstra, 2017; Giannakidou, 2020; Zeijlstra, 2022). One definition of NCIs is given by Giannakidou:

(35) A *Negative Concord Item (NCI)* (aka 'n-word') is an element that:

a. can be used in structures containing sentential negation or another NCI yielding a reading equivalent to one logical negation;

b. can be used as a negative fragment answer.

(Giannakidou, 2020, p. 459)

One advantage of the NCI definition above is that it clarifies the descriptive distinction between typical negative quantifiers (e.g. *nobody*), NPIs (e.g. *anyone*), and NCIs (e.g. *hiçbir N*). The negative quantifier *nobody* is not an NCI under the definition in (35), since it can generate double negation (DN) interpretation in "Standard" English. Similarly, an NPI like *any* is also not an NCI due to the fact that it cannot be used as a fragment answer. On the other hand, a negative dependent like *hiçbir N* fits both criteria in (35), as it never causes DN, and it can also be used as a negative fragment answer:

(36) a. Harry didn't like nobody. Standard English: Double negation

b. Q: Whom did you like here?
A: Nobody

(37) a. Harry didn't like anybody.

b. Q: Whom did you like here?
A:*Anybody.

(38) a. Can hiçkimse-yi sev-me-di.
Can nobody-ACC like-NEG-PAST.3sg
'Can didn't like anyone.'

b. Q: Kim-i sev-di-n burda?
Q: Who-ACC like-PAST-2sg here
'Whom did you like here?'
A: Hiçkimse-yi.[14]
A: Noone-ACC
'Nobody'

[13] Similar to the negative polarity section, this section can be safely skipped if the reader is not interested in the given literature review, or if they are acquainted with it.

[14] A jury member notes that the underlying null structure of structures as in (38-b) may require elaboration, since it is unclear at this point if they are ellipsis, sentence fragment or some other kind of null configuration.

Let's briefly focus on each of these sentences to illustrate the definition in (35). We see that in (36), the negative quantifier does not satisfy the part (35-a), as the structure does not have NC reading with more than one negative element (at least for the so-called Standard English). Therefore, the second part of the definition in (35) is not even relevant for the NCI-hood of *nobody*. For (37), the first part of the definition is met, since there are two seemingly negative elements but the reading is NC, meaning there is a single negation reading.[15] But, the example (37-b) shows that the second part of (35-b) is not met by *any*, which means *any* is not a NCI. For the Turkish examples in (38), both criteria in (35) is met: in (38-a), there are two negative-like elements, but the result is a NC structure, and in (38-b), the negative dependent is used as a negative fragment answer. In essence, the definition in (35) allow us to distinguish the negative quantifiers, NPIs and NCIs in a descriptive manner. Negative quantifiers (NQs) appear to be inherently negative, as they can induce negation to the structures that include them, which may result in DN if there are other negative elements. Negative polarity items on the other hand, do not seem to be inherently negative, because they cannot generate a negative reading on their own, and further, they require licensing unlike NQs. NCIs, however, behave similar to both. They can induce semantic negation in isolation, such as fragment answers, while also being present in NC structures, and this similarity might indicate that we may be able reduce NCIs to NPIs or NQs.

Zeijlstra (2016, 2022) states that NC structures like (38) are relevant to the principle of compositionality, since there are two elements that show inherent negation in certain configurations, but when combined together, they yield a single negation reading (see Partee (1995) on compositionality). He further illustrates the semantic compositionality point with the following Italian examples:

(39) a. Gianni *non* ha telefonato.
Gianni NEG has called
'Gianni didn't call.'
b. *Nessuno* ha telefonato.
n-body has called
'Nobody called.'
c. *Non* ha telefonato *nessuno*.
NEG has called n-body
'Nobody called.' Italian

(Zeijlstra, 2016, p. 236)

The examples in (39-c) and (39-b) indicate that both *non* and *nessuno* are negative elements, and this implies that their combination is predicted to yield a DN reading in order to not violate the compositionality. Yet, in (39-c) we see that there is a single negation reading, which do not seem to conform

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At first glance, the presence of a structural case (i.e. ACC) indicates that there is an underlying null structure, possibly with a covert negative marker, which may indicate that we may have an ellipsis configuration. However, to precisely identify what kind of underlying structure there is in (38-b), we would first need to elaborate on the nature and the differences of null configurations, and to save space I shall not pursue the exact nature of the underlying structure of fragment answers in this work, since it is does not appear to be crucial for intervention effects. For a brief discussion on fragment answers and their internal structure, see (Zeijlstra, 2022, pp.64-65)

[15] We can increase the amount of equivalent negative dependents in English and still get a single negative reading:

(i) I didn't put anything anywhere.

As we can see, we may increase the amount of *any*-type negative dependents without resulting in a DN reading.

to the compositionality principle. Naturally, such apparent violation of compositionality is arguably a central question in NC studies.

Another research question when it comes to NC is related to the crosslinguistic differences that seem to be present with respect to NC. More specifically, some languages show NC and some do not. Further, NC languages also show different behavior. In some languages, such as Czech, a negative marker (NM) is mandatory for NCIs to be well-formed in a structure, and these types of languages are called *Strict NC languages* (Giannakidou, 2020):

(40) a. Dnes *nikdo* *(*ne*)-vola.
Today n-body NEG-calls
'Today nobody calls.'
b. Dnes *(*ne*)-vola *nikdo.*
Today neg-calls n-body
'Today nobody calls.' Czech
(Zeijlstra, 2016, p. 237)

The data above show that the presence of a NC is mandatory for the Czech NCIs to be licensed. The other type of NC languages are called *non-strict NC languages*, and in non-strict NC languages preverbal NCIs cannot precede NMs in NC structures, however, NCIs that are postverbal require NMs to precede them for licensing:

(41) a. Ieri *nessuno* (**non*) ha telefonato.
Yesterday n-body NEG has called
'Yesterday nobody called.'
b. Ieri *(*non*) ha telefonato *nessuno*.
Yesterday NEG has called n-body
'Yesterday nobody called.' Italian
(Zeijlstra, 2016, p. 236)

In the Italian example above, the critical part is that NC readings are sensitive to the position of NC elements. If *nessuno* precedes the verb, then there cannot be a negation that follows it, whereas if the NCI is postverbal, then it requires the presence of a NM (or perhaps another NCI).

The "landscape" of negative concord and negative dependencies is more complicated then the examples we have seen so far. There are languages, like West Flemish, that show optional NC, in which the negative marker may be "optionally" left out of the sentence without resulting in an ill-formed structure. Similarly, other languages might be ambiguous between NC and DN readings under certain configurations (e.g. French). Having mentioned some crosslinguistic properties of NC, it might be reasonable to note that the crosslinguistic nature of NC is not exactly significant for our purposes, so I will not get into detail. Nevertheless, see Zeijlstra (2016, 2022); Giannakidou and Zeijlstra (2017); Giannakidou (2020) for a comprehensive overview of NC and its crosslinguistic behavior.

Turning back to the other research questions regarding NC, when we were discussing the Italian data provided by Zeijlstra in (39), we mentioned the compositionality puzzle. We saw that NC structures include more than one negative-like element, while resulting in a single negative reading. For this

puzzle, Zeijlstra argues that there have been two major approaches: (i) NQ approach; and (ii) NPI approach. As the names suggest, both approaches essentially try to reduce NCI-hood to NQs or NPIs. In NQ approach, NCIs are taken to be inherently negative, similar to typical NQs like *nobody*, and the reason for the NC reading instead of DN reading stems from some kind of *absorption* mechanism, which essentially gets rid of the excess negation to yield a single negative reading. For NPI approach, NCIs are non-negative, similar to typical NPIs, and in structures that show negative reading without an overt NM are proposed to include a type of covert negation (e.g. (39-b), or perhaps even fragment answers as well). Basically, both the NPI and the NCI approaches try to account for the compositionality problem of NCIs.

Another research question that is related to compositionality problem is about the negative dependent nature of NCIs. Why do NCIs, which can signal negation on their own in certain configurations, depend on the existence of NMs? Giannakidou gives the following examples to illustrate some NC examples that illustrate the NM requirement of some NCIs:

(42) a. Gianni *(*non*) ha visto *niente*.
Gianni NEG have.1SG seen n-thing
'Gianni hasn't seen anything.' Italian

b. *(*No*) he dit *res*.
NEG have.1sg said n-thing
'I didn't say anything.' Catalan

c. *(*Dhen*) ipa *TIPOTA*.
NEG said.1SG n-thing
'I didn't eat anything.' Greek

d. John-wa *nani-mo* tabe-*(nak)-atta.
John-TOP n-thing eat-NEG-past
'John didn't eat anything.' Japanese

(Giannakidou, 2020, pp. 458–459)

The sentences in (42) show that the NCIs in all the languages above is dependent on a NM just as an NPI is dependent on some kind of licensor, meaning NCIs also constitute negative dependencies. Moreover, regardless if an NCI turns out to be inherently negative or not, as long as it needs licensing as in (42), it is technically an NPI due to the "requirement" of a licensor.

Before moving on to the discussion about the NQ and NPI approaches to NCIs, I should point out the terminological and descriptive complications that seem to be present in the literature. As I have briefly mentioned earlier in the previous chapters, both NPI and NCI terms are descriptive in nature, and they are not mutually exclusive, meaning an expression can both be an NCI and an NPI at the same time. Similarly, an element can be a NQ and a NCI as well. After all, NPIs are defined to be elements that require the presence of some form of licensor (e.g. negation), but this definition does not exclude the possibility of a given NPI itself to be negative. It could very well be the case that the NPI in question might be inherently negative. Equivalent reasoning can apply to NCIs. However, this does not mean the previous discussion is redundant. Such descriptive terms enable us to talk about negation and negative dependencies in an arguably clearer manner. After all, if it turns out that NPIs or NCIs are inherently negative elements (quantifiers, indefinites, idiomatic expressions, etc.), then we would still have to explain why they require licensing by a NM (among other licensors), or why some types of NPIs can show up in negative fragments while others don't, and so on. Here I think even the most neutral term

"negative dependent" could be a reason for confusion, as negative quantifiers, such as *nobody* do not necessarily depend on any other negation. So, in the spirit of Miyagawa et al. (2016), I think the term *negative sensitive* is able to capture everything about negative dependencies we have discussed so far, because even negatives and negative quantifiers themselves are negative sensitive since they result in double negation when there is another negative element in a given structure (cf. Zeijlstra (2022, pp. 226–227) for the complications of the term Negative Sensitive Items (NSIs)). But of course, the given discussion is essentially about the terms that are used for capturing dependencies that are intertwined with negation, and does not change anything regarding the central questions regarding the behaviour of negative dependents.

In the following NC subsections, we will detail the approaches that try to account for the compositionality puzzle of NCIs, and I will first introduce the paradigm that assumes NCIs to be NQs, and then we will move on to NCIs as non-negative NPIs approach.

2.2.1 NCIs as Negative Quantifiers

For the NQ approach to NCIs, Giannakidou (2020, p. 475) argues that the earliest negative analyses are found in the *Neg-criterion* approaches of Haegeman and Zanuttini (1991, 1996) and Zanuttini (1991). In essence, such approaches that assume NCIs to be inherently negative make use of some form of "absorption" mechanism that turns multiple negation from NQs and NMs into a single negative reading, thus accounting for the apparent violation of the compositionality. One approach that can be thought as utilizing a form of "absorption" mechanism comes from De Swart and Sag (2002), which is a proposal that follows analogous reasoning to Haegeman and Zanuttini (1991, 1996); Zanuttini (1991) and related work. To briefly characterize, De Swart and Sag's approach takes NC to be comparable to the pair-list readings that are present with multiple-wh questions:

(43) Who bought what?

(Zeijlstra, 2016, p. 237)

The sentences with multiple-wh phrases as in (43) are argued to have a salient pair-list reading. Pair-list reading of the sentence above can be thought as a reading that questions what pairs of <x, y> exist, in which x bought y, therefore a reasonable answer to such a question could be as follows:

(44) John bought apples, and Mary pears.

(Zeijlstra, 2016, p. 238)

Basically, the answer in (44) is related to a question, in which a single wh-operator binds pairs of variables. On the other hand, another possibility of multiple wh-questions is a reading, such that each wh-operator binds a specific variable, and an answer would be related to a question similar to "which of the people bought which of the things". For De Swart and Sag, the pair-list reading is the crucial one, since they propose that the same mechanism applies in NC structures with multiple NQs. Giannakidou gives the following ambiguous French data, which has both DN and NC readings. For DN reading, every NQ is proposed to bind a single variable, while for NC reading, a single NQ binds a pair:

(45) Personne (n')a téléphoné personne.
n-body has called n-body
DN Reading (i): No one is such that they called no one
$\neg\exists x \neg\exists y \text{Call}(x,y)$
'Nobody calls nobody'
NC Reading (ii): No pair of people is such that one called the other
$\neg\exists\ <x, y>\text{Call}(x, y)$
'No one calls anyone'

The representation of DN reading has two negative quantifiers that bind different variables, thus yielding the DN reading, whereas the representation of NC reading has a single negation, resulting in a single negative reading. As the mechanism that yield ambiguous readings with multiple-wh phrases is assumed to apply to NQs, such a mechanism predicts that every sentence with more than two NQs to be ambiguous between an NC and a DN reading, and this prediction is borne out in French.

Yet, as we have illustrated earlier (e.g. (40)), some NC languages (perhaps many of them) do not show the DN/NC reading ambiguity, and in this sense, the proposal of De Swart and Sag makes incorrect predictions. Second, the given proposal does not exactly answer why some NC languages require their NQs to be licensed by another NM or NQ. Further, the given absorption mechanism does not straightforwardly account for the distinction between *strict* and *non-strict* NC as well. Another difficulty for such an absorption approach is that in some NC languages, NCIs can be licensed in non-negative structures:

(46) a. Antec de hacer *nada*, debes lavarle las manos
before of do NEG-thing, must.2sg wash.CL the hands
'Before doing anything, you should wash your hands.'
b. Dudo que vayan a encontar *nada*
Doubt.1SG that will.3PL.SUBJ a find NEG-thing
'I doubt they will find anything.' Spanish
(Zeijlstra, 2022, p. 55)

The difficulty of (46) is that if the NCIs are inherently negative quantifiers, then it is unclear why they do not show negative reading in such structures, where the licensors are not negative (i.e. not AA or AM).[16]

[16] Some Turkish NCI structures, although not perfectly acceptable, are also not conventionally negative. I give them below in a simplified version:

(i) a. ?Hiçbir hoca hiçbir öğrenciye güvendi mi?
'Did any teacher help any student?'
b. ?Sanki hiçbir hoca hiçbir öğrenciye yardım etti şu güne kadar.
'As if any teacher helped any student ever/in the history.'
c. ?Neden hiçbir hoca hiçbir öğrenciye yardım etsin ki?
'Why would any teacher help any student?'

The data above share similarities to the Spanish data in (46) in that NCIs are (somewhat) licensed in non-negative environments, showing a counterexample to the NQ analysis of NCIs, unless we find a way to account for such behavior under the NQ approach.

To conclude, NQ approach to NCIs provides a way of compositionally generating the NC readings, and in this manner they appear to quite successfull. However, the NQ approach faces a variety of shortcomings. For instance, the dependent nature of some NCIs are not exactly evident: why would a NQ need another element to be licensed? Another complications is crosslinguistic in nature, since NQ approach does not straightforwardly fit into the *strict* (i.e. languages that require NM to license an NCI) and *non-strict* (i.e. languages that do not "always" need a NM to license an NCI) NC behavior of different languages. In short, the NCIs as NQs approach aims to account for the compositionality puzzle by reducing NCIs to NQs, yet it has some non-trivial complications that seem to require farther elaboration. In the next section, we will see the NPI approach to NCIs for the compositionality problem.

2.2.2 NCIs as NPIs

So far, we have seen that NCIs can also show dependencies similar to NPIs, and this is basically the main point of the NCIs as NPIs approach, which naturally also allow us to account for the compositionality puzzle. Essentially starting with Ladusaw (1992, 1996), the argument is that NC can be reduced to indefinite binding (Giannakidou and Zeijlstra, 2017; Giannakidou, 2020). In the indefinite binding approach, NCIs are taken to be indefinites that have no quantificational force that has a logical representation as in (47):

(47) [[n-person]] = **person** (x)

(Giannakidou, 2020, p. 468)

We see from above that NCIs in this form does not include inherent negation. In this idea, NCIs are similar to standard indefinites like *a person*, and the main difference from standard indefinites is that, similar to NPIs like 'any', NCIs come with an NPI-like requirement, called *roofing* by Ladusaw. This roofing requirement, which state that NCIs must be boundy by 'existential closure' under negation, can be thought as the origin of the negative reading that is associated with NCIs, since in the *indefinite + roofing* approach NCIs are not semantically negative.

Further, Giannakidou (2020) points out that the indefinite NPI approach to NCIs are compatible with the fact that in some NC languages, NCIs seems to have morpohological component that reflect 'one', and it is also compatible with the fact that there are instances that show pure indefinite-like readings for the given NCIs:

(48) a. Li diràs *res*?
Him/her tell.FUT.2SG n-thing
'Will you tell him/her anything?' Catalan

b. Todos aquel que tenga *nada* que dicer
All who that have n-thing that say
'Everybody who has anything to say ...' Spanish

c. E' venuto *nessuno*?
Is.3SG come n-body
'Has anybody come?' Italian

(Giannakidou, 2020, pp. 468–469)

In the data above, we see that the Italian NCI *nessuno* has *uno* in it, which corresponds to 'one'. Further, we also see in all examples an instance of an NCI being licensed under a non-negative element, which results in a non-negative reading, showing behavior similar to a stereotypical indefinite. From a morphological perspective, a similar behavior is present with the Turkish NCI *hiçbir* as well, where it can be considered as a morphological realization of the combination of the adverbial *hiç* and the indefinite/numeral *bir*. Nevertheless, one complication of the indefinite approach is the fact that some NCIs show negative reading on their own, for instance in fragment answers without any other negative-like element:

(49) Q: Pjon idjes?
'Who did you see?'
A: KANENAN
'Nobody' Greek

(Giannakidou, 2020, p. 470)

For such structures, Giannakidou argues that they are ellipsis structures that contain a negation, and therefore, fragment answers do not constitute a problem for the *indefinite* approach (cf. (Zeijlstra, 2022, pp. 64–65) who points some shortcomings of the ellipsis account of fragment answers).

One challenge for the indefinite approach of NCIs is related to the fact that standard indefinites are argued to have relatively free scope, whereas NCIs are, at least generally, not licensed long-distance (Giannakidou, 2020, p. 471). The reason that long-distance licensing raises questions for the indefinite approach is that if NCIs were truly indefinites, then they would be able to "escape" the locality constraints by covertly moving to a possible higher position in the logical structure (i.e. LF), yet, since NCIs tend to be not licensed long-distance, the locality constraints indicate that NCIs may not be truly existentials. Although some languages are argued to allow long-distance licensing of NCIs, if NCIs were universally indefinites, then we predict them to be free from such locality constraints.

Another take on the indefinite approach is put forward by Zeijlstra (2004, 2008) (see Jeretič (2023) for a possible application of this system to Turkish). In this variant of the indefinite approach, Zeijlstra proposes that NCIs are indefinites that carry an uninterpretable syntactic feature [uNeg] following the minimalist tradition. This uninterpretable feature needs to be syntactically checked/licensed by a higher element that carries [iNeg], which represents the interpretable counterpart of [uNeg]. Zeijlstra's system can be considered as an extenesion of the earlier agreement approaches, but unlike the earlier approaches that used agreement for NCI licensing, in Zeijlstra's system the NCIs are not taken to be inherently negative (see Zeijlstra (2022) for a comprehensive overview of his NC system).

Further, in the agreement based system developed by Zeijlstra, the origin of [iNeg] might be a null operator similar to *pro* in pro-drop languages, and does not necessarily have to be an overt negation marker. Giannakidou and Zeijlstra (2017) give the following example to illustrate the relevant null operators:

(50) a. $Op_{NEG[iNeg]}$ nessuno$_{[uNeg]}$ telefona.

b. pro$_{[i3SG]}$ telefona$_{[u3SG]}$

In the given examples, the uninterpretable feature on *nessuno* is taken to be licensed in a roughly equivalent way to the licensing of [u3SG] of the verb *telefona*.

One of the main advantages of the agreement based licensing system of Zeijlstra stems from its utilization of a comparatively well-known system of Agree, which is observed in other parts of grammar, so it is not an ad-hoc mechanism that is inserted in order to just explain NCI licensing. Additionally, the locality constraints on NCI licensing is also straightforwardly explained by using Agree, since the locality of NCI licensing stems from the locality conditions of Agree in general. Thus, the locality complications of the indefinite approach to NCIs is also accounted for: if NCIs are indefinites, then we should not see strict locality conditions on these items due to the fact that indefinites have (nearly) unbounded scope, but if NCIs are indefinites that require syntactic licensing in addition to being an indefinite, then the reason that they are bound by locality stem from not their indefinite status, but rather from the locality constraints on the licensing of [uNeg] in syntax, whatever those constraints turn out to be.

Without getting into too much detail, the syntactic agreement approach to NC also has some challenges. One question is the crosslinguistic differences that are present with respect to NC, since the distinction between strict and non-strict NC (and the subcategories of non-strict) need to be carefully integrated into the syntactic-agreement approach. The other challenge is related to the data in (48) that shows well-formed sentences with NCIs, which are not negative in any clear sense.[17]

One last analysis in the spirit of NCIs as NPIs come from a paradigm that takes NCIs to be universal quantifiers (UQs). To briefly summarize, UQ approach to NCI proposes that NCIs are licensed if they scope over negation in order to yield the NC readings, which is represented below:

(51) Logical representations of general negative statements

a. $\forall x[P(x) \rightarrow \neg\, Q(x)]$

b. $\neg\exists x[P(x) \wedge Q(x)]$

(Giannakidou and Zeijlstra, 2017, p. 23)

For licensing, the NCI, which is argued to be a UQ, must scope over the negation at the logical representation in an equivalent manner to (51-a), and for NCIs that are structurally lower than negation at syntax (e.g. postverbal NCIs), this scope requirement can be met via covert operations if the given language allows for such covert operations (e.g. quantifier raising). Nevertheless, UQ analysis of NCIs run into problems as well, especially crosslinguistically, which I will omit for the sake of space.[18]

In this section, we have analyzed another proposal that can account for the compositionality puzzle of NCIs, which is a proposal that takes NCIs as NPIs. We have seen three approaches from this paradigm: (i) the indefinite approach, which state that NCIs are indefinites similar to *any*, which come with a *roofing* requirement that forces them to be licensed by a negative element; (ii) the syntactic-agreement approach, which can be considered as an extension of the indefinite approach, where NC is taken to

[17] For a discussion regarding the challenges of the syntactic-agreement theory, see Zeijlstra (2022, pp. 73–76).

[18] See Szabolcsi (2018) for a brief overview of the challenges of UQ analysis of Hungarian NCIs, and Jeretič (2023) for arguments in favor of taking Turkish quantifier NCIs to be existentials.

be syntactic agreement between an NCI with [uNeg] and a negative with [iNeg] in syntactic interface; and (iii) the universal quantifier approach that propose NCIs to be UQs that scope over negation at logical form. Although all analyses have their advantages and disadvantages, to my knowledge, NCIs are mainly taken to be inherently non-negative indefinites, whether syntactic agreement is assumed on top of it or not. Further, as we will see later on, analysing *intervention effects* on NCIs are not exactly evident if we assume NCIs to be UQs, but by all means, there may still be ways to combine intervention effects with the UQ analysis of NCIs, which I shall not pursue in this study.

2.3 Summary

In this chapter, we have briefly reviewed the literature on negative dependencies, focusing mostly on the works of Zeijlstra (2016, 2022); Giannakidou and Zeijlstra (2017); Giannakidou (2020); Hoeksama (2012). First we discussed the main research questions regarding NPIs that goes back to Ladusaw: (i) The licensor question, which is about what kind of elements or domains license a given NPI; (ii) the licensee question, which is about what kind of elements constitute NPIs, and in what manner are they different from non-NPIs; and (iii) the licensing question, which is about the mechanism that allows for an NPI to be well-formed. Then we moved onto the negative concord and discussed NC structures and NCIs. Consequently, we checked two main analyses of NCIs: (i) NCIs as negative quantifiers, which propose that NCIs are inherently negative quantifiers; and (ii) NCIs as NPIs, which propose that NCIs are non-negative indefinites or universals.

In the next section, we will analyze the negative dependencies in Turkish. First, we will discuss some basics of Turkish negative dependents, and we will note that NDs in Turkish behave more closely to NCIs rather than NPIs. Afterwards, we will move on to consider the research questions of negative dependencies from the perspective of Turkish data, in which the *licensor*, *licensee*, and *licensing* questions related to Turkish NDs will be reviewed. Lastly, we will examine if Turkish NDs behave as if they are negative quantifiers, or NPIs.

CHAPTER 3

NEGATIVE DEPENDENCIES IN TURKISH

Negative dependents in Turkish, such as *hiç, hiçkimse, hiçbir şey, hiçbir N, ne...ne, asla, katiyyen*, have been studied as both Negative Polarity Items (NPIs) (Görgülü (2016, 2017); Kelepir (2001); Kayabaşı and Özgen (2018); Özgen (2021); a.o.) and Negative Concord Items (NCIs) (Görgülü (2020); Jeretič (2023); a.o.). However, in purely descriptive terms, looking at the definition in (35), which I give below for convenience, Turkish NDs appear to behave as NCIs:

(52) A *Negative Concord Item (NCI)* (aka 'n-word') is an element that:

a. can be used in structures containing sentential negation or another NCI yielding a reading equivalent to one logical negation;

b. can be used as a negative fragment answer.

(Giannakidou, 2020, p. 459)

Following the definition above, Jeretič (2023) (who also uses the same definition in her study) gives the example below to illustrate why Turkish negative dependent *hiçkimse* should be considered as an NCI, unlike its apparent English NPI counterpart *anyone*:

(53) a. A:Kim-i gör-dü-n?
Who-ACC see-PAST-2sg
'Whom did you see?'
B:Hiçkimse-yi.
Noone-ACC
'No one./*anyone.'

b. A:Whom did you see?
B:*Anyone

The example above indicates that *hiçkimse* might be an NCI instead of an NPI. The Turkish negative dependent can be used as a fragment answer, as we can see from (53-a), but the English negative dependent *anyone* cannot. In short, due to the difference in behavior when it comes to fragment answers, Jeretič takes such Turkish negative dependents as NCIs rather than NPIs and I will follow her reasoning in this work as well.[19]

[19] I should remind that the distinction between NPIs and NCIs seem to be mainly a descriptive difference, and is not necessarily critical to the given study, especially considering that some researchers already consider NCIs to be a type of NPI (e.g. NCIs might be *superstrong* NPIs, etc.). Nevertheless, it seems to me that the literature

Additionally, Jeretič (2023) points out that some negative dependents (NDs), such as *hiçkimse*, have been studied as NPIs in the literature and she argues that the reason that such items have been studied as NPIs instead of NCIs, stems from "the lack of a common definition between NCIs and NPIs", which seems to imply that the lack of a precise distinction between NCIs and NPIs is the reason that elements like *hiçkimse* were considered as NPIs in the literature instead of NCIs. Looking at the terminological "richness" of negative dependencies, I think it is safe to say that it is understandable that many authors referred to negative dependents like *hiçkimse* as NPIs, even if it might be not completely accurate, that is of course, assuming the definition in (52) to be accurate.[20]

Before starting the descriptive discussion of Turkish NCIs, I would like to point out that some data in Turkish seem to be problematic for a pure NCI account that takes NCIs to be elements that always yield a single logical negation, either by "concord" with other seemingly negative elements, or as used in a fragment answer. The data are yes/no questions, *as-if* (i.e. *sanki*) structures and rhetoric questions (see Kesici (2019) for a general overview of such structures). In none of the structures below there is negation in the classical sense:

(54) a. ?*Hiçbir hoca hiçbir öğrenci-ye güven-di mi?
No teacher no studenet-DAT trust-PAST.3sg Q
'Did any teacher help any student?'

b. ?*Sanki hiçbir hoca hiçbir öğrenci-ye yardım et-ti şu güne kadar.
As-if no teacher no student-DAT help AUX-PAST.3sg this day until
'As if any teacher helped any student ever/in the history.'

c. ?*Neden hiçbir hoca hiçbir öğrenci-ye yardım et-sin-ki?
why any teacher any student-DAT help AUX-OPT.3sg-that
'Why would any teacher help any student?'

Putting aside the ?* marks, which represent the disagreements on the well-formedness status of a given structure, and hence the "shaky" judgments, the sentences above are not easily negative concord structures, as there is no obvious negative reading in any of them. However, as mentioned in footnote 3, there are languages which show negative concord behavior, while having non-negative licensors for such elements (see Zeijlstra (2022) for a comprehensive overview of negative dependencies and their general distributive properties). Thus, I think such non-negative possibilities of NCIs do not have to

still makes use of the terms NCI and NPI to distinguish at least some descriptive behavior of negative dependents. For instance, NCIs tend to be more constrained than NPIs like *any*, so, stating that an element is an NCI might indicate that the element in question is predicted to show more restricted distribution (possibly only in negative contexts). Thus I will also use both terms wherever applicable.

[20] To be precise, not every Turkish ND exactly fits the NCI definition in (52), such as the adverbial *hiç*:

(i) a. Q: Will you try pineapple pizza?
A: Never!/*Ever!

b. Q: Ananaslı pizza dene-yecek mi-sin?
Q: Pineapple pizza try-FUT Q-2.sg
A: Asla!/*hiç!
A: Never!/*ever!

The adverbial ND *hiç* basically corresponds to *ever* or *at all* in English depending on the structure and/or context, but apparently, similar to the English *ever*, it cannot be used as a fragment answer. So, even if we could give a plausible explanation why it cannot be used as a fragment answer, this could indicate that *hiç* might not be an NCI by definition, since having the fragment answer possibility is essentially taken to be a prerequisite in (52). But still, to not further complicate the terminology, I will use the term NCI for all Turkish negative dependents.

NPI	Negation	Yes/no question	Conditional	-sIz
Hiç	+	+	-	+
Hiçkimse/Hiçbirşey/Hiçbir N	+	+/-	-	+
Kimse	+	+	+	+
Sakın/Katiyyen/Zinhar/Asla	+	-	-	-

Table 2: NPI Licensing Operators

be a problem for analysing negative dependents, rather it may imply that we may have to find what is the common property of such elements (or domains) that license the negative dependents, which as we have seen in the previous chapter, turns out to be a non-trivial question. Turning back to the sentences in (54), as is pointed out by the ?* marks on the sentences above, the judgments on such structures are not completely stable. To my ear at least, the example in (54-a) is basically perfect, but the other two (54-b) and (54-c) are not exactly clear-cut. However, these structures seem to become (relatively more) acceptable if we use *kimse* or *hiç*:

(55) a. Kimse kimse-ye güven-di mi?
No.one no.one-DAT trust-PAST.3sg Q
'Did anyone trust anyone?'

b. Sanki Can hiç buraya gel-miş.
As-if Can ever here come-EVI.3sg
'As if Can ever came here.'

c. Neden kimse kimse-ye yardım et-sin-ki?
Why no.one no.one-DAT help AUX-OPT.3sg-that
'Why would anyone help anyone?'

The sentences in (55), appear to be more acceptable compared to the data set in (54), even though it is not exactly obvious why. One possibility is that, the elements *kimse* and *hiç* might be somewhat *weaker* negative dependencies that are less constrained than their *stronger* counterparts (i.e. *hiçbir N* etc.) (again, see footnote 3 and the references therein). As I will elaborate on the descriptive status of negative dependencies later on, I will leave the discussion about the distinctions between negative dependencies for now, but I think it is crucial to point out that the judgments do vary when it comes to structures as in (54) and (55) and I will try to focus on structures that are either clearly well- or ill-formed for the sake of clarity. Now, we can start examining the descriptive properties of NCIs in Turkish.

To start our discussion of Turkish NCIs, we can take a look at the work of Görgülü (2017), where he presents the Table 2 to demonstrate the possible licensing operators for certain NCIs (in his terms NPIs) in Turkish.

In Table 2, which does not include the *ne...ne* constructions, we see that all the NCIs in Turkish can be licensed by a sentential negation. For yes/no questions, we see that *hiç* and *kimse* are allowed, while the acceptabilitiy of *hiçkimse, hiçbirşey, hiçbir N* varies between people. The Sakın/Katiyyen/Zinhar/Asla NCIs, which I will call the *neg-adverbs* for simplicity, are not licensed under yes/no questions. In conditionals, only *kimse* is licensed. Finally, with the "without" marker *-sIz*, everything but the neg-adverbs are licensed. Let us see some examples for the table above starting with *hiç*:

(56) *Hiç*

a. Hiç uyu-ya-ma-dı-m.
Any sleep-can-NEG-PAST-1sg
'I couldn't sleep at all.'
(Negation)

b. Hiç uyu-du-n mu?
Any sleep-PAST-2sg Question
'Did you sleep at all?'
(Yes/no question)

c. *Eğer hiç uyu-du-ysan, ders-e gir.
If any sleep-PAST-COND-2sg class-DAT enter.IMPE
'If you slept at all, enter the class'
(Conditional)

d. Hiç uyu-mak-sızın ders-e girdim.
Any sleep-INF-without class-DAT enter-PAST-1sg
'Without sleeping, I entered the class.'
(-sIz)

In the data set for the licensing operators of *hiç*, we see that the Table 2 appears to be descriptively adequate. *Hiç* can be licensed via sentential negation, yes/no question operator and the morpheme *-sIz*, however, it cannot be licensed by conditionals. Now, we can move on to the second set of items in the list (i.e. *hiçkimse/hiçbirşey/hiçbir N*):

(57) *Hiçkimse/hiçbirşey/hiçbir N*

a. Hiçkimse-yi gör-me-di-m
No.one-ACC see-NEG-PAST-1sg
'I did not see anyone/I saw no one'
(Negation)

b. ?Hiçkimse-yi gör-dü-n mü?
No.one-ACC see-PAST-2sg Question
'Did you see anyone?'

c. ??/*Eğer hiçkimse uyu-du-ysa, kaç-alım.
If anyone sleep-PAST-COND run-MOD.1pl
'If anyone is asleep, let's escape/run.'

d. Biz bu ülkeye hiçbirşey-siz gel-di-k.
we this country-DAT nothing-without come-PAST-1pl
'We came to this country without anything.' (Kelepir, 2000)

In (57) we see that the table 2 and the data appears to match. *Hiçkimse/hiçbirşey/hiçbir N* is not licensed by conditionals and licensed by the rest (for my intuition however, I think the question operator perfectly licenses the said NCIs).

The NCI *kimse* seems to be licensed by every listed operator in the Table 2. Although this is accurate in some sense, there are certain contexts and structures where *kimse* is licensed even without any of the listed licensors, implying that *kimse* might have some other (possibly free choice) interpretations (also see Yanılmaz (2009) on the free choice reading of *kimse)*. But first, let us see the data set that captures the given table:

(58) *Kimse*

a. Kimse-yi gör-me-di-m.
noone-ACC see-NEG-PAST-1sg
'I did not see anyone.'
(Negation)

b. Kimse-yi gör-dü-n mü?
noone-ACC see-PAST-2sg Question
'Did you see anyone?'
(Question)

c. Düş-en kimse varsa, beni arasın.
fall-SubjRel noone exist-COND me call-MOD.3sg
'If there is anyone who fell, let them call me.'
(Conditional)

d. Biz bu ülke-ye kimse-siz gel-di-k.
We this country-DAT noone-without come-PAST-3pl
'We came to this country without knowing/having anyone'
(-sIz)

Looking at the examples above, we might conclude that the table captures the licensing of *kimse* accurately, however it apparently undergenerates, because there are other structures in which *kimse* is allowed:

(59) Bazı kimseler bizi görmüş diyorlar.
some anyone-Pl we-ACC see-MOD say-3pl
'They say that some people have seen us.'

We see in (59) that there are certain constructions in which *kimse* is allowed without any of the licensor operators that are seen in Table 2. Such data are discussed by Kelepir (2001) and Görgülü (2020) with the conclusion that the usage of *kimse* in (59) is not an NCI, rather it is a bare indefinite. We can see this usage of *kimse* from the corpus examples given in (Görgülü, 2020, p. 736):

(60) Sadece çok az kimse bu-na uy-muş-tur.
only many few someone this-DAT obey-PERF-EP.COP
'Only a few people have conformed to this.'

Basically, this variant of *kimse* is taken to be an indefinite rather than an NCI (though they use the term NPI). With this approach, Table 2 does not really undergenerate, as *kimse* has a form of polysemy, where one interpretation is an NCI, while the other interpretation has a pure indefinite reading. As the ambiguity of *kimse* is not crucial to the given study, I will not comment further on the polysemy argument for the licensing variation for *kimse*. Nevertheless, due to the said double-reading possibilities associated with *kimse*, I will try to focus on the quantifier NCIs that have *hiç* in it, such as *hiçkimse, hiçbirşey, hiçbir N*, so that we can ignore the complications that may arise by the pure indefinite reading of *kimse*.

Having discussed the "unorthodox" nature of *kimse*, we can return to the last set of elements in Table 2: the neg-adverbs. These NCIs are argued to be licensed by negation only:

(61) *sakın/katiyyen/zinhar/asla*

a. Asla yalan söyle-me!
Never lie-NEG-IMPE say-NEG
'Never lie!'
(Negation)

b. *Asla uyudun mu?
Never sleep-PAST-2sg question
'Did you ever sleep'
(Question)

c. *Eğer asla uyu-du-ysan, gel-me.
if never sleep-PAST-COND come-NEG-IMPE
'If you ever slept, then do not come.'
(Conditional)

d. Asla uyumaksızın derse girdim.
never sleep-INF-sIz class-DAT enter-PAST-1sg.
'I entered the class without ever sleeping.'
(-sIz)

In (61), we see that (61-a) (61-b) and (61-c) are in line with the Table 2. Yet, it turns out that the negative morpheme *-sIz* can also license some of the neg-adverbs as in (61-d). In this sense, the table does not reflect the licensor potential of *-sIz* for the neg-adverbs in Turkish.

To sum up the descriptive discussion around the NCIs and their licensors in Turkish that is based around Table 2, we can point to two main complications: (i) first, *kimse* seems to require more discussion before generalizing if it can be licensed under certain operators, because if we are claiming that *kimse* has an indefinite interpretation, then it might be the case that the licensor possibilities of *kimse* in the Table 2 could be related to the indefinite interpretation, rather than the NCI interpretation. In order to be adequate in our claims, we might have to analyze the semantics of the well-formed sentences that includes *kimse* and see if there really is a polysemy, or if they are the same item that yields different readings for some other reason. If we can analyze *kimse* as truly having polysemy, then we might need to find ways to test if a given *kimse* in a structure is the indefinite or the NCI counterpart, before generalizing its distributional properties. For instance, maybe the conditional licensing of *kimse* in (58-c) will turn out to be the pure indefinite version of *kimse* as in (59) and (60), thus stating that the NCI *kimse* can be licensed by conditional will be a descriptive error based on a classification error. Essentially, we have to be mindful if we are talking about the NCI or the indefinite version of *kimse* before further analyzing it. As of now, this distinction appears to be unclear; (ii) second, in the table we see that neg-adverbs cannot be licensed by the negative morpheme *-sIz*, yet we see that there are structures (e.g. (61-d)), in which the licensing of the negative sensitive adverb by -sIz appears to be possible.

In this section we discussed some descriptive properties of NCIs in Turkish overall to familiarize ourselves with the relevant elements. In the next section, we will review some analyses regarding Turkish NCIs that deal with the fundamental questions regarding such elements, meaning the *licensor*, *licensee*, and *licensing* questions. Further, to the extent of my knowledge, some of the previously discussed accounts of negative dependencies (e.g. the DE approach) have not been adopted comprehensively for Turkish NCIs. Hence, I will also (even if briefly) examine how far some of those accounts can help us in capturing the Turkish NCIs.

3.1 The Fundamental Questions for Turkish NDs

3.1.1 The Licensor Question

For the *licensor* question of NCIs, which is the question that tries to answer what kind of elements/domains allow the presence of NCIs in a given structure, two main possibilities have been noted for Turkish: negation and question structures (Kelepir (2000, 2001); Görgülü (2017, 2020); Kornfilt (2007); Jeretič (2023); Kayabaşı and Özgen (2018); Özgen (2021); Kesici (2019), among others).[21] For instance, Özgen (2021) notes that Turkish NCIs are licensed by negation and question markers. Similarly, Kesici (2019) focuses on the NCIs (he uses the term NPIs) in question structures, where it is illustrated that the sole presence of the question marker in a structure is not enough, the position of the question marker needs to be on the verbal element for NCI to be licensed. Moreover, Kornfilt (2007, p. 324) states Turkish NCIs are licensed by local negation, which is technically true, but of course does not include the question structures. Although it seems that the main focus has been on negative and interrogative contexts, there is also the "without" marker *-sIz* that can license Turkish NCIs (Kelepir (2001); Görgülü (2017)). So to summarize all the observations and discussions, we can make the following generalization for the licensor question regarding Turkish NCIs:

(62) **The Licensor Question Regarding Turkish NCIs** (Initial Version)
Turkish NCIs, such as *kimse*, *hiç*, *hiçbirşey*, can be licensed by:
a. Negation;
b. Question marker on verb;
c. "Without" marker *-sIz*.

The following sentences illustrate the licensors in (62):

(63) a. *Can hiçbir öğrenci-ye yardım et-ti.
Can no student-DAT help AUX-PAST.3sg
b. Can hiçbir öğrenci-ye yardım et-me-di.
Can no student-DAT help AUX-NEG-PAST.3sg
'Can helped no students.'
c. Can hiçkimse-ye yardım et-ti mi?
Can no.one-DAT help AUX-PAST Q
'Did Can help anyone?'
d. *Can hiçkimse-ye mi yardım et-ti?
Can no.one-DAT Q help AUX-PAST.3sg

[21] As we noted earlier, there are actually three more structures/operators that seem to allow NDs in Turkish: *Sanki* (i.e. *as-if*) structures, some rhetoric questions, and conditionals. But, since the judgments appear to get quite shaky for the negative dependencies in *sanki* sentences and rhetoric questions, I will not detail them. Similarly, the free choice reading complication of the conditionals is not strictly relevant for our study as well. So, I will omit these structures from the current study, but of course, the said structures and their interaction with NCIs are possibly a research question on their own.

e. Can hiçbir öğrenci-ye yardım et-mek-siz-in okul-dan
Can no student-DAT help AUX-INF-WITHOUT-INST school-ABL
ayrıl-dı.
left-PAST.3sg
'Can left the school without helping any students.'

So in (63-a), there is no negation, question or "without' marker, which yields an ill-formed structure due to the presence of the NCI. In the next example (63-b), the presence of negation licenses the NCI *hiçbir öğrenci*. When it comes to the question structures in (63-c) and (63-d), we can observe that the presence of question marker is not enough to license an NCI, instead, the question particle needs to be on the verbal element (see Kesici (2019) and the related references for more on Turkish NCIs under question structures). To clarify (63-d), I should note that in Turkish, the question marker has a relatively free distribution in simple sentences:

(64) a. Can Aslı-ya yardım et-ti mi?
Can Aslı-DAT help AUX-past Q
'Did Can help Aslı?'
b. Can Aslı-ya mı yardım et-ti?
Can Aslı-DAT Q help AUX-PAST
'Was it Aslı whom Can helped?'
c. Can mı Aslı-ya yardım et-ti?
Can Q Aslı-DAT help AUX-PAST
'Was it Can who helped Aslı?'

The sentences above illustrate that the question particle in Turkish has a relatively unconstrained distribution. Nevertheless, in (63-d), the question marker *-mI* cannot license the NCI when it does not follow the verbal item, indicating that the presence of the question particle is not sufficient for licensing, it needs to be on the verbal (or predicative) element. Lastly, the "without" marker in (63-e) is also able to license an NCI, even though it is not negation in the traditional sense. So we see that the examples in (63) capture the simple generalization in (62): NCIs in Turkish can be licensed (i) by negation, (ii) by a question particle on verb, and (iii) by the "without" marker *-sIz* (excluding the "odd" sentences with *sanki*, rhetorics and conditionals).

Yet, in addition to the discussion above, it seems to me that, at least on the surface, *-sIz* might be considered as an Anti-Additive (AA) operator:

(65) Kitap veya kalem getir-mek-siz-in okul-a gel-di-m. ↔ Kitap
Book or pen bring-INF-WITHOUT-INST school-DAT come-PAST-1sg ↔ book
getir-mek-siz-in okul-a gel-di-m ve kalem
bring-INF-WITHOUT-INST school-DAT come-PAST-1sg and pen
getir-mek-siz-in okul-a gel-di-m.
bring-INF-WITHOUT-INST school-DAT come-PAST-1sg.
'I came to school without bringing a book or pen.' ↔ 'I came to school without bringing a book and I came to school without bringing a pen.'

In the AA test above we see that the first part of the De Morgan Laws hold for the "without" marker *-sIz* (viz. (15-b)). If a scenario is true with respect to *kitap veya kalem getirmeksizin okula geldim*, then this person neither brought a book nor a pen to the school, and in this given scenario, the following statement *kitap getirmeksizin okula geldim ve kalem getirmeksizin okula geldim* is also true, since this statement also corresponds to this person not bringing any book or pencil to the school.[22]If our test is accurate, and *-sIz* can be considered as an AA operator, then perhaps we can combine *-sIz* and the sentential negation in (62) into a single AA category, and state the following revised version:

(66) **The licensor Question Regarding Turkish NCIs** (Revised Version)
Turkish NCIs, such as *kimse*, *hiç*, *hiçbirşey*, can be licensed by:
a. AA operator;
b. Question operator on the verb.

Since every Anti-Morphic (AM) operator is also an AA operator (see Figure 1), the Turkish negation elements like *-mA*, *değil* and *yok*, which may be analyzed as AM, also fit the generalization in (66). So with (66), we have a more "uniform" generalization.[23]

Now, we can try to even further the unification in (66), by giving a more precise generalization for the licensor question where we may reduce the question and AA domains to some category that unifies them, but, as we will notice, this is not a trivial task. As an example, we have earlier seen the *non-veridicality* account by Giannakidou (1999), where question and AA structures were both considered to be non-veridical contexts, so we may (hastily) conclude that Turkish NCIs are licensed under non-

[22]It is unclear to me if the AM test from (15-a) holds for *-sIz*, or for the traditional negative elements in Turkish like *-mA*, since the Turkish logical connective inferences do not always correspond to the boolean logical counterparts. An illustration:

(i) Kitap al-ma-dı-m veya kalem al-ma-dı-m.
book buy-NEG-PAST-1sg or pencil buy-NEG-PAST-1sg
Salient reading:'Either I didn't buy a book, or a pen'.

With the disjunction above, the dominant reading is equivalent to the *either... or...* interpretation. The boolean counterpart with proper logical *or* reading, namely the interpretation which would be true even if the speaker bought no book or pen, does not really occur for me here unless some specific intonation is used. So, I cannot find a safe way to test if the AM requirements hold for Turkish negative elements, and this might indicate that both tests in (15) may require more elaboration in order to apply to Turkish negatives. Nevertheless, AA test seem to hold and *-sIz* appears to be an AA operator, so for simplicity, I will assume *-sIz* to be an AA operator.

[23]As pointed out by one of the jury members, the *-sIz* marker licensing requires further elaboration. For instance:

(i) Hiçbir deniz dalga-sız *(değil).
No sea wave-WITHOUT *(not)
"No sea is without waves."

The sentence above is ill-formed when *değil* is not present. This may indicate that *-sIz* does not always license NCIs. However, as we can see in (57-d) and (58-d), *-sIz* is able to license when it is directly attached to the NCI. One possibility might be that *-sIz* can take scope over NCIs in (57-d) and (58-d), thus it creates an AA domain for given NCIs, which licenses (57-d) and (58-d). But, in the example above, the without marker may not be able to scope over the NCI *hiçbir deniz*, yielding an ill-formed structure. Clearly, further elaboration on the licensing by *-sIz* and its relation with *-mAksIz* needs to be better understood. However since it is currently unclear to me if this ill-formedness stems from scope properties of *-sIz* or something else, I have no clear way of further analyzing the *-sIz* licensing, thus I leave this investigation to subsequent studies. In any case, it seems that when *-sIz* can scope over the NCI, it can license NCIs.

veridical contexts, however, such a generalization would have an extensive overgeneralization problem (cf. Görgülü (2017), who seems to argue for non-veridical generalization for Turkish NCIs). The reason is somewhat straightforward, there are many non-veridical domains in which Turkish NCIs are not licensed, therefore, unless we find a way to account for those structures, then our generalization does not hold:

(67) a. *Belki, Can hiçbir öğrenci-ye güven-di.
Perhaps Can no student-DAT trust-PAST.3sg
b. *Hiçbir bilim-i sev-en herkes meraklı-dır.
No science-ACC love-NMN everyone curious-COP
c. *En fazla iki öğrenci hiçbir meyve sev-iyor.
At most two student no fruit love-PRES.3sg

All the sentences above contain a NCI that is in a non-veridical domain. For instance, in (67-a), we have the adverb *belki*, which is a non-veridical operator as it does not entail the truth value of its input (i.e. sentence). In other words, when *belki* operates on the rest of the clause, the truth value of the said clause (e.g. *Can bir öğrenciye güvendi*) is not preserved, hence *belki* creates a non-veridical domain, but the NCI *hiçbir* is not licensed. Likewise, the sentences in (67-b) and (67-c) are also non-veridical domains, or more precisely, they contain DE positions. To illustrate, we can show the DE nature of the object position of (67-c) by observing the following entailment relation:

(68) En fazla iki öğrenci meyve sev-iyor. → En fazla iki öğrenci elma sev-iyor.
At most two student fruit love-PRES.3sg → En fazla iki öğrenci apple love-PRES.3sg
'At most two students love fruits.' → 'At most two students love apples.'

In a model that has at most two students that love fruits (say, a single student loves fruits), entails the truth of the sentence *at most two students love apples*, since even if this single student does not like apples, the *at most two* condition will be met by virtue of not exceeding two students, and the entailment will hold. Accordingly, we can state that the object position in (68) is a DE position (I omit the DE test of the restriction of the universal in (67-b) for space, but, it can also straightforwardly shown to be DE as well). Nevertheless, just like the pure non-veridical (67-a), the DE (67-b) and (67-c) also do not license the NCIs, even though every DE domain is also a non-veridical domain (viz. Figure 1).

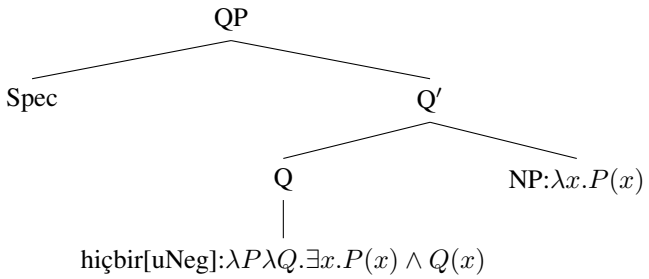
Looking at the data and the discussion above, I argue that we can safely question the validity of the sufficiency of the non-veridical approach for answering the *licensor* question regarding the Turkish NCIs. Further, looking at the ill-formedness regarding the DE contexts, we can confidently generalize that DE is also not sufficient for licensing the Turkish NCIs. But be that as it may, perhaps non-veridicality or DEness might be a "necessary" condition for DE licensing. For the DE approach, there is the challenge of question structures, where there is no entailment at all (cf. (Nicolae, 2015) for the view that argues for the availability of a local DE in questions). On the other hand, non-veridical approach seems to capture "necessary" requirement of the Turkish NCI data, as to my knowledge, there is no instance in which a proper Turkish NCI is licensed in a veridical context. Naturally, this kind of generalization is not really useful for explanatory work, since we still have to explain why some non-veridical contexts do not license NCIs at all. Perhaps, there may be another way of generalizing the similarities between yes/no questions and AA contexts, where their shared property can be used to

generalize the licensors of NCIs. But, I know no such common property, and so, I will have to content with the simple descriptive generalization in (66), which represents the necessary operators/domains for NCI licensing in standard Turkish.

3.1.2 The Licensee Question

The licensee question is about the nature of negative dependents, or more precisely, it is about the property that makes a negative dependent dependent on negative(-like) elements. For Turkish NCIs, both the semantic/pragmatic approach and the syntactic approach has been adopted, although the latter camp seems to be more dominant (Kornfilt (2007); Özgen (2021); Kayabaşı and Özgen (2018); Görgülü (2017); Kelepir (2001); Kesici (2019); Jeretič (2023), a.o.). The syntactic camp for the licensee question takes NCIs to have a syntactic property (e.g. a syntactic feature), which require the NCIs to be in a specific relation with a negative-like element or context, such as the work of Kayabaşı and Özgen (2018), Özgen (2021), Kelepir (2001), and Jeretič (2023). Even though their analyses may differ, they all take the NCIs to have a syntactic requirement, and thus they are (perhaps implicitly) part of the syntactic camp. Kayabaşı and Özgen (2018) take NCIs to require a syntactic licensing that is subject to locality constraints that stem from the derivation by *phase* (Chomsky, 2000, 2001). A similar approach is also taken by Özgen (2021). For Jeretič (2023), the proposal of negative concord by Zeijlstra (2004, 2008, 2022) is argued to capture NCIs in Turkish, in which the NCIs have a [uNeg] feature that needs to be licensed in the syntactic interface by a [iNeg] feature. So, Jeretič adopts Zeijlstra's basic analysis of NCIs in NC languages, and moreover, following Penka (2011, 2012), she assumes that quantifier NCIs are formed by combining an NP and an existential quantifier that carries an [uNeg]-feature. Jeretič then proposes the following syntax for the Turkish quantifier NCIs:

(69) The internal syntax of a quantifier NCI[24]



(Jeretič, 2023, p. 1177)

The representation above shows us a typical quantifier NCI, where the head *hiçbir* has the syntactic feature [uNeg] and the semantic representation $\lambda P \lambda Q.\exists x.P(x) \wedge Q(x)$. We can see from the semantic representation that *hiçbir* is taken to be a typical existential, so we may infer that the NCI nature of *hiçbir* is (maybe implicitly) attributed to the syntactic feature [uNeg] in her analysis. Comparable analyses can be extended to other studies that take Turkish NCIs to be negative dependents for syntactic criteria. As an example, Kelepir (2001) argues for a syntactic licensing requirement based on the *Immediate Scope Constraint* by Linebarger (1980, 1987), where only the syntactic part of ISC (i.e.

[24] Due to tool differences, there are some notational differences between the representation here and in the original study, but the differences are not really significant.

ISC (A)) is taken into consideration, so we may consider Kelepir's analysis of Turkish NCIs to be part of the syntactic camp as well.

For Turkish NCIs, the semantic/pragmatic approaches seem to have been less frequent than its syntactic counterparts. One study that analyses Turkish NCIs under a semantic framework comes from Görgülü (2017), which as we mentioned earlier, proposes the *non-veridicality* approach to Turkish NCIs. In the *non-veridicality* approach, NCIs are licensed in non-veridical domains, and so, in such an approach, we may construe that one reason (possibly among others) that the Turkish NCIs are NCIs, is by virtue of their requirement of a non-veridical domain.

As far as I could infer from the relevant work on Turkish NCIs, there is no study that utilize some other "mainstream" semantic/pragmatic approaches, such as the exhaustification based account of Chierchia (2004, 2006, 2013). So to rectify this, in the following examples we illustrate a simplified application of the exhaustification theory of Chierchia (2013) to Turkish NCIs:[25]

(70) *Hiçbir kurabiye kal-dı.
No cookie left-PAST.3sg
a. Assertion: $\exists$x $\in$ D [cookies(x) $\wedge$ left(x)]
b. Alternatives: {$\exists$x $\in$ D$'$ [cookies(x) $\wedge$ left(x)]: D$'$ $\subseteq$ D }
c. Exhaustified: O_{DA} {$\exists$x $\in$ D$'$ [cookies(x) $\wedge$ left(x)]: D$'$ $\subseteq$ D } (contradicts assertion)

(71) Hiçbir kurabiye kal-ma-dı.
No cookie left-NEG-PAST.3sg
'There are no cookies left.'
a. Assertion: $\neg\exists$x $\in$ D [cookies(x) $\wedge$ left(x)]
b. Alternatives: {$\neg\exists$x $\in$ D$'$ [cookies(x) $\wedge$ left(x)]: D$'$ $\subseteq$ D }
c. Exhaustified: O_{DA} {$\neg\exists$x $\in$ D$'$ [cookies(x) $\wedge$ left(x)]: D$'$ $\subseteq$ D } (no contradiction)

The representation above, which follows the examples of Szabolcsi (2018) from (28) and (29), is a simplified illustration of the Turkish NCI *hiçbir* under the exhaustification theory. Albeit for simplification some details are omitted here, the core idea can still be discussed. In (70), the null exhaustifier O_{DA} negates all of the alternatives which are not entailed by the assertion. Since the assertion *there are any/some cookies left* do not entail any of the alternative subdomains like *there are any/some cookies left in the kitchen*, etc., negating all these subdomains will not leave any possibility for the assertion to be true. In other words, as negating all the given subdomains will trigger a reading that is roughly equivalent to *there aren't any cookies left (anywhere)*, and integrating such a reading into the meaning of the sentence that has the assertion *there are cookies left*, will result in a reading that somewhat corresponds to the following: *there are cookies left and there aren't cookies left (anywhere)*. Clearly, this is a logical contradiction, and for Chierchia, such logical contradictions give rise to ill-formedness (see also (Zeijlstra, 2022, p. 236–237) for a summary of the logical and non-logical contradictions, and their difference with respect to grammaticality). For the negative structure in (71), there are no contradictions, because all the subdomains (e.g. *there aren't cookies left in the fridge*) are entailed by the assertion (i.e. *there aren't any cookies left*). So the exhaustifier does not negate any of these alter-

[25] There are differences between NCIs and NPIs, or more specifically, between strong and weak NPIs in Chierchia's system, where NCIs are taken to be a specific subcategory of strong NPIs. See chapter 4 of Chierchia (2013) for NCIs under the exhaustification approach.

natives, which means there is no reason for logical contradiction, and so the sentence is well-formed. In brief, the given approach represents the conceptualization that NCIs come with mandatorily active alternatives, which separates them from non NDs, and the preceding discussion can be considered as a brief and rough application of the idea to Turkish NCIs.[26]

Altogether, in this section, we have examined the licensee question regarding NCIs in Turkish. First, we mentioned the syntactic camp, where the Turkish NCIs were taken to be elements that require a syntactic property for licensing (e.g. (Jeretič, 2023; Kayabaşı and Özgen, 2018; Kelepir, 2001), a.o.). Then we moved on to the semantic camp, which appears to be the less frequent approach. We noted the non-veridicality approach of Giannakidou (2019), which was adopted by Görgülü (2017). Lastly, I tried to sketch out a simplified application of the exhaustification approach of Chierchia (2013) to Turkish NCI data. The next section will be about the studies regarding the licensing question.

3.1.3 The Licensing Question

The licensing question is about the type of dependency between a negative dependent and its licensor/-domain. Is the dependency syntactic, semantic or something else entirely? In the previous chapter we have noted two main camps for the nature of NDs: the semantic paradigm and the syntactic paradigm. Then, we observed that the semantic paradigm appears to be less common compared to its syntactic counterpart. For the semantic approach, Görgülü (2017) was discussed, where the notion of non-veridicality is adopted for NCIs and their licensing, however the exact mechanism does not appear to be explictly stated in the given study, and moreover, the lack of the precise formalization of the non-veridicality theory results in an overgeneration problem. The examples are repeated below:

(72) a. *Belki, Can hiçbir öğrenci-ye güven-di.
Perhaps Can no student-DAT trust-PAST.3sg

b. *Hiçbir bilim-i sev-en herkes meraklı-dır.
No science-ACC love-NMN everyone curious-COP

c. *En fazla iki öğrenci hiçbir meyve sev-iyor.
At most two student no fruit love-PRES.3sg

Since we discussed these examples priorly, I will not detail them, but it is suffice to say that there are variety of non-veridical domains, in which the Turkish NCIs are not licensed, and therefore it is not exactly apparent why this would be the case. That is, if we adopt the non-veridicality theory as is put in Görgülü (2017) without making modifications.

For the syntactic camp, there have been a considerable amount of research (e.g. Kelepir (2001); Kayabaşı and Özgen (2018); Özgen (2021); Jeretič (2023); Kornfilt (2007), a.o.). For the NCI licensing, the syntactic approaches make use of syntactic dependencies and constraints, such as agreement (or the *Agree* mechanism of Minimalism), c-command, syntactic domains (e.g. *phases*, *finite/non-finite clauses*, etc.), and so on. As an example, (Kornfilt, 2007, p. 324) state that Turkish NCIs (in her terms NPIs) are licensed under c-command, by a "local" negative item. The notion of locality for NCI li-

[26] For intervention effects in Turkish specifically, we will adopt an earlier version of Chierchia's theory (mainly Chierchia (2004)), and I will have to leave an investigation based on his more recent work (i.e. (Chierchia, 2013)) to a future occasion for practical reasons.

censing, however, is not so straightforward for a multitude of reasons.[27] Kornfilt (2007) (a.o.) can be considered to adopt what is called the *clausemate* approach by Özgen (2021), and in this approach the "local" domain is essentially reduced to a clause. But clearly, unless what constitutes a "clause" for the sake of such approach is clarified, it makes incorrect predictions:[28]

(73) ?[Sen-in [hiçbir çocuğ-a yardım et-mek] iste-diğ-in]-i
[you-GEN [no kid-DAT help AUX-INF] want-NMN.FUT-POSS]-ACC
anla-ma-mış-tı-m.
understand-NEG-EVI-PAST-1sg
'I didn't understand that you wanted to help any kid.'

The NCI *hiçbir çocuk* is situated in the infinitival subordinate clause of the verb *iste* (i.e. *want*), which itself constitutes a subordinate clause for the matrix verb *anla* (i.e. *understand*). At first glance, the well-formedness of a data like (73) renders the clausemate approach obsolete, however, if we invoke notions such as finiteness, then there could be a way to argue for the adequacy of the clausemateness approach.[29] For the sake of the argument, let's assume that both the infinitival marker *-mAK* (i.e. -

[27] One reason for the locality complication comes from the unstability of the native judgments. For unclear reasons, perhaps related to *performance*, the well-formedness of long-distance NCI structures seem to vary quite heavily from speaker to speaker:

(i) *Kimse-nin gel-diğ-in-i bil-mi-yor-um.
no.one-GEN come-NMN-POSS-ACC know-NEG-PRES-1sg
'I don't know that anybody came.'

The data above is taken from (Kelepir, 2001, p. 150), which is argued to be ungrammatical. Although the sentence is also incredibly awkward for me too, the following structure is well-formed with the same matrix verb when we only add a past tense marker:

(ii) Kimse-nin gel-diğ-in-i bil-mi-yor-du-m.
no.one-GEN come-NMN-POSS-ACC know-NEG-PRES-PAST-1sg
'I didn't know that anyone came.'

After doing some minor informal tests on native speakers based on a small set of long distance NCI licensing, the intuitions regarding non-clausemate licensing of NCIs turned out to be relatively mixed. To stipulate, perhaps some pragmatic oddity might be relevant here, or frequency might also play a role. But besides stipulations, I cannot provide any explanation or clarification for the mixed responses of native speakers to the apparent long-distance NCI licensing structures. The indication is that we may need a more stable way of acquiring data for especially long distance structures, but I shall not pursue utilizing a different method specifically for long distance configurations since our focus is on intervention effects, not on long distance licensing of NDs.

[28] A member of the jury states that the sentence in (73) is not well-formed, and notes that if the given sentence is truly well-formed, then some other forms of long distance licensing structures should be well-formed as well. However, as we see in footnote 27, even within the seemingly same distance, the judgments may change due to the presence of some other elements, such as the presence of the past marker. This indicates that there may be other factors in addition to the distance that may affect the well-formedness of the so-called long distance licensing structures. Nevertheless, identifying the distinct properties in long distance structures that may or may not allow NDs lies outside the scope of this work, since such structures are not directly related to the problem of intervention effects. The point of the illustration in (73) is to show that certain theories predict such sentences to be ill-formed, but they seem to be (at least somewhat) well-formed, thus such theories appear to have a soundness (i.e. undergeneration) problem with respect to such long distance sentences. In any case, I should note that our study does not make any (direct) claims regarding why some long distance structures with NDs are fine whereas others are not. Unfortunately, this inquiry is left to future work and we focus on intervention configurations.

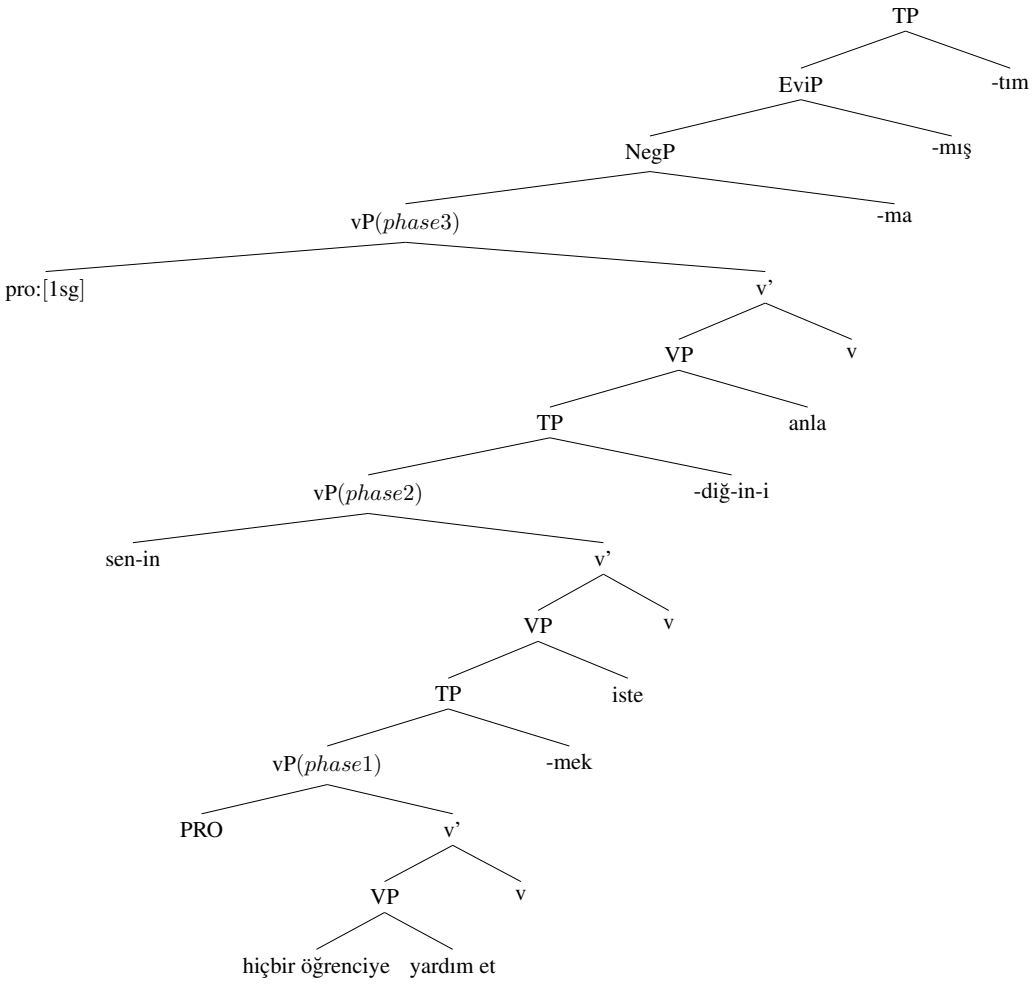
[29] On behalf of streamlining the current discussion, I take finiteness to be the presence of tense and agreement features on a given clause. See Nikolaeva (2007, 2010) on finiteness.

mek in (73)), and the nominalizer *-DIK* (and its future-like counterpart *-AcAK*) do not constitute finite domains, and let us further stipulate that NCI licensing takes place in a single finite clause. Such a hypothesis would predict the sentence in (73) to be well-formed, since the negation and the NCI are in a local domain as they both are situated in a single finite clause. Nevertheless, by adopting this "revised" clausemate hypothesis, we would be making predictions related to other grammatical phenomena, such as *binding* and *movement* to name a few, since finiteness and locality also play a role for them. Thus, due to its noticeable extent, I will ignore the possibility of the revised clausemate hypothesis. For the default version of the clausemate requirement, it is already shown to run into complications due to data like (73), which means that unless the clausemate idea is precisely formulated, it cannot be straightforwardly adopted for Turkish NCIs.

Another approach to the locality constraints on NCI licensing comes from studies such as Kayabaşı and Özgen (2018) and Özgen (2021), which seem to adopt what Özgen (2021) calls the *phasemateness* approach to NCI licensing. In the phasemateness approach, NCIs must be phasemate with their licensor, or in other words, NCIs and their licensor must be spelt out within the same domain. Similarly, Jeretič (2023) also adopts a phase-based account, however, she further adopts the NC as syntactic agreement approach by Zeijlstra (2004, 2008, 2022). As we previously noted, in Zeijlstra's approach, NC is the result of Agree between an interpretable feature [iNeg] and at least one (but possibly more) uninterpretable feature [uNeg], where multiple probe-goal agreement is possible since his NC theory utilizes Multiple Agree (Hiraiwa, 2001). The licensing of the uninterpretable feature [uNeg] is taken to be a phase bound form of upward Agree, in which [uNeg] acts as a probe and scans the c-commanding phasemate goal with the [iNeg] counterpart. To elaborate on the phase bound accounts, we can go over (73), which is a long distance licensing example. In (73), negation and the quantifier NCI are separated by two clauses (i.e. *yardım et* clause and *iste* clause). For theories that try to account for NCI licensing with phases, the distance between the negation and the quantifier NCI is crucial. To clarify the distance between the NCI and the negation, we can use a traditional tree representation as in below:

(74) ?[Sen-in [hiçbir çocuğ-a yardım et-mek] iste-diğ-in]-i
[you-GEN [no kid-DAT help AUX-INF] want-NMN-POSS]-ACC
anla-ma-mış-tı-m.
understand-NEG-EVI-PAST-1sg

'I didn't understand that you wanted to help any kid.'



In the simplified tree above, we see at least three phases when we follow Jeretič's (2023) assumptions, which is that vP and CP are phases. Without getting into some theoretical discussions about what constitutes a phase, or some other debates about the nature of spell-out domains, we can identify at least three phases in the tree, which are shown on the relevant nodes on the tree. The complication for NCI licensing under such structures is that, if we assume the tree representation of the string to be (somewhat) accurate, then we see that there is no way that the matrix negation can access the indirect object of the embedded VP (i.e. *hiçbir öğrenciye*). To understand why this is the case, we need to review the so called phase impenetrability conditions (PICs) (Chomsky, 2000, 2001):

(75) a. **STRONG PIC/PIC1**
The domain of H is not accessible to operations outside HP; only H and its edge are accessible to such operations.

b. **WEAK PIC/PIC2**
The domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations.

(Citko, 2014, p. 33)

The definitions above are necessary for understanding why the tree in (74) is a shortcoming for the licensing of such embedded quantifier NCIs under the phase framework. In the Strong PIC assumption, the domain (i.e. complement) of the phase head H (e.g. little v), becomes inaccessible to further operations the moment whole HP is complete (e.g. vP). In the Weak PIC assumption, the domain of the phase head H becomes inaccessible to further operations the moment the next phasal head Z (e.g. C) is merged. When we assume that vP and CP are phases, which is the assumption made by Jeretič, we realize that both PICs are too restrictive for licensing the quantifier NCI in (74): in Strong PIC, the moment vP(phase1) is complete in (74), the complement of the phase head little v (i.e. VP) will be spelled-out and will become inaccessible for further operations; in Weak PIC, the moment the next little v is merged, the complement of the first v (i.e. [VP *hiçbir öğrenciye yardım et*]) will be spelled-out, which will leave it inaccessible for further operations. As the matrix Neg is merged after the vP(phase2) is complete, by the time NEG is merged to the structure, in both versions of PIC, the VP that includes the quantifier NCI will be spelled-out, meaning that no further operations can access the elements inside VP.[30]

To reiterate, assuming that the grammaticality is correct in (74), then the embedded VP that includes the NCI cannot be visible to the matrix negation under either PICs. In Strong PIC, the embedded VP *hiçbir öğrenciye yardım et* will be spelled out the moment the containing vP is complete, hence the quantifier ND should not be licensed by matrix negation, but it does, therefore Strong PIC in its current form undergenerates this structure. Further, Weak PIC also does not save the current picture, the moment the secondary phase head little v of the second embedded clause is merged, the VP that contains the quantifier NCI *hiçbir öğrenciye* will be spelled out, thus before the matrix negation is merged, the NCI will be inaccessible for further operations, but we see that the structure is grammatical, thus again, like its Strong sister, Weak PIC in its current form also undergenerates the structure in (74).

Essentially for the discussion regarding syntactic locality for ND licensing, some data like (74) require us to be mindful of the locality constraints that we propose, especially within the phase framework. Unless we propose some alterations to the standard assumptions of phases, then we seem to undergenerate the string in (74).[31] Naturally, there may be certain ways to account for this, such as proposing that long distance agreement might be possible because phases only constrain movement operations (Bošković, 2007). Thus long distance agreement relations may become possible under the phase theory. Notwithstanding the possibilities of locality-free agreement, there is in fact one uniform shortcoming for all the purely syntactic accounts we have seen so far: the so-called intervention effects.

Above, we have discussed some syntactic accounts for the NCI licensing in Turkish. Even though I tried to elaborate on some of their shortcomings regarding the distance between the licensor and the

[30]There are other possible representations for the tree in (74). In one representation, the quantifier NCI may move to a higher position rather than being in-situ (e.g. Spec, vP). But unless the NCI moves higher than the second little v that is above *iste*, then the licensing is still predicted to not occur. As long as we cannot find a motivation for moving the NCI to a higher position than second little v, the sentence with such a representation is predicted be ungrammatical by the PICs that we introduced in (75).

Another representation would be to propose an NP/DP layer above vP(*phase2*), since there appears to be a nominal agreement marker and ACC case on *-DIk*, and this NP/DP could constitute a phase as well. For simplification, I will not pursue "DPs as phases" analysis, since even if *-DIk* constitutes a phase, then we would have an additional phase boundary, which would add more "distance" between the negation and ND. In short, we would have four phase nodes instead of three, and as we have already seen, presence of more than two phase nodes in between the negation and ND are a complication for the long distance licensing from the perspective of "classical" phase theory, unless of course some alterations are made.

[31] For instance, following Gallego (2010), the notion of *phase sliding* is utilized in Özgen (2021) to account for some complications regarding the phasemateness approach to Turkish NCIs.

licensee, just to simplify the analysis, let us assume that such shortcomings are relatively trivial and can be straightforwardly accounted for by the aforementioned accounts. Still though, there is one clear complication, namely the intervention effects. Unless revised, both the clausemate and the phasemate accounts fall short when it comes to the intervention effects that we see in (5). I illustrate one of them here:

(76) */??Her hoca hiçbir öğrenci-ye güven-me-di.
Every teacher no student-DAT trust-NEG-PAST.3sg
Not available:'Not every teacher helped any students.'

The sentence above does not have the reading *not every teacher helped any students*, and for some native speakers like myself, it is completely ungrammatical. Why should this be the case? Under purely syntactic accounts, such as the clausemate or the phasemate based accounts, there aren't any straightforward ways to account for the ill-formedness of (76). For the clausemate approach, the NCI and the negation are clausemates, and thus they are predicted to be well-formed, that is, if we assume the clausemate configuration to be a sufficient condition. If we assume that clausemateness is only necessary, then we still would have to explain why the long distance licensing that we have previously mentioned are well-formed (e.g. (74)). For the phase-bound approach (excluding its independent complications), whether we use features or not, unless we find a reason as to why the presence of the universal quantifier disrupts the licensing of (76), then we run into overgeneration problems. The Turkish data indicates to me that adoption of a phase base account of NCI licensing is bound to run into complications on three grounds: (i) a sentence like (74), or similar long distance licensing structures indicate that locality constraints by phases may not play a role in NCI licensing; (ii) we may adopt a feature based NCI licensing similar to Jeretič (2023), and further, adopt Bošković (2007) and state that agreement is not bound by syntactic locality, which would mean that we might be able to find ways to account for the long distance licensing, but then the relevance of phasal derivation for NCI licensing becomes obscure; and (iii) the intervention effects show that, even if we may find a way to argue that syntactic locality and phases are relevant for NCI licensing, at most they can be a necessary requirement, since there are quite local configurations in which an NCI is not licensed by an appropriate licensor due to the presence of another element (e.g. (76)).[32]

Before concluding, I should, again, mention that there is one study that is able to tackle a considerable fragment of intervention data, which comes from Kelepir (2001), who adopts ISC (A) of Linebarger (1980, 1987). Although we noted earlier that it has some complications, still it appears to be the only analysis that can account for the said intervention effects, and thus, it may be *the* analysis that captures the biggest fragment of Turkish NCIs. Since I will detail her analysis later on at length, I will skip it here.

All in all, regarding the licensing question on Turkish NCIs, we have mostly focused on the syntactic accounts, since other accounts seem to be less widespread. For the syntactic accounts, by following the

[32] Zeijlstra maintains that syntactic locality should play a role for agreement (Zeijlstra, 2022, pp. 243–245). However, the long-distance agreement data like (74) is a clear complication, yet, there may be some way to argue that even in such apparent long-distance agreement data, there may be syntactic constraints on agreement. One possibility would be to stipulate that vP may not constitute a phase for Turkish, which in turn would mean that the sentence (74) would have a "local" agreement within the same phase. Another possibility could be to argue that the given NCI is actually raised to a higher position, thus, it can get into a probe-goal relation with the matrix negation in a syntactically local domain. Both approaches, and perhaps more, might turn out to be possible, but if such approaches seem reasonable, they will need to be pursued elsewhere.

terms of Özgen (2021), we have noted two paradigms within the syntactic camp for licensing of Turkish NCIs: (i) the clausemateness camp, which state that the licensor and the licensee must be within the clausal domain; and (ii) the phasemateness camp, which state that the licensor and the licensee must be spelled-out within the same phase. After reviewing some studies from both camps, I argued that no theory so far (excluding Kelepir (2001)) is able to tackle the so-called intervention effects in any transparent manner. This clearly indicates that we still need a theory of NCI licensing that can also include such effects, and to that end, I will try to argue that the analysis of Chierchia (2004) appears to be the strongest candidate for such a theory, since it allows us to capture a considerable amount of intervention data. Nevertheless, before jumping to examining the details of Chierchia (2004), let's continue with the preliminaries. Next, we will go over the NC properties of Turkish.

3.2 Negative Concord

The NC in Turkish, excluding some non-negative structures like questions, mainly correspond to the so-called *strict NC*, where the NCIs need licensing by a negative(-like) element (Giannakidou and Zeijlstra, 2017) (cf. Jeretič (2023), who argues for an "exceptionally optional" NC view based on *ne... ne...* structures). For our purposes, the classification of NC is not crucial, because classifying the NC of a language in one way or the other does not aid us with the distributive properties of its NCIs in a meaningful way, specifically when it comes to the intervention effects. A language may show, say, fully strict NC behavior, but we would still need to explain under what conditions its NCIs are licensed by negation, and since classifying a language as strict NC or something else does not precisely illustrate the restrictions regarding the licensing of its NCIs, we will not deal with the classification of the type of NC in Turkish.

In this chapter, we will shortly take a look at the compositionality puzzle regarding Turkish NCIs, which is about the fact that the presence of more than one seemingly negative elements do not generate a double (or more) negative reading in NC structures. We noted that according to Zeijlstra, there have been two approaches for this puzzle: (i) NCIs as NQs; and (ii): NCIs as NPIs. I will argue that Turkish NCIs cannot be analyzed as NQs straightforwardly, and they should be better analyzed as NPIs in the sense that they are inherently non-negative elements that depend on another negative-like element/environment for licensing.[33]

3.2.1 NCIs as Negative Quantifiers

The negative quantifier approach to NCIs take NCIs to be inherently negative quantifiers (Giannakidou and Zeijlstra, 2017; Zeijlstra, 2022). This means that if Turkish NCIs are NQs, then we predict them to behave in an equivalent way to typical NQs, like *nobody*. Clearly though, this approach to Turkish NCIs immediately raises a number of questions. First, Turkish NCIs always require some negative(-like) element or domain to be licensed as we have seen many times before, which would not be predicted if we analyze Turkish NCIs as NQs. Second, there are some structures in which a given NCI does not yield a negative reading (e.g. question structures). Simple illustrations for both points are below:

[33] The given study focuses on the NCIs that require licensing, and since the *neither... nor...* correspondence of Turkish, namely *ne... ne...*, does not require licensing, I will not detail its distributional properties. See Jeretič (2023) and the related references for more on *ne... ne...* structures.

(77) a. Hiçbir öğrenci-ye yardım et-*(me)-di-m.
No student-DAT help AUX-*(NEG)-PAST-1sg
'I did *(not) help any students.'
b. (Hiç)kimse-ye yardım et-tin mi?
(no)no.one-DAT help AUX-PAST Q
'Did you help anyone?'

Under the NCI as NQ approach, both sentences above are complications. The first sentence shows that Turkish NCIs, like typical NPIs, require the presence of a negative-like element/domain to be licensed. The second shows that there are instances in which the NCI does not show any inherent negation at all. It looks as if that such sentences clearly indicate Turkish NCIs cannot be analyzed as NQs, at least not without any proper elaboration. Hence, we are left with the NCIs as NPIs approach, which is the approach that I will adopt.

3.2.2 NCIs as NPIs

NCIs as NPIs approach take NCIs to be dependent on some kind of licensor, which is practically equivalent to the definition of NPIs. Due to Turkish NCIs requiring a licensor, I argue that they behave as NPIs. For the NCIs as NPIs approch, we saw three camps: (i) the indefinite approach, which take NCIs to be indefinites in a similar manner to *any*, where in addition to being an indefinite, NCIs also come with a *roofing* (i.e. licensing) requirement that requires them to be licensed by a negeative-like element; (ii) the syntactic-agreemeent approach, which is similar to the indefinite approach, but additionally, NC is argued to stem from a syntactic agreement between an NCI with some feature (e.g. [uNeg]) and a negative element with a corresponding feature (e.g. [iNeg]); and lastly (iii) the universal quantifier approach, which take NCIs to be UQs that scope over negation. To shorten the discussion, I will adhere to the analysis of Jeretič (2023), who takes Turkish NCIs to be inherently non-negative existentials based on two points.

First, Jeretič points out that the morphological make-up of the Turkish NCIs of the type "no NP" are reflected with the string *hiçbir N*, which can be considered as the combination of *hiç* ('ever') and *bir* ('one'). She takes this composition to indicate that these elements are at least historically existential quantifiers. Her second point is related to the sentences where an intensional operator (e.g. necessity or possibility) can take scope above the existential quantifier (i.e. NCI) but below the negation. Jeretič points this out by illustrating the observation that negative quantifiers (i.e. NCIs in this case) can have the *de dicto* reading when there is a modality that takes narrow scope with respect to negation, which basically refers to the reading that corresponds to the seeming negative quantifier taking a narrow scope w.r.t. the intensional operator that is also interpreted below the negation. Her examples are illustrated below:

(78) Buraya hiçbirşey sığ-a-ma-z.
here nothing fit-CAN-NEG-AOR.3sg
'Nothing can fit in here.'
a. *Everything present is too big for the space.* *de re*: $\neg > \exists > \Diamond$
b. *The space is too small to fit any potential things.* *de dicto*: $\neg > \Diamond > \exists$

(79) Hiçkimse-yle konuş-mak zorunda değil-sin.
nobody-with talk-INF need cop.NEG-2sg
'You don't have to talk to anyone.'

a. *Everyone present is such that you don't have to talk to them.* *de re*: $\neg > \exists > \Box$
b. *There is no obligation to talk to any potential human.* *de dicto*: $\neg > \Box > \exists$

(Jeretič, 2023, p. 1171)

As Jeretič argues, both sentences above have the *de dicto* interpretations quite saliently, where the reading is about "what is said" rather than "about the thing". To put it in simple terms, the *de dicto* readings, which are paraphrased above, refer to entities that are not precisely defined in a relevant domain, they can essentially be anything. On the other hand, the *de re* reading is the reading that is about an entity or entities that are unambigous in a given context. The *de dicto* reading is argued to have the scope in which the intensional operator is higher than the given quantifier, so the quantifier is represented lower than the modality. Moreover, the intensional operator also need to scope below the negation in all the reading above, whether *de re* or *de dicto*, since both the necessity and the possibility operators are only interpreted below negation in those structures (e.g. *it is not possible...* or *it is not necessary...*). Hence, if the quantifier NCI scopes below the intensional operator in *de dicto* readings, and the intensional operators are interpreted as scoping below negation, then to capture such readings, the quantifier must also scope below the negation, which is only possible if the NCI is existential, otherwise the universal NCI would need to be interpreted above negation but below the modality that sits below negation, which is not a logical possibility (how can the same universal be below and above negation at the same time?). I argue that Jeretič's analysis of the sentences in (78) and (79), provides a convincing argument in favor for the non-negative existential analysis of the quantifier NCIs in Turkish, and so, I will likewise adopt the NCIs as non-negative existentials for Turkish NCIs.[34]

To conclude, we investigated the NCIs as NPIs approach in the current segment. To keep things brief, I presented the analysis of Jeretič (2023), which I took to present a convincing claim in favor of the NCIs as non-negative existential approach based on the analysis of (78) and (79). After all, if we do not take the given NCIs as existentials, then it is quite uncertain how we can account for the *de dicto* readings in the given examples.

3.3 Summary

The current chapter was about the literature on negative dependencies in Turkish. Initially, we started with the fundamental questions and how they were evaluated for the Turkish NCIs. For the licensor question, after reviewing many different proposals and reviewing a numbeer of data, I argued that Turkish NCI licensors can be: (i) AA operators/domains, and (ii) questions. Further, we discussed the licensee question, where we analyzed the inherent properties of the negative dependents, meaning their difference from non-negative dependent items. Subsequently, the licensing question was discussed, where we considered many accounts (e.g. Kayabaşı and Özgen (2018); Özgen (2021); Jeretič

[34] We should note that the *de dicto* readings of the sentences in (78) and (79) are complications for the analysis of Linebarger (1980, 1987), since there is a scope bearing element that is situated in between the licensor and the licensee, and the sentence is still well-formed. It has also been discussed elsewhere that modal verbs and some other scope bearing elements do not cause intervention effects when they are in the middle of the licensor and the licensee (e.g. (Homer, 2021, p. 37)). We will get to the complications regarding Linebarger's analysis in the intervention effects section.

(2023); Görgülü (2017), a.o.), but we noted that (excluding Kelepir (2001)), all of them had one shared shortcoming, which is the so-called intervention effects. Lastly, we reviewed the negative concord nature of Turkish negative dependents, where we considered both the NCIs as NQs, and NCIs as NPIs approach for Turkish NDs, which lead us to the observation that NCIs as NQs approach faces a variety of complications. Following that, I argued Turkish NCIs should be considered as NPIs, where they behave as an existential quantifier when we consider the analysis of (Jeretič, 2023, p. 1171–1172).

Having discussed the negative dependencies in general, we can move on to the intervention effects, which constitutes the main research problem of the current study.

CHAPTER 4

INTERVENTION EFFECTS

We have briefly noted earlier that licensing of NPIs are prone to the so-called *intervention effects* (Linebarger, 1980, 1987; Chierchia, 2013; Guerzoni, 2006; Homer, 2021). Homer (2021) illustrates some of the intervention effects as in below:

(80) a. *When Fred speaks French, John doesn't always understand anything.
b. *When Fred speaks French, not everyone understands anything.
c. *When Fred speaks French, it's not the case that everyone understands anything.
d. *John didn't understand anything because it was easy but because he is smart.
e. *John didn't drink wine and any coffee.

(Homer, 2021, p. 20)

The data in (80) show the intervention effects. The presence of elements like universal quantifiers, *because* clauses, *and* coordinations, etc., in between the licensor and the NPI appear to anti-license NPIs that are otherwise well-formed in a given structure. All the structures in (80) have a legitimate licensor for NPIs (i.e. negation), but the sentences are ill-formed, indicating that the presence of the intervening elements might be the reason for the ungrammaticality. Homer notes the examples in (81) for comparison:

(81) a. When Fred speaks French, it's not the case that anyone understands anything.
b. John didn't drink wine or any coffee.

(Homer, 2021, p. 20)

Sentences in (81) show that not every element is an intervener for NPI licensing. The presence of a higher NPI in (81-a) (i.e. *anyone*) does not cause anti-licensing for the lower one (i.e. *anything*). Similarly in (81-b), *or* does not seem to cause the intervention effect that is present with its *and* counterpart.

In this chapter, I will introduce two accounts that have been largely influential for the intervention effects, namely Linebarger's (1980; 1987) *Immediate Scope Constraint*, and Chierchia's (2004; 2006; 2013) *Scalar Implicature* account.

4.1 The Immediate Scope Constraint (ISC)

So far we have seen that NPIs are licensed by a variety of operators or environments (e.g. AM, AA, DE, Questions etc.), but essentially every NPI was well-formed when they are licensed by a negation. However, Linebarger (1980, 1987) notes that even the presence of negation is not always enough to licence NPIs. As shown in (80), NPI licensing is also restricted by a certain form of locality constraint. I illustrate similar examples from Guerzoni below:

(82) a. I didn't budge.
b. *I didn't say [that I budged]/[that John has seen Mary in years]/[that John likes Mary one bit].
c. *I didn't shoot [because you budged] (but because...).
d. *I didn't budge [because I am courageous, but because...].
e. *I won't leave [after you budge to help me].
f. *I didn't drink a cocktail and any soda.
g. Mary didn't wear any earrings at every party.
(i) Reading 1: There is no particular earring Mary wore at every party.
$(\neg > \exists_{npi} > \forall)$
(ii) Reading 2: At every party Mary wore no earrings.
$(\forall > \neg > \exists_{npi})$
(iii) *Reading 3: Not at every party there were any earrings Mary wore.
$(*\neg > \forall > \exists_{npi})$

(Guerzoni, 2006, pp. 360-361)

The exact character of the locality constraint that seems to be present in (82) is not trivial, as pointed out by Guerzoni (2006, p. 360). For (82-b) we may state that *finiteness* may play a role, but that would just explain the given instance. Similarly, we might state that an island constraint might be present for (82-f), but again, that won't exactly account for, say, (82-d). In order to account for the nature of the given locality constraints, Linebarger proposes the *Immediate Scope Constraint* (ISC):

(83) Part (A): The Immediate Scope Constraint (ISC)[35]
A negative polarity item is acceptable in a sentence *S* if in the LF of *S* the subformula representing the NPI is in the immediate scope of the negation operetor. An element is in the immediate scope of NOT only if (1) it occurs in a proposition that is the entire scope of NOT, and (2) within this proposition there are no logical elements intervening between it and NOT.

(Linebarger, 1987, p. 338)

The definition above is relatively straightforward. The ISC (A) applies at LF, and states that an NPI is well-formed if a negation scopes over the given NPI without any other intervening element at the LF representation. For the sake of simplicity, we can consider "logical" elements to be elements that have scope properties, such as *because*-clause, quantifiers, *and* coordinations, et cetera, however as we will see, such a generalization of logical elements turns out to have some shortcomings.

[35] As we have previously noted, there is also part B of this constraint, which we will get to shortly.

Previously, we have briefly discussed how ISC accounts for the data in (82). Now, let me reiterate how ISC accounts for the given ill-formed structures in a bit more detail. For (82-b), ISC can be thought to operate in one of two possibilities: either the finiteness head *that* acts as a logical operator, thus intervening between the negation and the NPI at LF, or negation at LF cannot scope over NPI due to a finite barrier, which causes the NPI to not be in the scope of negation at all, but in either case, the licensing is predicted to be blocked due to ISC. In (82-c), the NPI in the *because*-clause has two possible positions at LF, meaning it can either scope over negation, or scope below negation, but due to ISC, both possibilities are ruled out. If the *because*-clause in (82-c) scopes over negation at LF, then the NPI cannot be under the scope of negation, thus resulting in an ill-formed structure, and if *because*-clause is under the scope of negation, then *because* as a logical element intervenes between negation and the NPI, causing NPI to have no way of being licensed. The sentence in (82-d) is a bit different than (82-c), since the NPI is not contained in the *because*-clause. ISC rules this sentence out due to the presence of *because*-clause in between the NPI and negation. Naturally we may ask why can't *because*-clause scope over negation to allow licensing of the NPI, since *because*-clause may scope over negation, but when the *because*-clause has the reading as in [because I am courageous, but because...], it forces the *because*-clause to scope under negation, hence causing the intervention effect.[36] The *after*-clause in (82-e) essentially corresponds to the *because*-clause intervention. Either *after*-clause somehow scopes over negation, which means the contained NPI is not under the scope of negation, or it scopes below negation, meaning *after* intervenes between the negation and the NPI. The intervention effect in (82-f) stems from the intervening *and*, which is a logical operator, meaning that an NPI coordination by *and* violates ISC, as *and* is structurally higher than (or *dominates*) the elements it coordinates.[37] Finally, we see the interpretation blocking of ISC in (82-g). In English, usually quantifiers can be interpreted ambiguously, where a quantifier can scope above or below another quantifier or negation in a structure all else being equal. Yet, in (82-g) we can observe that the interpretation that has the universal quantifier in the middle of negation and NPI is not allowed, and this lack of reading is predicted by ISC, since there can be no logical operators in between the negation and the NPI at LF.

All in all, ISC in (83) allows Linebarger to capture the intervention effects that are present in (82), but as Guerzoni (2006) mentions, there are numerous violations to ISC:

(84) a. I didn't say that you are dating anyone.
b. Mary didn't come to the party because anybody invited her.
c. If you give a damn about the whales, you'll contribute.

[36] To clarify the reading of [because I am courageous, but because...], we can examine the sentence below:

(i) I didn't help Harry because I am courageous, but because I had to.
'It is not that because I am courageous I helped Harry, but rather I helped Harry because I had to help Harry.' ($\neg >$ BECAUSE)

The reading above is argued to require the *because*-clause to scope under negation. Therefore, when the NPI is situated below the *because*-clause (e.g. as an idiomatic NPI verb), it is predicted to be ungrammatical, which is what (82-d) illustrates. To my knowledge, there is no way for the the verb to take scope higher than the *because*-clause in structures like (82-d), meaning there is basically no way for the idiomatic NPI expression to be licensed.

[37] As a brief reminder, *or* does not cause intervention, and further, *and* also doesn't always cause intervention, especially when *and* is used with collective predicates (see Buccola and Crnič (2021)):

(i) a. I didn't drink a cocktail or any soda.
b. John didn't mix a cocktail and any soda.

The collective predicate and its interaction with NDs will be discussed later on.

(Guerzoni, 2006, p. 361)

The ISC that is defined in (83) undergenerates the strings in (84). For example, the finiteness in (84-a) is expected to cause an intervention effect similar to (82-b), or equivalently, the lack of negation in (84-c) should yield an ill-formed structure, still, all the sentences in (84) are grammatical. To account for such violations of (83), Linebarger proposes the second part of ISC, which is an implicature, hence pragmatic based constraint on NPI licensing, which she calls the 'NI (negative implicatum) account':

(85) Part (B): The Immediate Scope Constraint
(i) **Expectation of negative implicatum is itself a conventional implicature.** A negative polarity item contributes to a sentence *S* expressing a proposition *P* the conventional implicature that the following two conditions are satisfied.
(ii) **Availability of negative implicatum.** There is some proposition NI (which may be identical to *P*) which is implicated or entailed by *S* and which is part of what the speaker is attempting to convey in uttering *S*. In the LF of some sentence S' expressing NI, the lexical representation of the NPI occurs in the immediate scope of negation. In the event that *S* is distinct from S', we may say that in uttering *S* the speaker is making an *allusion* to S'.
(iii) **NI strengthens P.** The truth of NI, in the context of the utterance, virtually guarantees the truth of *P*.

(Linebarger, 1987, p. 346)

With the inclusion of the NI-licensing, the well-formed nature of the sentences in (84) are attributed to ISC (B):

(86) I didn't say that you are dating anyone. (84-a)
a. LF:*Not [IP_1 I said [IP_2 that you are dating anyone]]
ISC (A) violation.
b. NI: I left open the possibility that you are not dating anyone.
(Guerzoni, 2006, p. 361)

The LF of (86) represents a structure that violates ISC (A), indicating that the sentence should yield an ill-formed structure, unless it is saved by ISC (B). This is precisely what occurs, and the NI that is present with the given structure allows the licensing of the NPI. Comparable analyses extends to the other sentences in (84), in which the NI licenses the NPIs.

Before discussing the shortcomings of the ISC and the NI account, we may summarize the proposal of Linebarger in the following way: an NPI must be in the immediate scope of negation at LF, where immediate is defined as not having any other logical elements between the negation and NPI. Also, an NPI in S might also be licensed by being in the immediate scope of negation in S′ due to an NI (or also entailment). And finally, for ISC (B), the NI representation (i.e. S′) must strengthen the original S (Jackson, 1994, p. 25).

Next, I will discuss the drawbacks of the ISC, following mainly the analyses of Guerzoni (2006); Jackson (1994); Homer (2021).

4.1.1 Shortcomings of ISC

We have noted that one of the primary motivations of Linebarger (1980, 1987) for her ISC account was based on the unorthodox locality constraints that were present for NPI licensing (viz. (80) and (82)). By positing ISC, she is able to account for structures that has another "logical" element in the middle of the negation and the NPI at LF. I illustrate some more straightforward examples as a reminder:

(87) a. *No student gave every teacher any apples.
b. *John didn't give a red cent to every charity.
c. *If most women have any apples, I'll be surprised.

(Jackson, 1994, p. 25)

The sentences above all have a logical element that sits in between the licensor and the licensee, and by utilizing ISC (A), Linebarger is able to account for the ill-formed nature of the structures. Naturally, if the sentence does not have any logical elements that intervene for NPI licensing as in the following, it is predicted to be grammatical:

(88) No student gave Mrs. Smith any apples.

(Jackson, 1994, p. 25)

Here at the surface string between *no student* and *any apples*, there is only the *Mrs. Smith* and the sentence is well-formed, indicating that proper nouns do not constitute logical elements for the sake of ISC, which intuitively is a reasonable behavior of proper names. Yet, there are variety of logical elements that can have scope properties, which do not seem to cause intervention effects. We have noted earlier the multiple NPI structures, which naturally are problematic for ISC (A):

(89) No student gave any teacher any apples.

(Jackson, 1994, p. 26)

There are two instances of an NPI in (89) and a negative quantifier, yet the sentence is well-formed. This complication is likewise noted by Linebarger (1980, 1987), and she attributes the multiple licensing of NPIs to either ISC (B) (as in Linebarger (1980)), or to a proposal that stipulates NPIs to have a capacity for licensing other NPIs. Even if we can stipulate that NPIs may license each other or further assume that ISC (B) licenses the multiple NPIs, there are still undergeneration problems. Jackson provides some examples which show that in certain configurations, existentials are allowed to be positioned in between the negation and the NPI:

(90) a. No doctor gave a patient any medicine he was allergic to.
b. No doctor gave patients any medicine they were allergic to.

(Jackson, 1994, p. 26)

Both sentences in (90) show a structure where the relativized NPI has a variable (i.e. *he/they*) that is bound by the indirect object existentials (i.e. *a patient/patients*), indicating that *any medicine* also scopes below the indefinites, as otherwise it is unclear how the pronouns can be bound. Consequently, NPIs are not in the immediate scope of negation:

(91) no x(doctor(x), some y(patient(y), some z(medicine(z) $\wedge$ allergic-to(y, z), should-give(x, y, z))))

(Jackson, 1994, p. 26)

Since the sentence has an LF arguably as in (91), it is unclear how ISC (A) is not violated. Of course, we can propose that ISC (B) saves the sentence due to a NI, but even via NI, the S′ representation should also have a NPI that is in the immediate scope of a negation, and it is even less clear what kind of NI could generate a reading that has the NPI in the immediate scope of negation, while moving the existential (i.e. *some y*) to some other position, and still keeping the "accurate" interpretation of the sentence.

Another shortcoming is noted by Guerzoni (2006), who shows that Linebarger's system runs into problems when it comes to differences between the strength of NPIs. For instance, we argued that the ISC (B) licenses the sentences that show "long-distance" licensing of NPIs, as in (86). Illustrated below again:

(92) I didn't say that you are dating anyone. (84-a)

a. LF:*Not [IP_1 I said [IP_2 that you are dating anyone]]

ISC (A) violation.

b. NI: I left open the possibility that you are not dating anyone.

(Guerzoni, 2006, p. 361)

As long as the distinction of NPI strength is not clarified, if ISC (B) licenses the sentence in (92), then the following sentences are also predicted to be licensed, contrary to the fact:

(93) a. *I didn't say that John has seen Mary in years.

b. *I didn't say that John likes Mary one bit (at all).

c. *I didn't say that I budged.
NI: I left open the possibility that John **hasn't** seen Mary in years/John **doesn't** like Mary one bit/John **didn't** budge.

(Guerzoni, 2006, p. 362)

We have earlier noted that NPIs like *in years* or *one bit* are more constrained than their "weaker" counterparts, such as *any* and *ever*, yet it is not obvious why NI can license "weak" NPIs, while it cannot license the stronger counterparts.[38]

[38] One way to account for the NPI strength could be to propose that "strong" NPIs may only be subject to ISC (A), thus their ill-formedness (93) can be excluded from ISC (B). But, then this may lead us back to the difficulties that ISC (A) faces, meaning if we find a structure that has a logical element in between the "strong"

Similar to Guerzoni's counter argument to ISC based on NI and NPI strength, Jackson mentions that Linebarger's fundamental drawback is the overgeneration problem that stems from the NI possibility of NPI licensing, meaning that there are many structures that are ungrammatical, yet predicted to be grammatical by ISC (B). One trivial case of such overgeneration is related to double negation. Every positive sentence entails its double negation, but positive sentences (usually) do not license NPIs:

(94) a. *John has any apples.
b. It is not that John doesn't have any apples.

(Jackson, 1994, p. 27)

The positive sentence in (94-a) entails the truth value of (94-b), yet the NPI is ill-formed in the former. If entailments and implicatures are able to license NPIs in the manner that is proposed by Linebarger, then we incorrectly predict (94-a) to be well-formed by virtue of entailing (94-b). There are a number of other overgeneration problems of ISC (B), which I will omit for reasons of space (see Jackson (1994); Guerzoni (2006); Homer (2021) among others for more shortcomings regarding ISC in general.).

To briefly summarize, ISC (especially ISC (A)) gives us a way of accounting for the so-called intervention effects, but at the cost of an overgeneration problem. Although ISC (A) allow us to capture the data in (82), the inclusion of ISC (B) for some apparent violations of ISC (A) (e.g. (84)) yields an NPI licensing theory that is too powerful (see also Zeijlstra (2022, p. 27) on the overgeneration problem of ISC (B)). Notwithstanding the shortcomings, I think the part of ISC (A) that states there cannot be logical operators between the licensor and the NPI seems to capture a considerable fragment of the intervention effects, but clearly, it requires a precise revision to define what constitutes a "logical" element for intervention, and also why these specific elements cause the anti-licensing, since some elements, like existentials and other NPIs, do not intervene.[39]

In the following section, I will briefly discuss the NPI licensing system that is proposed by Chierchia (2004, 2013), and then we will observe how Chierchia's system is argued to account for the intervention effects in question, in which the system appears to also give a reason why certain elements intervene for NPI licensing (e.g. UQs), while some (e.g. existentials) do not.

4.2 Chierchia and Scalar Implicatures

Previously, we have discussed the basics of Chierchia's (2004; 2006; 2013) theory of NPI licensing in a nutshell. Like we noted earlier, I will argue that the SI theory of Chierchia is able to account for the given intervention effects in Turkish (e.g. (5)). Now, let us go through the theory once again, this

NPI like *in years* and the negation, then we predict such a structure to be ungrammatical always, since NI would not be able save "strong" NPIs. Further, to reduce "strong" NPI licensing to ISC (A), we would have to clarify which elements are "strong" and "weak" in English, or how other strength levels, such as "superstrong" may fit into the picture.

[39] Homer (2021) and Zeijlstra (2022) notes that modalities also do not cause intervention effects:

(i) Nobody may read any book.

We observed the same behavior in Turkish NCIs as well when we discussed (78) and (79).

time in a bit more detail, so that we can observe how the system could account for the given problem (i.e. intervention effects). In essence, Chierchia derives the distribution of NPIs from their NPI-hood, rather than taking NPI licensing to be a primitive of grammar (Homer, 2021). In Chierchia's theory, NPIs are taken to be indefinites that introduce "obligatorily active grammaticized" alternatives to their structure. Such active grammaticized alternatives need to be *exhaustified*, which essentially means that such alternatives need to be integrated into the "meaning" of the given structure by operators that are proposed to be sensitive to these alternatives, where these operators can (basically) "see" such alternatives. There are few operators that are proposed within Chierchia's theory (e.g. the operator *E*), but for simplicity, I will focus on the covert and non-presuppositional counterpart of the exhaustifier *only* (O). As we have observed priorly, the operator O_{DA}, which is one variant of the exhaustifier O, is an operator that is defined over the subdomain alternatives and it negates the alternatives that are not entailed by the assertion. The examples from Szabolcsi in (28) and (29) illustrate the way O_{DA} works, which are given again below for convenience:

(95) # There are any cookies left.

a. Assertion: $\exists$x $\in$ D [cookies(x) $\wedge$ left(x)]
b. Alternatives: {$\exists$x $\in$ D$'$ [cookies(x) $\wedge$ left (x)] : D$'$ $\subseteq$ D}
c. Exhaustified: O_{DA} {$\exists$x $\in$ D$'$ [cookies(x) $\wedge$ left (x)] : D$'$ $\subseteq$ D} (contradicts assertion)

(96) There aren't any cookies left.

a. Assertion: $\neg\exists$x $\in$ D [cookies(x) $\wedge$ left(x)]
b. Alternatives: {$\neg\exists$x $\in$ D$'$ [cookies(x) $\wedge$ left (x)] : D$'$ $\subseteq$ D}
c. Exhaustified: O_{DA} {$\neg\exists$x $\in$ D$'$ [cookies(x) $\wedge$ left (x)] : D$'$ $\subseteq$ D} (no contradiction)

(Szabolcsi, 2018, pp. 4–5)

In (95), we see that there is contradiction, which yields an ill-formed structure, whereas there is no contradiction in (96), producing a grammatical structure. To see how we evaluate if there is contradiction or not in a sentence, let us briefly go over both sentences and observe how O_{DA} operates on both of them, and since we have replicated Szabolcsi's analysis earlier, I will be brief here. In (95), NPI *any* triggers the alternatives and O_{DA}, being an alternative sensitive operator, negates the subdomain alternatives that are not entailed by the assertion. So, in an upward entailing (UE) context like (95), we reach a logical contradiction, because, the assertion states that *there are any cookies left* (i.e. there is at least one/some cookie left), and it does not entail any of its alternative subdomains, such as *there are any cookies left on the table*. Therefore O_{DA} will negate all these alternatives that are triggered by *any*, and there will be no subdomain where the assertion *there are any cookies left* can be true (basically, if there are no cookies anywhere, then it is not possible for there to be some cookies left). Thus, in monotone increasing (i.e. UE) contexts like (95) we get an ungrammatical structure that stems from the logical error caused by the exhaustification of all the alternatives that are not entailed by the assertion. For the DE context like (96), a contradiction do not arise, since *there aren't any cookies left* entails all its subdomain alternatives, such as *there are no cookies left on the table*, et cetera. Since all the subdomains are entailed by the assertion, O_{DA} does not negate any of these alternatives, and there are no logical contradictions, so the sentence is grammatical (see Szabolcsi (2018) and Homer (2021) for a brief introduction to Chierchia's system).

The basics of Chierchia's theory of NPIs also give a reason for why NPIs tend to be "stronger" than typical indefinite counterparts (e.g. *a*), because a non-NPI indefinite does not introduce "obligatorily

active grammaticized" alternatives to incorporate into the meaning of the given structure, and as such, they tend convey a "weaker" meaning under DE contexts. Further, the exhaustification theory also explains why NPIs are licensed under DE contexts, as under non-DE environments, due to the presence of exhaustifier O_{DA} that negates all the alternatives that are not entailed by the assertion, the sentence is bound to be contradictory, and thus, ungrammatical (remember that for Chierchia, such contradictions yield ill-formedness).

Now that we have summarized Chierchia's theory of NPIs, we can return to the intervention effects, and examine how the implicature-based account of NPIs may account for them. As noted by Homer (2021), Chierchia observes that the logical operators that cause intervention effects are all strong scalar terms. For *and*, we can consider it to belong to the scale <or, and>, for *every*, <some, every>, etc.[40] Following this observation, Chierchia's proposal is that the strong scalar items trigger the so called *scalar implicatures* (SI) in DE environments (e.g. *every* triggers the weaker *some/a* correspondence). The triggered scalar implicatures are integrated into the meaning of the sentence, and when these implicatures are added to the assertion of the sentence, SIs disturb the DE nature of the given structure, and cause the NPI to be not licensed. In this manner, intervention effects are derived from scalar implicatures that are proposed to be present with strong scalar items that are within DE contexts.

Akin to Homer (2021), for the sake of simplicity and space, I will introduce the earlier version of Chierchia's theory (i.e. (Chierchia, 2004)), as I think it is more straightforward to follow and discuss (in the earlier versions, the exhaustification operators are not present and the feature checking is not introduced yet). In the SI theory, SIs are computed in constituents in a recursively bottom-up fashion. For a given expression E, the set of alternatives is represented as $[\![E]\!]^{ALT}$, and when there are no scalar elements in E, the interpretation of the alternatives (i.e. $[\![E]\!]^{ALT}$) is equal to the bare interpretation of E (i.e. $[\![E]\!]$). An expression can include more than one scalar element (e.g. *and* and *every*), however, SIs are computed locally, so when a scalar element enters the recursion, all of its alternatives are generated at that point in the derivation, and if another scalar element is present within the same structure, the SI that the new scalar element introduces do not compose with the SIs of the earlier items. Essentially, only the SI of highest scalar item will be available by $[\![E]\!]^{ALT}$. To illustrate this point, Homer gives the following example by Chierchia:

(97) a. some student smokes or drinks.
b. LF:[some student$_i$[t$_i$ smokes or t$_i$ drinks]]
c. $[\![$[t$_i$ smokes or t$_i$ drinks]$]\!]^{ALT}$ = {[smoke′(x$_i$) ∨ drink′(x$_i$)], [smoke′(x$_i$) ∧ drink′(x$_i$)]}
d. $[\![$[some student$_i$ [t$_i$ smokes or t$_i$ drinks]]$]\!]^{ALT}$ = {some′ (student′)(smoke′ ∨ drink′), every′(student′)(smoke′ ∨ drink′)}

In (97-d), we can observe that the previously generated SI in (97-c) is not part of the full expression; only the SI of the highest scalar element (in this case *some*) is provided by the given $[\![E]\!]^{ALT}$.

Further, grammar is proposed to generate a *strengthened* meaning for any given constituent γ, which is represented as $[\![\gamma]\!]^s$, where the strengthened meaning is the combination of the standard truth-conditional meaning and the scalar implicature:

[40] As also pointed out in Homer (2021), for some elements like *because*, it is not so straightforward to assume that they also belong to a scale, such as *and* or *every*. However, Chierchia takes *because*-clauses to correspond to conjunction, which means, if the conjunction proposal is on the right track, *because*-clauses may also be considered as scalar elements.

(98) $[\![\gamma]\!]^s = [\![\gamma]\!] \wedge \neg S_{[\![\gamma]\!]}\ [\![\gamma]\!]^{ALT}$

(Homer, 2021, p. 21)

The notation above essentially illustrates that the strengthened meaning of a given γ is the combination of its default meaning (i.e. $[\![\gamma]\!]$) and its scalar implicature (i.e. $\neg S_{[\![\gamma]\!]}\ [\![\gamma]\!]^{ALT}$). The critical point here is that, for NPI licensing, Chierchia argues that it is the strengthened meaning that is relevant. Now by assuming that NPIs are licensed via the computation of strengthened meanings, the intervention effects can be derived as in the following: the strong scalar items (e.g. *and/every*) generate *indirect scalar implicatures* under DE environments and they do not generate scalar implicatures in other contexts. The indirect scalar implicatures that are triggered by the strong scalar elements in DE contexts are proposed to be the locus of the intervention effects. For instance, in the following examples by Homer, we see that α is DE related to its position when we only look at the default meaning of the sentence, yet, if we look at the strengthened meaning of the sentence, then we see that α is not in a DE position:

(99) Not everyone understands α

a. [[Not everyone] α_1 understands t_1]
b. Not everyone understands things.
c. Not everyone understands simple things.
d. Not everyone understands things. $\Rightarrow$ Not everyone understands simple things.

(Homer, 2021, p. 21)

When we only consider the assertion of the sentences above, *not everyone understands things* entails *not everyone understands simple things*. This is because the assertion of *not everyone understands things* is that at least one person does not understand things, and the person that does not understand things, does not understand anything at all. Consequently, this person cannot understand simple things as well. Basically, when we look at the bare meaning of the sentences, the downward entailment holds in (99-d). Despite this, when we integrate the indirect scalar implicatures to generate the strengthened meanings, the downward monotonicity of (99-d) does not hold:

(100) a. $[\![\text{(99-b)}]\!]^s = \neg\forall x\ [\text{person}'(x) \rightarrow \text{understand}'(x, \text{things}')] \wedge \exists y\ [\text{person}'(y) \wedge \text{understand}'(y, \text{things}')]$

b. $[\![\text{(99-c)}]\!]^s = \neg\forall x\ [\text{person}'(x) \rightarrow \text{understand}'(x, \text{simple-things}')] \wedge \exists y\ [\text{person}'(y) \wedge \text{understand}'(y, \text{simple-things}')]$

c. $[\![\text{(99-b)}]\!]^s \not\Rightarrow [\![\text{(99-c)}]\!]^s$; $[\![\text{(99-c)}]\!]^s \not\Rightarrow [\![\text{(99-b)}]\!]^s$

(Homer, 2021, p. 21)

The representation in (100-a) shows us the strengthened meaning of (99-b), and we see that the integration of the triggered scalar implicature into the interpretation of the sentence yields the reading "there is at least one person who doesn't understand things and there is at least one person who understands things". So taking the strengthened meanings into account, (100-a) does not entail (100-b), since the latter basically means "there is at least one person who doesn't understand simple things and there is at least one person who understands simple things". Simply put, (100-a) is true in a world where there is one person who understands complex things, and the statement in (100-b) would be false in this world. Naturally, (100-b) also does not entail (100-a). Therefore, the position of α in (99-a) is not in a DE

environment due to the presence of the strong scalar element *every*, and this is argued to be the reason why NPIs are not licensed in such positions (viz. (80)).

Summing up, Chierchia's SI theory gives us an explanation for why intervention effects occur: the strong scalar elements may disturb the DEness of a position in a given structure, and cause the NPI to be anti-licensed (see Homer (2019, 2021); Guerzoni (2006) for a brief introduction to Chierchia's account of intervention effects). In the following section, I will introduce few shortcomings of the SI account of intervention effects, which will turn out to be rectifiable, and then I will move on to analyzing NCIs and intervention effects in Turkish by adopting the SI account.

4.2.1 Shortcomings of SI Theory

Although we will adopt the SI theory for giving an account for the intervention effects in Turkish, it might be fair to talk about some shortcomings of the said account. In order to keep this section brief, I will only focus on two complications regarding Chierchia's SI account of intervention effects. First complication is the collective predicate intricacy that is noted by Buccola and Crnič (2021) (e.g. *John didn't mix the soda and any whisky*). Second complication is the Turkish conjunction of double NCIs, which result in a well-formed structure (e.g. *hiçbir hoca ve hiçbir öğrenci okula gelmedi*). Before concluding though, I will mention a puzzle that is related to the intervention effects in question structures in Turkish, where we see a variety of intervention effects as well, but it is not quite clear how the SI theory, which is based on disruption of a DE environment, can account for such intervention effects.

Let us start with the observation made by Buccola and Crnič (2021).[41] Buccola and Crnič (2021) notes that, although the SI theory accounts for the intervention effect in (101-a), they argue that even though the SI theory predicts (101-b) to be well-formed, the SI theory also predicts an incorrect interpretation/reading for it:

(101) a. *John didn't drink the soda and any whisky.
b. John didn't mix the soda and any whisky.

(Buccola and Crnič, 2021, p. 4)

Their point is that, in (101-a), the presence of the strong scalar item *and* under the DE context triggers the SI that the weaker scalar alternative *or* is false (i.e. *John didn't drink the soda or any whisky* is false). After the trigger of the (false) scalar implicature, it is integrated into the meaning, and the sentence ends up having the interpretation that John either drank the soda, or any (i.e. some portion of) whisky. Clearly, the DE environment of the NPI is disturbed by the implicature, as "John drank either the soda, or any whisky", does not entail its subsets, such as "John drank either the soda, or any Irish whisky". Buccola and Crnič illustrate the lack of downward entailment with the following representation:

[41] I will propose an outline of an alternative account to the lack of intervention effects with NPI coordination in collective predicate structures, shortly after we go over Buccola and Crnič (2021).

(102) ¬(John drank the soda and some whisky) ∧ (John drank the soda or some whisky)
$\not\Rightarrow$
¬(John drank the soda and some Irish whisky) ∧ (John drank the soda or some Irish whisky)

(Buccola and Crnič, 2021, p. 17)

For the collective predicate in (101-b), they also propose that the DE is disturbed for the position of the NPI, if we follow their assumption in that *and* here also triggers the falsified *or* interpretation:

(103) ¬(John mixed the soda and some whisky) ∧ (John mixed the soda or some whisky)
$\not\Rightarrow$
¬(John mixed the soda and some Irish whisky) ∧ (John mixed the soda or some Irish whisky)

(Buccola and Crnič, 2021, p. 18)

At first glance, this may indicate that Chierchia's SI account of interventions might be undergenerating, since an NPI is licensed in a non-DE environment, however, Buccola and Crnič argue that the well-formedness of (101-b) can still be captured by Chierchia's (2013) system. In brief, they propose that the collective predicate example is predicted to be consistent within Chierchia's system, and therefore they argue that it is predicted to be grammatical as in (104):

(104) a. John didn't mix the soda and any whisky.
b. ¬(John mixed the soda and some whisky in D)
∧ John mixed the soda
∧ $\forall D' \subseteq D$: John mixed some whisky in D'
(Prediction: "John didn't mix the soda and any whisky" is acceptable)

(Buccola and Crnič, 2021, p. 19)

They attribute the consistency of (104) to "the pertinent scalar alternatives (including subdomain alternatives in Chierchia (2013)) not entailing the sentence with the NPI". Yet, then they note that even though the licensed NPI in (104) is predicted by the SI account of intervention effects, it predicts incorrect inferences for them. The sentence in (104) is predicted to have the interpretation "John mixed the soda and John mixed all the whisky" (i.e. the meaning in (104)), but, this sentence does not have this interpretation, rather it roughly means "John didn't mix the soda with any whisky". They go on to point to two possibilities as to why such inferences do not arise in Chierchia's system in order to account for the puzzle, but since these proposals seem to be speculative in nature, I will omit them (see Buccola and Crnič (2021, pp. 17–20) for the related analysis and the proposals).

Notwithstanding the successes and the complications of the analysis in Buccola and Crnič (2021), I would like to propose an alternative account for the well-formedness of NPI coordination with collective predicates that deviate from the reasoning of Buccola and Crnič. This alternative account that will be proposed here seems to be quite straightforward, and arguably, it follows the "spirit" of the fundamental idea of the scalar elements. In Chierchia's system, the scalar elements belong to a scale, as we mentioned a few times. *Every* belongs to <some, ..., every>, and *and* belongs to <or, and>, etc., and the reason for such characterization of scales is basically that some elements, like *and*, behave "stronger" (perhaps also "higher") than their counterpart, such as *or*, in typical non-negative sentences:

(105) a. Harry and Jane came.
b. Harry or Jane came.

The reason that *and* is stronger is related to the fact that (105-a) entails (105-b), or in other words, in a given model where (105-a) is true, will always be true in (105-b), yet the inverse does not hold. The truth of the *or* counterpart in (105-b) does not entail the *and* counterpart. Same reasoning can be applied to *every*, *some*, *two*, and so on. However, although the *and* in collective predicates may look like a typical *and*, it does not exactly belong to a scale in the same manner that it does in (105). We can illustrate this with the following example:

(106) a. John and Bill collaborated on this project.
b. John or Bill collaborated on this project.

The truth of (106-a) does not entail, or say anything about the truth value of (106-b). In this regard, it is not exactly clear what kind of scale that the *and* that coordinates the relevant arguments in collective predicates belongs to, since it does not seem to have any kind of relation with *or*. This analysis would mean that *and*-coordination in collective predicates does not (at least obviously) belong to a scale, and in turn, if the collective predicate *and* is not part of a scale, then it cannot be considered as a scalar element, thus we would not expect intervention effects anyway. Clearly, the alternative analysis I provided here for the collective predicates and the intervention effects needs more elaboration, but it does look as if the given *and*-coordination in collective predicates do not constitute a scalar element since *or* does not behave as if it is scalemate with the collective predicate *and*. At least, their scalemate behavior is not equivalent in collective and non-collective predicate structures. Essentially, more elaboration is required before we take collective *and* to belong to the same scale as the non-collective *and*, and moreover, if the outline of my proposal is on the right track, then the lack of intervention effects under collective predicate structure are not complications for the SI account of Chierchia (2004, 2013), rather, they are actually predicted by it.

In essence, for the collective predicate puzzle, Buccola and Crnič state that the collective predicate sentence in (104) is predicted to be grammatical under Chierchia's system, but it is also predicted to have a meaning that can be paraphrased as "John mixed the soda and John mixed all the whisky", yet this meaning is not present with the structure, indicating that sentences like (104) can be considered as a (perhaps modest) complication for the SI theory of intervention effects. However, as an alternative to their analysis, I argued that *and* in collective predicates do not belong to a scale, and thus we would not expect it to cause intervention effects for NPIs, since only strong scalar elements are proposed to cause such anti-licensing effects, meaning that under this alternative view, the well-formedness of NPI coordination with collective predicates do not cause a complication for the SI theory.

The second complication of SI theory of intervention effects is related to some Turkish data that allow conjunction of double NCIs to be well-formed:

(107) Can hiçbir öğrenci ve hiçbir hoca-ya güven-me-di.
Can no student and no teacher-DAT trust-NEG-PAST.3sg
'Can trusted no teacher and no student.'

Now let us assume the ideas of Chierchia and see why the sentence above is a puzzle for a SI theory of intervention effects, at least for its application to Turkish. To streamline the point, initially, we assume that DEness is necessary for NCIs in Turkish. Then, we further assume that the presence of the strong scalar term *ve* (i.e. *and*) disturbs the DEness of its coordinated elements due to SIs, where the weaker scalar counterpart of *veya* (i.e. *or*) is falsified and integrated into the meaning, which is illustrated below:

(108) a. Can öğrenci-ler ve hoca-lar-a güven-me-di.
Can student-PL and teacher-PL-DAT trust-NEG-PAST.3sg
'Can didn't trust students and teachers.'
b. SI: ¬(Can trusted students and teachers) ∧ (Can trusted students or teachers)
'Can either trusted students, or teachers.'[42]

Assuming such a SI to be accessible in TR for the sake of the discussion (which is possibly a topic on its own), we expect the following sentence to be not entailed by (108):

(109) a. Can öğrenci-ler ve kötü hoca-lar-a güven-me-di.
Can student-PL and bad teacher-PL-DAT trust-NEG-PAST3.sg
'Can didn't trust students and bad teachers.'
b. SI: ¬(Can trusted students and teachers) ∧ (Can trusted students or teachers)
'Can either trusted students, or bad teachers.'

Again, assuming such an SI to be accessible, we expect the DE to not hold from (108) to (109), since "Can either trusted students, or teachers" does not entail "Can either trusted students or bad teachers". Thus, such an analysis of data according the the SI theory predicts the presence of an NCI (i.e. a type of NPI) to be ill-formed when it is coordinated by *and*. However, as we see in (107), conjunction of double NCI is well-formed, even though their positions are in a non-DE context, that is if we analyze these data as triggering the given SIs. I will discuss more on *and*-intervention in Turkish later on, but for now, it appears that in order to adopt the SI theory to Turkish data, we need some modifications to either the theory, or the data, and as we will observe, by representing the data in the way native speakers actually interpret them, SI theory is able to account for the well-formedness of double NCI coordination.

There is one last set of data that I would like to illustrate for the apparent shortcomings of SI theory of intervention effects. These data are related to the intervention effects that are present under non-DE environments, mainly the question structures. Putting intervention effects aside for a moment, as Chierchia himself states, he does not say much about NPIs in the question structures (among others like *before*-clauses, comparatives etc.), but he states that he is optimistic about the exhaustification based approaches to such structures (Chierchia, 2013, p. 56). Naturally, this indicates that his theory requires more elaboration for NPI licensing under question structures overall, even if we exclude the intervention effects. Nevertheless, without getting into how question structures license negative dependents within Chierchia's system, in the following examples, we see a number of ill-formed structures with

[42] I think it should be noted here that this reading is not exactly accessible unless there is some contextual force, and the sentence has the salient reading *Can helped neither students nor teachers*. The lack of this SI seems to be related to the differences between Turkish *ve* and English *and* in negative structures. We will elaborate on this when we analyze *and*-intervention in Turkish.

NCIs, where the structure contains a valid licensor for the NCI, but the structure is not well-formed due to the presence another element (i.e. the intervener):

(110) a. Can kimse-ye yardım et-ti mi?
Can no.one-DAT help AUX-PAST Q
"Did Can help anyone?"
b. ??Her hoca kimse-ye yardım et-ti mi?
Every teacher no.one-DAT help AUX-PAST Q
Unavailable: "Did every teacher help anyone?"
c. ??Üç hoca kimse-ye yardım et-ti mi?
Three teacher no.one-DAT help AUX-PAST Q
Unavailable:"Did three teachers help anyone?"

The data above provides a puzzling picture.[43] The sentence in (110-a) is given as a starting point, which shows that NCIs like *kimse* are fine in question structures. But, the presence of a higher quantifier, whether existential,[44] or universal, results in ill-formed structures. The reason why the intervention effects in question structures are puzzling for the SI account can be summarized as follows: so far for the SI theory, we argued that the disruption of the DEness by the strong scalar terms is the cause of the ill-formedness in intervention structures, since NPIs produce contradictions under non-DE environments. But, question structures are not DE (at least traditionally). So, what kind of disturbance would yield *kimse* to be anti-licensed in (110-b) and (110-c) is not obvious, due to the fact we cannot straightforwardly attribute it to the disturbance of the DEness. Even somehow if we could argue that question structures are also DE, then we would have to explain why in (110-c) there is intervention by a numeral, whereas numeral intervention is not present in negative sentences like the following:

(111) Üç hoca hiçbir öğrenci-ye yardım et-me-di.
Three teacher no student-DAT help AUX-NEG-PAST.3sg
'Three teachers helped no students.'[45]

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[43] As a non-native, I deliberately avoided using English sentences to illustrate intervention effects in question structures. Although the English data are quite odd to me, I do not know if native speakers also judge such sentences odd as well, and this is why I focus on Turkish data. Some English data are below for the sake of illustration:

(i) a. ?Did everyone help anyone?
b. ?Did three students help anyone?
c. ?Did John help any teacher and two students?

[44] Interestingly, the following sentence with the Ablative-Possessive variation of the numeral intervener is fine:

(i) Hoca-lar-dan üç-ü kimse-ye yardım et-ti mi?
Teacher-PL-ABL three-POSS.3sg no.one-DAT help AUX-PAST Q
'Did three of the teachers help anyone?'

It is unclear to me why there is an asymmetry of judgment between the ABL-POSS numeral (e.g. "hocalardan üçü") and the ADJ-N numeral (e.g. "üç hoca") when it comes to intervention, but it is worth noting.

[45] This sentence appears to be ambiguous in Turkish. One reading can be paraphrased as: "There are three teachers, such that, they did not help any students. (i.e. teacher $>$ $\neg$ $>$ student)". The other reading is essentially equivalent to "there is no student that was helped by three teachers. (i.e. $\neg$ $>$ teacher $>$ student)". Since both readings are seemingly available, we see that neither one shows intervention effects, meaning that the given numeral intervention is not present in either reading.

So briefly, intervention effects under interrogative structures challenge SI theory of intervention effects considering that question structures are not self-evidently DE. Therefore, it is not clearly obvious why some scalar items might interfere with the NCI licensing, since there is no DEness to disturb. As expected, there may be some ways to account for the interrogative interventions in question structures within the SI theory (or more generally the exhaustification theory), especially if we follow the proposal that question structures can be considered as DE, as is proposed by Nicolae (2015) and similar work. Then, all we would have to explain would be the asymmetry between structures like (111) and (110-c). One other possibility would be to argue that some types of NPIs (and NCIs) do not yield contradictions under question structures in Chierchia's system (perhaps related to, or completely independent from the supposed DE nature of questions), whereas such NPIs cause contradictions under other types of non-monotonic or UE contexts. Accordingly, we would predict these kinds of NPIs to be well-formed in yes/no questions. Thus, we would only need to account for why scalar elements also intervene in question structures, since the contradictions cannot be (straightforwardly) attributed to the disruption of DE by SIs, but of course, this does not mean there cannot be other reasons for contradictions. Such ideas obviously would require a considerable discussion and justification, and it is not in the scope of this study, but it could shed light into why question and negation structures license NPIs, and why similar intervention effects (with small differences) are present in both question and negation structures (see Nicolae (2015) and Guerzoni and Sharvit (2007) for a detailed analysis of question structures with NPIs).

To wrap things up, we have seen two main difficulties regarding the SI theory of intervention effects: (i) the collective predicate difficulty that is discussed in Buccola and Crnič (2021), and (ii) the well-formedness of Turkish coordinated NCIs under negation. For (i), I have offered an alternative analysis of the data that would fit the theory, since the relevant *and* in collective predicates do not seem to behave as if it is part of a scale in the same manner that non-collective *and* does. The NCI coordination in (ii) seems puzzling, but there is a possible representation of *ve* (i.e. *and*) that is based on the actual readings of *ve* under negation structures that could also fit with the SI theory, and we will detail it when we get to the analysis of intervention effects in Turkish. Lastly, I discussed the intervention effects that are present in question structures in Turkish, which are also puzzling since question structures are not considered to be DE to begin with, hence what kind of disruption by scalar items can cause the aforementioned intervention effects requires elaboration.

Since we will adopt the SI theory to give an account for the Turkish intervention effects with NCIs, I will not analyze intervention effects under question structures, as the system in Chierchia (2004, 2013) does not exactly capture questions. However, as Chierchia himself puts it, if the exhaustification based theories turn out to be adequate in capturing NPI/NCI licensing under interrogatives as well, then we can adopt the revised version of the theory in order to capture the intervention effects in question structures in Turkish. Nevertheless, as of now, I do not know if any theory based on the exhaustification approaches are able to account for NPI licensing under question structures, and so I have to leave the analysis of intervention effects in interrogatives to further studies (e.g. (i)). But still, the SI theory is able to capture a considerable fragment of Turkish intervention effects under negative structure, and that is what we will focus on.

CHAPTER 5

INTERVENTION EFFECTS IN TURKISH

In order to discuss the intervention effects in Turkish (e.g. (5)), I think we can start by examining the analysis of Kelepir (2001) first, since it looks to be the only mainstream study that talks about the given effects. After that, we will move on to its complications and show that, since she adopts Linebarger's (1980; 1987) theory (i.e. ISC), Kelepir's analysis also faces similar problems that ISC faces.

5.1 The Immediate Scope Constraint and Kelepir (2001)

Kelepir (2001) proposes two ideas for Turkish NCIs: (i) she argues that Turkish NCIs are subject to the ISC of Linebarger (1980, 1987); and (ii) she argues that negation in Turkish is able to be interpreted at different positions in a given structure. She analyzes structures with *her* (i.e. 'every'), quantificational adverbs, reason-clauses (i.e. *because*-clauses), and NPIs. Let us go over some of her examples to understand her analysis of NPIs and intervention effects in Turkish. In the following sentences, Kelepir states that ISC can explain the asymmetry of grammaticality:

(112) a. *Herkes kimse-yi gör-me-di-Ø.
everybody anybody-ACC see-NEG-PAST-3sg

b. Kimse herşey-den ye-me-di-Ø.
anybody-nom everything-ABL eat-NEG-PAST-3sg
'Nobody ate from everything.'

(Kelepir, 2001, p. 132)

So in (112-a), Kelepir (2001) argues that the unacceptability stems from *herkes* being forced to scope above negation, as negation needs to scope directly above NCI to due to ISC (viz. (83)). However, since universal quantifier like *her* or *herkes* cannot (usually) be interpreted above negation, the resulting structure (i.e. LF) becomes uninterpretable (i.e. $*\forall > \neg >$ NCI). On the other hand, in (112-b), since *kimse* precedes *herkes*, the NCI is assumed to scope above the universal quantifier, therefore, *kimse* can scope below negation without an intervener, so neither ISC nor the inherent scope requirement of *her* (i.e. scoping below negation) is violated (i.e. $\neg >$ NCI $> \forall$). One critical point in her analysis is that Kelepir assumes that the positions of the subjects and objects in (112) are fixed, while negation can be interpreted at different nodes. She also argues that *scope rigidity* might be in effect here, since otherwise, the quantifiers might have moved around at LF to not violate any conditions, for instance, *kimse* could have raised above *herkes* in (112-a) to scope directly below the negation, which

would satisfy both the scope requirement of *her* and ISC (see chapter 3 of Kelepir (2001) for her analysis of scope rigidity in Turkish). However, I argue that just by fixing the scope of negation over both arguments, we can acquire an empirically equivalent analysis. Let us assume that negation is interpreted above both arguments, and let us further assume that *her* needs to scope below negation and *kimse* is constrained by ISC. By following these assumptions, we can state that the ill-formedness of (112-a) stems from ISC violation, since *herkes* scopes above *kimse* by preceding it, and *herkes* also scope below negation due to our assumption that negation is interpreted above both arguments. Clearly, as there is an intervener between *kimse* and negation, structure is ill-formed due to the violation of ISC. Similarly in (112-b), since *kimse* scopes over *herşey*, neither ISC is violated, nor the inherent scope requirement of *her* is violated, thus the sentence is well-formed. Although my analysis is almost equivalent to Kelepir (2001), we do not have to stipulate that negation can be interpreted at different positions, we only have to stipulate that there is a fixed interpreted position, which may correspond to its syntactic position, and I think fixing the scope of negation to a single position appears to be the simpler analysis.

Another intervention data is related to the interaction between NCIs, negation, and *bazı*, which is argued to be a PPI. Her examples are below:

(113) a. Hasan bazı insan-lar-a hiçbir resm-i göster-me-di-Ø.
Hasan some person-PL-DAT any picture-ACC show-NEG-PAST-3sg
'Hasan didn't show any pictures to some people.'

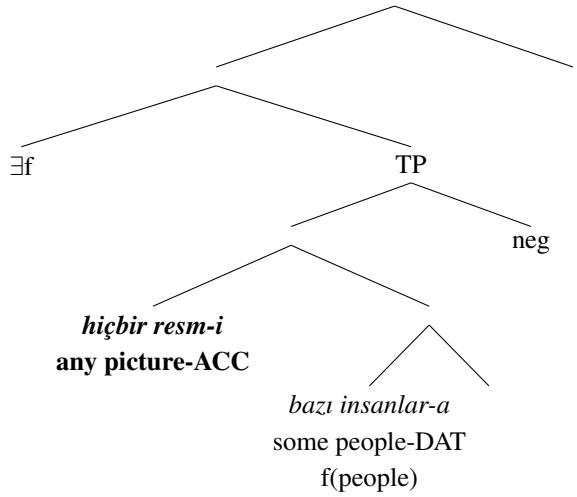
b. *Hasan hiçbir resm-i bazı insan-lar-a göster-me-di-Ø.
Hasan any picture-ACC some person-PL-DAT show-NEG-PAST-3sg
Intended reading: 'Hasan ddin't show any pictures to some people.'

c. Hasan **hiçbir resmi** adamlar-a göster-me-di.
Hasan **any picture-ACC** men-DAT show-NEG-PAST-3sg
'Hasan didn't show any pictures to the men'.

(Kelepir, 2001, p. 139)

She proposes that (113-a) is well-formed as the negation can be interpreted at a position that is in between the PPI and the NCI, so neither the scope requirement of PPI nor the ISC for the NCI is violated. The sentence in (113-b) is argued to provide an interesting situtation. Kelepir argues that $\exists$-quantifier over choice functions binds an existential like *bazı*, and these choice functions must be generated above the subjects but below the highest possible position for the negation. She proposes the following structural representation for (113-b), which should allow the wide scope of PPI over negation, but the sentence is ill-formed:

(114)



(Kelepir, 2001, p. 139)

In the tree diagram above, there is no obvious reason why the sentence would be uninterpretable. There is nothing in the middle of the negation and the NCI. Further, there is nothing obvious that would block the wide scope interpretation of the existential quantifier. To account for this, Kelepir claims that the combined NCI and negation act as an intervener for the existential operator and its variable, thus the wide scope reading is unavailable, and since PPIs need to be interpreted above negation, the sentence is bound to be uninterpretable.

Next and the last example of Kelepir that we will go over is related to numerals. Her analysis predicts that when an NCI precedes a numeral, the numeral will be interpreted below the negation, even if the given numeral can be interpreted above negation in other structures. On the other hand, if the numeral precedes the NCI, then to not violate ISC, said numeral needs to be interpreted above negation. This prediction is argued to be supported with the examples below:

(115) a. Kimse bir arkadaş-ım-ı davet et-me-miş.
anybody a friend-1.POSS-ACC invite-NEG-EVI
(i)only reading: Nobody invited any friend of mine.
(ii)*A friend of mine is s.t. nobody invited her/him

b. Bir arkadaş-ım kimse-yi davet et-me-miş.
A friend-1.POSS anybody-ACC invite-NEG-EVID
'A friend of mine didn't invite anybody.'

(Kelepir, 2001, pp. 141–142)

The reason that (115-a) does not have the wide scope reading for the numeral is attributed to her proposal that the existential quantifier over choice functions (i.e. ∃f) is inserted above the subjects. So, if ∃f is interpreted above negation, then we would have an equivalent intervention effect that we see in (114), as the negation and the NCI would intervene for the binding of the numeral variable (i.e. *∃f $>$ ¬ $>$ NCI $>$ f(num)), therefore the only possible interpretation that remains is the one where

existential takes narrow scope regarding negation (i.e. $\neg > \exists f > NCI > f(num)$).[46] Furthermore, the ordering of the subject numeral and the object NCI in (115-b) should be ambiguous in Kelepir's analysis, but, as she herself notes, it is not. Only the wide scope reading is allowed, where the $\exists f$ is going to be inserted right above the subject *bir arkadaşım* (based on her claim regarding the position of $\exists f$), and since negation can be interpreted at different positions, it can be interpreted lower than the subject but higher than the object NCI, resulting in an LF that does not violate any conditions (i.e. $\exists f > f(friend) > \neg > NCI$). Nevertheless, the narrow scope reading of the existential should also be present, as negation should also be able to scope over the given existential, but said reading is not available. The lack of the narrow scope reading of the existential is ascribed to ISC, since even if negation can be inserted at a higher position than the existential, the $\exists f$-f pair is proposed to intervene between the NCI and its licensor, thus causing an ISC violation (i.e. $*\neg > \exists f > f(friend) > NCI$).

Summing up, Kelepir (2001) argues that Turkish NCIs are constrained by the ISC of Linebarger (1980, 1987), such that the NCI needs to be in the scope of a negation without an intervener. She claims that (i) universal quantifiers, and (ii) the existential quantifiers with the variables they bind constitute interveners for NCIs. Moreover, Kelepir states that the choice function variables are also restricted by a constraint similar to ISC, as when the negation and NCI scope in between the function and its variable, the wide scope reading of said existentials are not possible. Although her work appears to be the only study that tackles intervention effects in Turkish in a comparatively comprehensive manner, there are two immediate shortcomings:

(116) Shortcomings of ISC and Kelepir (2001) for Intervention Effects in Turkish

a. First shortcoming is related to the lack of the analysis of other kinds of intervention data that we see in (5), such as the coordination or the attraction to focus intervention;

b. Second shortcoming is about using only the part A of ISC, in which she states that part B (i.e. (85)) is to account for "overtly non-negative environments", and as she does not focus on such environments, Kelepir does not discuss the part B (Kelepir, 2001, p. 131).

Now let us go over the shortcomings of her analysis.

5.1.1 Shortcomings of ISC

We have priorly noted some of the complications regarding ISC in general, so all that discussion can be pretty much reflected here for Turkish NCIs straightforwardly. Still though, especially considering Kelepir (2001), there are at least two points that we still need to go over for the application of ISC to Turkish. First, even though Kelepir's work is able to account for a considerable fragment of Turkish negative dependency behavior, there are some structures that do not straightly follow from her analysis, such as the coordination intervention that we considered earlier (e.g. (5-b)), or the focus interventions (e.g. (5-c), (i) etc.). For instance, in Linebarger (1980, 1987), the conjunction *and* is taken to be an intervener, so why would in Turkish the coordination of two NCIs is fine, whereas the coordination of NCI and another type of NP is ill-formed?

[46] The LF proposal for (115-a) includes the existential quantifier over choice functions in between the negation and the subject NCI, which entails that such functions do not constitute logical operators for the sake of ISC, as otherwise we would expect an LF configuration like $\neg > \exists f > NCI > f(num)$ to violate ISC. See (Kelepir, 2001, p. 141) for the proposed structure and the discussion in more detail.

(117) a. *Hiçbir hoca ve iki öğrenci gel-me-di.
no teacher and two student come-NEG-PAST.
Unavailable:'It is not the case that any teachers and two students came'
b. Hiçbir hoca ve hiçbir öğrenci gel-me-di.
no teacher and no student come-NEG-PAST
'No teacher and no student came.'

Now let us put the ISC part A to test here and try to explain the asymmetry. ISC (A) states that there should be no logical operator between the negation and the NCI. So, in (117-a), we actually trivially account for the ill-formedness, since the logical operator *ve* (i.e. *and*) intervenes between the negation and the NCI, thus the ill-formedness is predicted. However, if we follow such an analysis, then we also predict (117-b) to be also ungrammatical, obviously contrary to the fact. In this sense, adopting ISC part A without any alterations to either the theory or data undergenerates, as there is a well-formed structure that is not predicted by our theory. As always, there could be ways to account for the asymmetry by utilizing ISC, but I will not pursue it here. Nevertheless, as we will see later on, I am going to claim that the asymmetry is not precisely related to intervention effects to begin with, rather it is about the constraints on coordination of NPs under negation overall, which will mean that the apparent intervention effect that we see in (117-b) will be derived from other constraints regarding the coordination under negation.

The second shortcoming of ISC part A is about configurations where there are logical elements in between the negation and an NCI. One instance of this was given in (78) and (79), where a modality was in the middle of the licensor and the NCI. Another example would be multiple NCI structures. An extreme example is given below:

(118) Hiçbir hoca hiçbir öğrenci-ye hiçbir kitab-ı hiçbir zaman hiçbir yerde
no teacher no student-DAt no book-ACC no time no place
ver-me-yecek.
give-NEG-FUT
'No teacher will ever give any student any book in any place.'

Since NCIs are logical elements that can have scope properties, it is unclear why ISC would not rule this structure out. One way of accounting for this would be to perhaps stipulate that the presence of more than one negative dependent are interpreted as a single element, but such a proposal would need to be precisely formulated before we can argue that the "fusion" of the negative dependents is a plausible analysis for (118).

To conclude, even though the analysis in Kelepir (2001) appears to be the most comprehensive study regarding the intervention effects in Turkish, it still faces the same problems that plagues ISC. Unless what is classified as logical element for the sake of ISC is precisely defined, it is bound to overgenerate, as there are a variety of grammatical structures in which a scope bearing element is situated in between the negative dependent and negation at LF.

In the next section, since there appears to be no study that adopts the SI theory for the relevant intervention effects in Turkish, we are unable to discuss the successes and shortcomings of its prior application for the given problem. So, we will directly move on to adopting the account for the Turkish data to see how far it can go.

CHAPTER 6

AN SI BASED ACCOUNT OF INTERVENTION EFFECTS IN TURKISH

In the scalar implicatures (SI) account of intervention effects, we noted first that SIs are recursively computed in a bottom-up manner, and that a triggered SI does not compose with an earlier SI, meaning only the highest scalar element will be available by $[\![E]\!]^{ALT}$. Additionally, grammar is proposed to generate a strengthened meaning that is the combination of the standard truth conditional meaning and the scalar implicature (i.e. $[\![\gamma]\!]^s = [\![\gamma]\!] \wedge \neg S_{[\![\gamma]\!]}\ [\![\gamma]\!]^{ALT}$). We further noted that for Chierchia (2004), NPIs are licensed by these strengthened meanings. Moreover, it is argued that the strong scalar items (e.g. *and/every*) triggers scalar implicatures under DE contexts (they do not trigger SIs in other contexts), and these triggered implicatures are the reason for the intervention effects, since the triggered scalar implicatures end up breaking the DE nature of the given structure (weak scalar items (e.g. *a/some/or*) are argued to cause SIs in positive environments, but not in DE contexts. See Chierchia (2004, 2013); Homer (2019, 2021) for more on intervention effects under the SI/exhaustification theory). Now that we have briefly reminded of the system we will adopt, we can start analyzing the intervention effects in Turkish.[47]

6.1 Intervention by *Her*

In the following sentence that is based on (99), we can see that the DE nature of the assertion is not disturbed by a universal quantifier when we do not include the SIs:

(119) Her hoca α sev-me-z.
Every teacher α like-NEG-AOR
'Not every teacher likes α'

a. [Her hoca [α] sev-me-z].
[every teacher [α] like-NEG-AOR]

b. Her hoca öğrenci sev-me-z.
Every teacher student like-NEG-AOR

[47] As a reminder, I should point out that I will utilize the theory put forward in Chierchia (2004) in this chapter, since it appears to be more straightforward to follow and adopt compared to the more recent work found in Chierchia (2013). I will have to leave an investigation based on Chierchia (2013) to a future occasion for pragmatic reasons, mainly due to time constraints.

c. Her hoca tembel öğrenci sev-me-z.
Every teacher lazy student like-NEG-AOR

d. Her hoca öğrenci sev-me-z. ⇒ Her hoca tembel öğrenci
Every teacher student like-NEG-AOR ⇒ every teacher lazy student
sev-me-z.
like-NEG-AOR
'Not every teacher likes students.' ⇒ 'not every teacher likes lazy students.'

If we only look at the assertions, the DE holds in (119-d), because for the antecedent of the entailment to be true, there needs to be at least one teacher that does not like students at all, and therefore this teacher also does not like any lazy students as well. However, when we add the SI into the meaning, then we see that the DE is disturbed by the presence of the UQ *her*:[48]

(120) a. $[\![(119\text{-b})]\!]^s = \neg\forall x\ [\text{teacher}'(x) \rightarrow \text{like}'(x, \text{student}')] \wedge \exists y\ [\text{teacher}'(y) \wedge \text{like}'\ (y, \text{student}')]$

b. $[\![(119\text{-c})]\!]^s = \neg\forall x\ [\text{teacher}'(x) \rightarrow \text{like}'(x, \text{lazy-student}')] \wedge \exists y\ [\text{teacher}'(y) \wedge \text{like}'\ (y, \text{lazy-student}')]$

c. $[\![(119\text{-b})]\!]^s \not\Rightarrow [\![(119\text{-c})]\!]^s$; $[\![(119\text{-c})]\!]^s \not\Rightarrow [\![(119\text{-b})]\!]^s$

Above, we see the strengthened meanings of (119). In (120-a), the strengthened meaning of *not every teacher likes a student/students* is given, which essentially corresponds to *not every teacher likes a student/students, but there is one teacher that likes a student/students*. When we consider this reading of (119-a), then we can see that it does not entail (119-b), because the former representation is true in a world where at least one teacher likes a student, and this student does not have to be a lazy student. So, as shown in (120-c), the downward entailment does not hold from (119-b) to (119-c) and vice versa.

The analysis above, which is essentially equivalent to the analysis in (99), means that the DE is disturbed in the object position in (119), and if the DE is disturbed, then regardless if Turkish NCIs need AA or DE contexts for licensing, it is predicted to be ungrammatical, since DEness is necessary for AAness (viz. figure 1). We have seen priorly that this prediction is confirmed by data like below:

(121) */??Her hoca hiçbir öğrenci-ye yardım et-me-z
Every teacher no student-DAT help AUX-NEG-AOR
Unavailable:'Not every teacher helps any student.'

To see the disruption of DE, we can represent the strengthened meaning of (121):

[48]The same analysis can be extended to other seemingly universal quantifiers in Turkish, such as *bütün* (i.e. "whole/all") and *tüm* (i.e. "whole/all"):

(i) */??Bütün hoca-lar hiçbir öğrenci-ye yardım et-me-di.
All teacher-PL no student-DAT help AUX-NEG-PAST.3sg
Unavailable:'All teachers helped no student.'

(ii) */??Tüm hoca-lar hiçbir öğrenci-ye yardım et-me-di.
All teacher-PL no student-DAT help AUX-NEG-PAST.3sg
Unavailable:'All teachers helped no student.'

Equivalent intervention effects are also present with these UQs as well.

(122) $[\![(121)]\!]^s = \neg\forall$x [teacher′(x) → help′(x, student′)] ∧ ∃y [teacher′(y) ∧ help′(y, student′)]

The representation in (122) is a simplified version of the strengthened meaning of the sentence in (121). The representation shows us that the object is not in a DE context anymore, since it does not necessarily hold true when we substitute the object *hiçbir öğrenci* with its subsets (excluding the ill-formedness of (123-a) for now):

(123) a. */??Her hoca hiçbir tembel öğrenci-ye yardım et-me-z.
Every teacher no lazy student-DAT help AUX-NEG-AOR
Unavailable:'Not every teacher helps any lazy student.'
b. $[\![(123\text{-a})]\!]^s = \neg\forall$x [teacher′(x) → help′(x, lazy-student′)] ∧ ∃y [teacher′(y) ∧ help′(y, lazy-student′)]
c. $[\![(121)]\!]^s \not\Rightarrow [\![(123\text{-b})]\!]^s$; $[\![(123\text{-b})]\!]^s \not\Rightarrow [\![(121)]\!]^s$

The strengthened meaning in (122) does not constitute a DE context for the object (i.e. *hiçbir öğrenci*), because, the logical representation refers to a situation that is true when there is at least one teacher who did not help a student and there is at least one teacher who helped a student. Just like some of our earlier examples, the truth of (122) does not entail (123-b), since the latter is true only in a model where there is at least one teacher who helped a *lazy* student, but clearly, (122) can be true in a model where a teacher helped a *hardworking* (i.e. non-lazy) student, which means that (122) is no longer a DE environment due to the fact that there are some subset expressions of (122), as in (123), that are not entailed by (122). As NCIs require to be in a DE context to be licensed (i.e. to be non-contradictory), the disruption of DEness by the universal quantifier causes the NCI to be anti-licensed. Thus, the intervention effect that we see with *her* in (121) is derived from the SIs in the sense that the theory do not propose anything specific for intervention effects, rather the SIs are a natural behavior due to the properties of NCIs and strong scalar elements, where NCIs, roughly speaking, require DE environments and strong scalar items may disturb the DEness of the structures that they are in.

What about sentences where the NCI object is scrambled to a higher position than the universal quantifier subject? In (124) we see a sentence that has the NCI object to the left of the universal quantifier subject, but the sentence is grammatical. The reading is equivalent to "there is no student that was helped by every teacher".

(124) a. Hiçbir öğrenci-ye her hoca yardım et-me-di.
no student-DAT every teacher help AUX-NEG-PAST.3sg
'No student was helped by every teacher'
b. Assertion: ¬∃x[student′(x) ∧ ∀y(teacher′(y) → help′(y, x)]

The representation of the assertion above aims to capture the intuition that there is not even a single student who was helped by all teachers in (124-a), and this is represented by scoping the existential directly below the negation in (124-b). Taking the representation to be accurate, then the SI theory predicts the well-formedness of the sentence in (124), since as mentioned in Guerzoni (2006, p. 394), within the implicature approach developed by Chierchia (2004), the SI that disrupts the DEness will be triggered by a strong scalar item only when the strong element is in the immediate scope of the DE operator. In other words, when the structure has a configuration like ($\neg > \forall > NCI$), then UQ

will trigger the SI and DEness will be disturbed, whereas if the structure has a configuration such as ($\neg > NCI > \forall$), the SI of UQ will not be triggered and thus DEness will not be disturbed. So, assuming that the universal quantifier is not in the immediate scope of the DE operator as in (124-b), the SI of the universal quantifier (i.e. the negated existential counterpart) will not be triggered, thus the DEness of the structure will not be disturbed by the presence of the given strong scalar element (i.e. *her*). Since the DEness will not be disturbed, there is no reason for the intervention effect, and the sentences in which the strong scalar item is not in the immediate scope of the DE operator are predicted to be well-formed, and the sentence in (124) appears to be in line with the prediction. Basically, when the strong scalar item is not in the immediate scope of the DE operator as in the representation (124-b), it is argued to not trigger the scalar implicature (i.e. the indirect implicatures) that disturbs the DEness of the given structure, so the strengthened meaning, which is the level of representation/computation that is relevant for the licensing of NPIs/NCIs, will retain its DEness, and NPIs in such structures will be well-formed. The representation below can be thought as the strengthened meaning of (124-a) that is relevant for the licensing of the given NCI, where the strengthened meaning is equivalent to the plain meaning (i.e. the assertion):

(125) $[\![\text{(124-a)}]\!]^s = \neg\exists$x[student$'$(x) $\wedge$ $\forall$y(teacher$'$(y) $\rightarrow$ help$'$(y, x)]

As weak scalar elements (e.g. existentials, disjunction, etc.) are proposed to not trigger SIs when they are in a DE context, the simplified representation above captures the strengthened meaning of (124-a) in a simplified manner, that is, if we follow the proposal that strong scalar items only trigger their SI when they are immediately below the DE operator. Clearly, such a strengthened meaning retains its DEness, and the NCI is well-formed, as expected.[49] Similar analysis could be extended to sentences where the object is the universal quantifier, and the subject is the NCI as in the following:

[49]There are two complications regarding the analysis presented here for the well-formedness of structures where the universal scopes below NPI/NCI. First complication is empirical. Sentences where the universal quantifier scopes below an existential still triggers the indirect implicature that the alternative with existential is false:

(i) Öğrenci-ler-e her hoca yardım et-me-di.
Student-PL-DAT every teacher help AUX-NEG-PAST
'Students were not helped by every teacher (but they were helped by some teachers)'

The presence of such an implicature, if as argued by Guerzoni (2006), should not be present due to the fact that the universal is not in the immediate scope of the DE operator, then we have an empirical counterexample to the claim. One way to account for this may be to invoke the local computation of implicatures, since SIs are computed locally, at the point UQ enters recursion, all the alternatives will be generated but these alternatives may not compose with the alternatives that are generated by the higher NCI, thus DEness may not be disturbed by a lower UQ. However, it is unclear to me if such a possibility is already present in Chierchia (2004), or if it could be integrated trivially.

The other complication is related to Guerzoni's argument that if indirect implicatures are generated only when the strong scalar item is in the immediate scope of a DE operator, then the theory predicts the following sentence to be well-formed, since *ever* should "neutralize" the intervening effect of *every*:

(ii) *I haven't ever told every member of my committee that there is any topic I want to work on.

See (Guerzoni, 2006, p. 391–395) for more on this complication. Regardless of such complications, the revised theory of implicatures in Chierchia (2013) is argued to (better) handle the lack of intervention effects when the strong scalar item does not intervene between the licenser and the licensee (e.g. Homer (2021)), thus adopting it would presumably get rid of such problematics, but for convenience, I will keep using the earlier system, since it appears to be mostly sufficient for our goal. Nevertheless, in further studies, the revised version needs to be adopted for Turkish to observe its adequacy.

(126) Hiçbir hoca her öğrenci-ye yardım et-me-di.
no teacher every student-DAT help AUX-NEG-PAST.3sg
'No teacher helped every student.'

To sum up, the SI theory developed by Chierchia (2004) is able to account for the presence of intervention effects by universal quantifiers that we have observed in (123), while also accounting for the seeming disappearance of the said effect in (124) and (126) (albeit with some complications). Even though the revised version that is developed in Chierchia (2013) would possibly be a more adequate alternative (especially regarding the lack of intervention when universal is below the NCI), for our purposes, the system that we introduced here looks to be a meaningful starting point for giving an account for the intervention effects. In the following section, we will analyze the disruption by *and*.

6.2 Intervention by *Ve*

The *and* intervention in Turkish appears to be quite odd. Let me illustrate it with a couple of examples:[50]

(127) a. *Hiçbir hoca ve iki öğrenci gel-me-di.
No teacher and two student came-NEG-PAST.3sg
Not available:'It is not the case that any teachers and/or two students came.'

[50] One of the jury members noted that Turkish *ve* can also be interpreted temporally as in below:

(i) Dükkan-a gir-di-m ve kazak al-dı-m.
Shop-DAT enter-PAST-1.sg and sweater buy-PAST-1.sg
'I entered the shop and (then) I bought a sweater'

Here, the left part of the coordinator occurs priorly to the right part, which means that *ve* may show temporal properties. Naturally, the interaction of scalar properties and temporal properties of *ve* needs to be better understood. For example:

(ii) Dükkan-a gir-me-di-m ve kazak al-ma-dı-m.
Shop-DAT enter-NEG-PAST-1.sg and sweater buy-NEG-PAST-1.sg
'I didn't enter the shop and I didn't buy a sweater'

In the sentence above, the temporal property seems to vanish. Indicating that when both parts of the coordination is negated, the temporal property of *ve* is nullified. However, as we see below, if the first part is negated, the temporality seems to also vanish, but if only the second part is negated, the temporality appears to be preserved.

(iii) Dükkan-a gir-di-m ve kazak al-ma-dı-m.
Shop-DAT enter-PAST-1.sg and sweater buy-NEG-PAST-1.sg
'I entered the shop and (then) I didn't buy a sweater'

(iv) ?Dükkan-a gir-me-di-m ve kazak al-dı-m.
Shop-DAT enter-NEG-PAST-1.sg and sweater buy-PAST-1.sg
'I didn't enter the shop and I bought a sweater (from somewhere else).'

It looks as if when the negation is on the second conjunct, the temporality is preserved as in (iii), but if the negation is on the first conjunct, like (iv), the temporality vanishes again. Scalar elements like UQs or existentials also need to be tested to see how they behave with respect to temporal *ve*, but at this point we couldn't find any connection between temporal property of *ve* and intervention effects, thus we leave the relevant inquiry to a future work to save space.

b. *Hiçbir hoca ve her öğrenci gel-me-di.
No teacher and every student came-NEG-PAST.3sg
Not available: 'It is not the case that any teacher and/or every student came.'

c. Hiçbir hoca ve hiçbir öğrenci gel-me-di.
No teacher and no student came-NEG-PAST.3sg
'No teacher and no student came.'

Looking at (127-a) and (127-b), we may infer that *and*, just like in English, systematically intervenes for NCI licensing, and we would be able to straightforwardly adopt the SI theory we have seen so far. Yet, (127-c) appears to be a counterexample, as why it would not yield an ill-formed structure is not evident. To start analyzing such sentences, I should first illustrate an interesting behavior of Turkish NP/DP coordination under negation, which to my knowledge, is not a well documented behavior:

(128) a. ??Her hoca ve iki öğrenci gel-me-di.
Every teacher and two student came-NEG-PAST.3sg
Unavailable: 'It is not the case that every teacher and/or two students came.'

b. ??İki hoca ve Can gel-me-di.
Two teachers and Can came-NEG-PAST.3sg
Unavailable: 'It is not the case that two teachers and/or Can came.'

c. ??Can ve her hoca gel-me-di.
Can and every teacher came-NEG-PAST.3sg
Unavailable: 'It is not the case that Can and/or every teacher came.'

What exactly is going on here? Obviously, coordination under negation is not disallowed in general, since the following are grammatical:

(129) a. Her hoca ve her öğrenci gel-me-di.
Every teacher and every student came-NEG-PAST.3sg
'Not every teacher and every student came.'

b. İki hoca ve üç öğrenci gel-me-di.
Two teachers and three students came-NEG-PAST.3sg
'Neither two teachers nor three students came.'

c. Can ve Aslı gel-me-di.
Can and Aslı came-NEG-PAST.3sg
'Neither Can nor Aslı came.'

The data above indicates that coordination of different types of NPs (e.g. universal quantifier and existential quantifier) is not allowed when they are under negation.[51] Naturally, the constraint on the coordination of different types of NPs is not exactly a research question that we can detail here, but,

[51] Coordination of different types of NPs are well-formed in positive sentences:

(i) Her hoca ve iki öğrenci gel-di.
Every teacher and two students came-PAST
'All the teachers and two students came.'

(ii) Her hoca ve Can gel-di.
Every teacher and Can came-PAST
'All the teachers and Can came.'

whatever the reason may turn out to be, I argue that we can reduce the apparent intervention effects that we see in (127-a) and (127-b) to this unidentified constraint. This proposal is based on the fact that *and*-coordination in Turkish appears to be ill-formed for all the different types of NPs when they are under negation, so stipulating intervention effects are the reason for the ill-formedness of (127-a) and (127-b), before we find the source of the ill-formedness in (128), may turn out to be redundant. In other words, before more thoroughly understanding the constraint that disallows the coordination of different types of NPs under negation, we cannot straightforwardly eliminate the possibility that this unclear constraint is the reason that (127-a) and (127-b) are ill-formed. So, to capture the observation that different types of NPs are ill-formed when they are coordinated under negation, I propose the following descriptive constraint:

(130) **NP/DP Coordination Constraint in Turkish**
An NP of class A (e.g. existential quantifier) can be coordinated with an NP of class B (e.g. universal quantifier) only if the sentence is non-negative, otherwise an NP of class A can only be coordinated with another NP of class A.

The informal characterization of the coordination in negative sentences allow us to capture the ungrammaticality of (127-a) and (127-b), since if the constraint above is on the right track, then we can assume that there are no intervention effects in these sentences. Obviously, the constraint above is descriptive in nature and does not explain why such a behavior is present, but still, the observation that underlies the constraint might be the reason that (127-a) and (127-b) are ill-formed, which is the assumption that I make to simplify the data that we need to account for by adopting the SI theory.

Let us assume that our proposal above is accurate, and that there is no intervention effect in (127-a) and (127-b), and both sentences are ruled out by (130). Such an analysis does not cause any problems for adopting the SI theory, since we are arguing that there is another constraint in Turkish that disallows general coordination of different types of NPs, which might turn out to be completely independent from SIs (perhaps the constraint is completely syntactic in nature). It might have been the case that, if not for the constraint in (130), the SIs triggered by *ve* (i.e. *and*) would disturb the DEness of the structure, and thus cause ill-formedness due to implicatures (like in English). However, even though reducing the ill-formed coordination of NCIs to (130) may not directly be a problem for adopting the SI theory, there are still two complications for directly adopting the said account for intervention by *ve* in Turkish without making alterations to either the data, or the theory: (i) first is about the lack of the proposed SI that accompanies *and* (i.e. *ve*) under negation, namely the *either... or...* reading in Turkish (e.g. (129)); the second complication is that the well-formedness in (127-c) is not directly captured, since there is an NCI that is well-formed even though it is coordinated by a seemingly strong scalar element. Even though these two complications may seem to be not trivial, there is a way to account for them both straightforwardly when we base our analysis on the actual interpretations of *ve*-coordination in Turkish negative sentences.

The first complication, which is about the fact that the proposed scalar implicatures for *and* under negation is not accessible in Turkish, constitutes a complication for the SI theory, because the following negative sentence with the Turkish coordinator *ve* is predicted to produce the reading that the alternative with *veya* (i.e. *or*) is false, which in turn is predicted to yield the *either... or...* reading (e.g. *I did not drink beer and coffee* triggers the SI *I drank either beer or coffee*). This reading however, is

The constraint on coordination of different types of NPs seem to be only present for negative sentences.

not accessible. Below is a sentence that has *ve* in a negative structure and a possible representation of its assertion:[52]

(131) a. Öğrenci-ler ve hoca-lar gel-me-di.
Student-PL and teacher-PL come-NEG-PAST-3.sg
'Neither students nor teachers came.'
b. $\neg(\text{come}'(\text{students}' \wedge \text{teachers}'))$

The assertion that represents the sentence in (131-a) includes the logical operator *and*, since the sentence has a functional element that corresponds to the logical *and*. Yet, if we look at the translation of (131-a), the interpretation that we get from the sentence (regardless if SIs are relevant here or not) does not correspond to the assertion that uses the *and*, because the reading of the sentence corresponds to *neither... nor...* and this sentence cannot be true if, say, students came but not teachers. Semantically, when a negation is positioned above a coordination, the sentence can be true even if one of the conjuncts turn out to be true, since *and* requires both parts to be true to return the value true, and *negation* will only return false if its input is true (e.g. $\neg(1 \wedge 0) = 1$). Basically, the sentence in (131) should be true in a model where students came but not teachers, however this sentence would be false in such a model, since it is interpreted as *neither students nor teachers came*. So how can we acquire this reading? I will simply propose that *ve* in simple Turkish structures such as (131) is interpreted as the logical *or* when it is under negation, and by postulating this switch, we are able to capture the actual interpretation of (131) trivially:

(132) $[\![(131\text{-a})]\!] = \neg(\text{come}'(\text{students}' \vee \text{teachers}'))$

As when *or* is interpreted below negation, the relevant proposition could only be true if both arguments of *or* are false. Thus, the representation in (132) appears to capture the intuition regarding the sentence in (131-a), and due to this fact, I propose that the functional element *ve* is interpreted as the logical *or* when it is under negation:

(133) **A Description of Turkish *ve* Under Negation**
Turkish scalar coordinator *ve* is interpreted as the logical disjunction (i.e. $\vee$) when it is under negation.

The simple description above aims to capture the intuition of sentences such as (131), where the element that behaves equivalently to a typical logical coordinator (i.e. *and*) in non-negative sentences, namely *ve*, behaves equivalently to the logical disjunction when it is interpreted below negation. Moreover, this generalization, which is argued on the grounds of the actual readings of such sentences irrespective of SIs, allow us to account for the complication (i), which is about the fact that Turkish *ve* does not trigger the SI that is proposed to accompany a negated *and*. At this point, the reason why such a SI is not triggered can be accounted by assuming that when interpreted under negation, the coordinator *ve* does not behave as a logical *and*, rather it behaves as if it is logical *or*. Since *or* does

[52] A jury member noted that the sentence in (131) also has a reading that can be paraphrased as: "Neither students, nor teachers came, but someone (else) came." This reading seems to be possible for me too and this means that the implications of this reading/implication need to be also analyzed, however due to the time constraints, I have to leave this question to a future work.

not trigger SIs in DE contexts due to being a weak scalar element, we would not expect *ve*, which is an element that corresponds to the *or* reading under DE contexts, to trigger the *either... or...* reading (see Chierchia (2004) for more on weak scalar elements in DE contexts). In the following sentence, the lexical/functional element *or* in English, which arguably corresponds to its logical counterpart (i.e. $\vee$), is given under negation for illustration, and the interpretation of the sentence directly correspond to its assertion (excluding contextual factors):

(134) James did not drink beer or whiskey.
'James drank neither beer nor whiskey.'

We see above that there are no SIs that are triggered when the disjunction element is under negation, and the reading is equivalent to the bare meaning. Hence, if Turkish *ve* also behaves as a logical *or* under negation, then we do not predict the SI that should accompany *and* under negation (i.e. the *either... or...* reading), and since the logical *or* does not generate any SI at all when under negation, we also predict Turkish *ve* to not trigger any SI, which appears to be confirmed looking at the reading in (132). In short, by proposing (133), we are able to account for the lack of SI that accompany *and* in negative structures (i.e. the complication (i)).

The second complication, which is about the well-formedness of (127-c), directly follows from the proposal that *ve* is interpreted as logical *or* in negative structures, and thus should not disrupt the DEness of the structure, which means that NCI coordination by *ve* should be well-formed. To elaborate on this, I will shortly go over *and* intervention again to show that why *and* is argued to anti-license NPIs:

(135) a. James did not drink beer and whiskey.
Assertion:$\neg$(drink$'$J$'$(beer$'$ $\wedge$ whiskey$'$))
Scalar Implicature:(drink$'$J$'$(beer$'$ $\vee$ whiskey$'$))
Strengthened Meaning: $\neg$(drink$'$J$'$(beer$'$ $\wedge$ whiskey$'$)) $\wedge$ (drink$'$J$'$(beer$'$ $\vee$ whiskey$'$))
(DEness is disturbed by *and*)

b. James did not drink beer or whiskey.
Assertion:$\neg$(drink$'$J$'$(beer$'$ $\vee$ whiskey$'$))
No SI
Strengthened Meaning:$\neg$(drink$'$J$'$(beer$'$ $\vee$ whiskey$'$))
(DEness is not disturbed by *or*)

The basic representations above show us that the presence of the strong scalar element *and* disturbs the DEness by introducing the negated weaker alternative to the interpretation of the sentence, whereas the operator *or*, being a weak scalar element, does not introduce its strong counterpart at all, thus not disturbing the DEness (I leave the DE test of such sentences to the reader for space). Said analysis predicts that when an NPI is coordinated by a conjunction under negation, it should be ill-formed, and when it is coordinated by a disjunction, it should be grammatical, which is verified below:

(136) a. *James did not drink any beer and any whiskey.
b. James did not drink any beer or any whiskey.

When the DE is disturbed by *and* as in (136-a), the sentence is ungrammatical, whereas when no SI disrupts the DEness as in (136-b), the sentence is well-formed.

Coming back to the Turkish intervention effect in (127-c), assuming that our generalization holds in (133), we predict NCI coordination to be well-formed, since negated *ve* is interpreted as logical *or*, and *or* does not trigger SIs under negation. To see this, let us analyze some negative sentences with *ve* and *veya* by adopting the SI theory to see their behavior:

(137) a. Öğrenci-ler ve hoca-lar gel-me-di.
Student-PL and teacher-PL come-NEG-PAST-3.sg
'Neither students nor teachers came.'
Assertion:$\neg$(come$'$(students$'$ $\vee$ teachers$'$))
No SI
Strengthened Meaning:$\neg$(come$'$(students$'$ $\vee$ teachers$'$))
(DEness is not disturbed by *ve*)

b. Öğrenci-ler veya hoca-lar gel-me-di.
Student-PL or teacher-PL come-NEG-PAST-3.sg
'Neither students nor teachers came.'
Assertion:$\neg$(come$'$(students$'$ $\vee$ teachers$'$))
No SI
Strengthened Meaning:$\neg$(come$'$(students$'$ $\vee$ teachers$'$))
(DEness is not disturbed by *veya*)

When we look at the readings of the sentences above,[53] the representations capture the intuitions towards such structures (excluding the ambiguity in (137-b)). Both sentences have a *neither... nor...* reading, and if our analysis of the data is accurate, then we predict that neither *ve* nor *veya* would cause intervention effects and this prediction is verified when we look at sentences such as (127-c) (also the sentence in footnote 53). (127-c) and an additional *veya* coordination with double NCI are shown below for convenience:

(138) a. Hiçbir hoca ve hiçbir öğrenci gel-me-di.
No teacher and no student came-NEG-PAST.3sg
'No teacher and no student came.'

b. Hiçbir hoca veya hiçbir öğrenci gel-me-di.
Student-PL or no student come-NEG-PAST
'No teacher and no student came.'

[53]The *veya* sentence is ambiguous between the reading represented in (137-b) and a reading that corresponds to *either students did not come, or teachers did not come*. The latter reading, which may be analyzed as a possible ellipsis structure, could arguably be a DEness disturbing reading, since there seem to be an implicature that *either teachers did not come, or students did not come, but one of those groups came*. Nevertheless, this implicature seems to vanish when an NCI is coordinated by *veya*:

(i) Öğrenci-ler veya hiçbir hoca gel-me-di.
Student-PL or no student come-NEG-PAST
'Neither students nor any teacher came.'

Moreover, the ambiguity seems to be affected by intonation as well. Sadly, I will have to leave details of *veya* structures and their interaction with NCIs and SIs to a further study. In any case, as predicted, *veya* does not yield intervention.

Both sentences above are well-formed in line with our analysis of the data. For (138-a), I proposed that *ve* does not disturb the DEness of the structure, since it behaves as the logical *or* in negative sentences, and *or* is a non-DE disruptor. Further, for (138-b) the SI theory predicts it to be well-formed as well since *veya* (notwithstanding the possible ambiguity), already behaves equivalently to a typical logical *or*, thus it will not trigger a SI under negative structures. In short, with the assumption made in (133) for the behavior of *ve*, the SI theory allow us to capture both sentences in (138). The difference between *veya* and *ve* for our point is that while *ve* allows only the coordination of NCIs, *veya* allows for coordination of NCIs and other types of NPs. The reason for this difference is that *ve* is bound by the independent constraint in (130), while *veya* is not:

(139) a. *Can ve hiçbir hoca gel-me-di.
Can and no teacher come-NEG-PAST.3sg
Unavailable:'Neither Can nor any student came.'
b. Can veya hiçbir hoca gel-me-di.
Can or no teacher come-NEG-PAST.3sg
'Neither Can nor any student came.'

Before concluding, we will lastly go over the collective predicate puzzle and reflect that to Turkish (albeit briefly), since the data appears to be relevant. Earlier, I argued that the *and* in collective predicates do not naturally constitute a scale in the manner that the non-collective predicate *and* does, thus as a non-scalar element, the SI theory predicts that the collective *and* should not trigger SIs under DE contexts. In Turkish, collective predicates also allow for the well-formedness of NCI coordination with *ve*:

(140) Hoca ve hiçbir öğrenci görüş-me-di.
Teacher and no student meet.with-NEG-PAST.3sg
'It is not that the teacher and any student met.'

Here, if we take *ve* to correspond to the logical *and*, then we are overgenerating, since our theory would predict (140) to be ill-formed. Yet, as before, I take the collective *ve* here to be a non-scalar element, so there should be no SI that disturbs the DEness (i.e. falsified *or* reading), and as such, the collective predicate coordination with NCIs fits naturally within the SI theory.[54]

In conclusion, at first glance, the *and*-intervention in Turkish behaves contradictory to the predictions of the SI theory. Yet, when we try to capture the actual empirical behavior of *ve* under negation, we are

[54]There is an interesting behavior of collective *ve* under negation, which is related to (133):

(i) Her hoca ve iki öğrenci görüş-me-di.
Every teacher and two student meet.with-NEG-PAST.3sg
'It is not that every teacher and (the) two students met.'

(ii) Üç hoca ve Can görüş-me-di.
Three teacher and Can meet.with-NEG-PAST.3sg
'It is not that (the) three teachers and Can met.'

The fact that the collective predicates, unlike non-collectives, allow for different types of NPs to be coordinated seems interesting, but obviously it cannot be pursued here. Nevertheless, in case if it was not observed before, I illustrate the sentences here for future studies.

able to account for the "odd' picture that we see in (127), because: (i) *ve* does not allow coordination of different types of NPs in negative sentences, and (ii) it is interpreted equivalently to the logical *or* under negation. So, in (127-a) and (127-b), the ill-formedness stems from an independent constraint which disallows the coordination of different kinds of NPs, hence the structures are disentangled from intervention effects. For the well-formed structure in (127-c), the description in (133) fits the data to the theory, as *ve* seems to be interpreted as the logical *or*, which is argued to not trigger SIs, and the lack of intervention effects is predicted by the SI account. Lastly, the collective predicate structures follow directly from the assumption that the *ve* in collective predicates do not constitute a lexical scale, so the theory predicts for it to not trigger any SIs, and thus intervention effects should not be present, which is in line with the data in (140). Next, we go over the attraction to focus (AtF) structures.

6.3 Intervention by *AtF*

Linebarger (1980) calls structures such as (5-c) Attraction to Focus (AtF), where the negation seems to be attracted to focus, and in AtF, an NPI (or NCI) tends to be anti licensed (the focused elements are shown as capitalized):[55]

(141) *HİÇBİR öğrenci-ye güven-me-di-m, BİRÇOK öğrenci-ye güven-di-m.
NO student-DAT trust-NEG-PAST-1sg, MANY student-DAT trust-PAST-1sg
Unavailable:'I didn't trust ANY student, I trusted MANY students.'

Here, from a purely syntactic perspective, there seems to be a local negation that should license the NCI, however, the sentence is ill-formed. To understand AtF, let us first take a look at its counterpart without an NCI:

(142) BİRKAÇ öğrenci-ye güven-me-di-m, BİRÇOK öğrenci-ye güven-di-m.
FEW student-DAT trust-NEG-PAST-1sg, MOST GOOD student-DAT trust-PAST-1sg
'I didn't trust FEW students, I trusted MANY students.'

The sentence above is well-formed when there is no NCI that is attracted to focus, which indicate that in (141) there may be an intervention effect caused by some property of AtF. Linebarger (1980) states that in AtF, the focused element, regardless if the focused element is itself the NCI (or NPI) as in (141), will intervene between the negation and the NCI (e.g. *NOT (the x such that (I trusted x) = NCI)*). From the perspective of SI account, the AtF structures do not seem to be trivially captured, due to the problematic nature of the representation of AtF structures. In said structures, the preceding clause seems to be denied, while the following clause appears to be asserted, in which the reading is roughly equivalent to *it is not true x, rather y* (see Carcassi and Sbardolini (2023) and the references

[55] Such sentences could also be taken as *denials*, where basically a part of the sentence is denied to be true. Still Linebarger (1980) considers sentences like the following to constitute AtF, so I will follow the same terminology:

(i) *I don't have ANY interest in the project – I have a LOT of interest in it. (AtF)

(Linebarger, 1980, p. 55)

See (Linebarger, 1980, pp. 53-59) for more on the AtF, denial and external negation, and their interaction with NPIs from the perspective of ISC.

therein for more on denial). Notwithstanding the non-triviality for the representation of AtF structures, we may be able to, albeit quite informally, show that DEness does not hold for the denied part of AtF structures, and within the SI theory, or more generally within the exhaustification theory, NPIs that are not in DE should be disturbed, and so Chierchia's system would actually predict sentences such as (141) to be ill-formed. First, an informal representation of (142) to show that DEness does not hold for the position of the NCI:[56]

(143) $[\![(142)]\!] = \neg\text{TRUE}(\text{help}'\text{I}'\text{few-students}') \wedge (\text{help}'\text{I}'\text{many-students}')$

With the utilization of the ad-hoc *TRUE*, the interpretation above roughly corresponds to the reading that *it is not true that I helped few students, rather I helped many*. Now to observe why this sentence is not DE for the object position of the preceding part, we can informally define a model that is true with respect to (143), but is not true with respect to a minimal pair that substitutes the given object (i.e. *few-students*) with one of its subsets (e.g. *few-lazy-students*). Let us assume that there are ten students in a given domain, and the speaker helped eight of them, and did not help two of them. Out of these eight students, two are lazy, and the others are hardworking. Essentially, the speaker has helped two lazy and six hardworking students, and in such a model, the proposition in (143) is true, since both the denied and the asserted parts correspond to the model. The denied part checks out, since the denied situation is that there are few students that the speaker helped, and this situation is incorrect as the speaker helped many students (I take the *few* here with its implicature *not many*), so the truth value of the denied situation is false, and negating it will return true. The asserted part also checks out since there are indeed many students that the speaker helped. Thus, in such a scenario the proposition in (143) holds. However, when we switch the object of the denied part with one of its subsets, we see that DE does not hold:[57]

(144) $\neg\text{TRUE}(\text{help}'\text{I}'\text{few-lazy-students}') \wedge (\text{help}'\text{I}'\text{many-students}')$

The representation here aims to capture the reading that refers to *it is not true that I helped few lazy students, rather I helped many students*. But, this reading does not correspond to our scenario, in which the speaker helped many students, where six of them are hardworking and two of them are lazy. This is because, in the given scenario the denial part does not hold, considering few (i.e. two) lazy students

[56] As mentioned in Linebarger (1987), representing denial/AtF structures is not quite obvious, so I will postulate the operator *TRUE* in a similar fashion to Linebarger, which is basically an operator that returns the truth of its input proposition, and by utilizing it, we get around the incorrect interpretation (i.e. *there is no student x s.t. I trust x, and ...*) for (142). This way, we (somewhat) capture the intended reading that can be paraphrased as *it is not true that I helped few students, rather I helped many students*. Obviously, operator *TRUE* is just an ad-hoc solution to represent the intended meaning of the sentences, but whatever kind of representation we should adopt for AtF/denial structures, it should capture the "overall" meaning of such sentences that roughly correspond to *it is not true x, rather y*, and this meaning does not appear to be DE for the denied part, regardless of its representation.

[57] For reasons that are unclear to me, the Turkish sentence that seems to correspond to (144) is ill-formed:

(i) ??/*BİRKAÇ tembel öğrenci-ye güven-me-di-m, BİRÇOK öğrenci-ye güven-di-m.
FEW lazy student-DAT trust-NEG-PAST-1.sg MANY student-DAT trust-PAST-1.sg
Unavailable:*It is not that I trusted few lazy students, rather I trusted many students*

There may be some AtF/denial specific constraints disallow the non-correspondence of the relevant lexical items (e.g. the focused or compared element). In any case, just by looking at the semantic representations as in (144), we can see that the DEness does not hold for the object position of the denied part.

were, in fact, helped by the speaker in our model. Therefore, the operator *TRUE* will return true for the denied proposition, and the negation will negate the input to return false, which in turn will give us logical structure that corresponds to (denied:$0 \wedge$ asserted:$1 = 0$), and the proposition in (144) does not hold true for the informal model that we proposed. This should not be the case if DEness were to hold from (143) to (144), since for DEness to hold, the entailment should hold when we substitute an expression with its subsets (e.g. few students $\rightarrow$ few lazy students).

Evidently, the analysis above is quite preliminary due to the non-obvious nature of the representations of AtF/denial structures. Regardless, it truly seems that DEness does not hold for the denied part of such structures, considering the lack of entailment from (143) to (144). Then, assuming this preliminary analysis to be accurate for representing the lack of DEness (at least to some extent), we can attribute the lack of DEness in such structures to be the cause of the ill-formedness, since the exhaustification theory proposes that NPIs (also NCIs) are contradictory under non-DE environments.

To summarize, we have seen the AtF/denial intervention in this chapter, and observed that in relevant structures, the denied part does not seem to have the DE property, which is necessary for the well-formedness of NPIs/NCIs. Although the analysis here is quite informal due to the problematic nature of the representations regarding AtF/denial structures, hopefully it illustrates that due to the lack of DEness, the sentences are predicted to not allow for NPI/NCI licensing, which is confirmed when we look at sentences like (141). In order to not make errors for the analysis, I will skip detailing the representation of the contradiction that causes the ill-formedness in AtF structures, because, again, the representations for said structures are unclear, thus what kind of representation would capture the contradiction (unfortunately) eludes me. So, I leave the representation (and the derivation) of the contradictions that will stem from the lack of DE in AtF/denial structures to a later occasion.

6.4 Intervention by *Sadece*

The intervention data that we will analyze by adopting the SI theory is the following:

(145) ??Can sadece hiçkimse-ye güven-me-di.
Can only no.one-DAT trust-NEG-PAST.3sg
Unavailable:'Only no one trusted Can.'

Sadece, which somewhat corresponds to the English *only*, appears to be the element that causes the intervention effect. One possible analysis could be to follow Beck (2006) and state that the focus properties of *sadece* could be the reason why the anti-licensing is present here. Yet, there is another way to analyze this sentence, which would be in line with the proposals of SI/exhaustification theory. Looking at (145), we can see that the object position, which is the position that *sadece* scopes over, is not a DE position. The sentence below, which does not have an NCI, illustrates this:

(146) Can sadece öğrenci-ler-e güven-me-di.
Can only student-PL-DAT trust-NEG-PAST.3sg
'Can did not trust only the students.'

The sentence above asserts that *Can didn't trust only the students*, which is true in a world where there are five students, and Can did not trust only these five students, where two of these students are lazy and three of them are hardworking. However, this model would not be accurate if we substitute *öğrenciler* with one of its subsets:

(147) Can sadece tembel öğrenci-ler-e güven-me-di.
Can only lazy student-PL-DAT trust-NEG-PAST.3sg
'Can did not trust only the lazy students.'

The proposition above would only be true, if Can did not trust only the lazy students. Yet, this statement is inaccurate when we consider our model, since Can also does not trust the hardworking students in this world. Thus, we see that the presence of *sadece* in negative structures disturbs the DEness of the position that *sadece* scopes over, which means that NCIs are predicted to be ill-formed when they are scoped over by *sadece* due to causing contradictions. To informally represent the lack of DEness, the simplified logical structures in (148) show that the entailment does not hold from the former to latter:

(148) $[\![(146)]\!] = \neg(\text{trust}'\text{Can}'(\text{only}'\text{student}'))$
$\not\rightarrow$
$[\![(147)]\!] = \neg(\text{trust}'\text{Can}'(\text{only}'\text{lazy-student}'))$

In short, the functional element *sadece* in Turkish appears to disturb the DEness for the position that it scopes over, and therefore, assuming that NCIs need to be interpreted in a DE position to be non-contradictory, we predict NCIs in such positions to be ill-formed, in line with the system of Chierchia (2004, 2013). The following section will be about the intervention effects that we see in adjunct clauses, such as *after*-clauses.

6.5 Intervention by Adjunct Clauses

The last example that we will analyze in this study by adopting the SI/exhaustification approach is the adjunct clauses. The relevant sentence is below:

(149) *Ben hiçbirşey ye-dik-ten sonra uyu-ya-ma-dı-m.
I nothing eat-NMN-ABL after sleep-PSB-NEG-PAST-1sg
Unavailable:'I could not sleep after eating anything.'

In the example above, we see an NCI that is situated in an adjunct clause, headed by *sonra*, but the structure is not well-formed. Similar to our earlier analyses, if the position that the NCI is in is not DE, then the SI/exhaustification account predicts that the sentence should be ill-formed. To test if the position is DE or not, we can, again, use the non-NCI counterparts to test if the position is in fact DE:

(150) Ben yemek ye-dik-ten sonra uyu-ya-ma-dı-m.
I food eat-NMN-ABL after sleep-PSB-NEG-PAST-1sg
'I could not sleep after eating food.'

The statement here is true if the speaker was not able to sleep after eating food, and this statement could be true for any kind of food, say, pasta. So in a scenario the speaker ate pasta and could not sleep after would be true here. However, in this scenario, the following sentence cannot be true:

(151) Ben pizza ye-dik-ten sonra uyu-ya-ma-dı-m.
I pizza eat-NMN-ABL after sleep-PSB-NEG-PAST-1.sg
'I could not sleep after eating pizza.'

As the statement above is not true within the model that is true with respect to the statement in (150), we can see that the position of the object in the adjunct clause is not a DE environment. As in Chierchia's system, DEness is necessary for NCIs, the theory predicts the ill-formedness of (149).[58]

Summarizing, similar to the analyses of previous structures, we have observed that, as the position of the NCI is not a DE environment, the NCI cannot be licensed in adjunct clauses like *after*, and this fact is in line with the exhaustification/SI theory of polarity items.

6.6 Summary

The common thing in all the analyses we have seen so far is that, if the NCI is not interpreted in a DE position, either by a scalar element like *her*, or due to being in an adjunct clause, the NCI is bound to be ill-formed due to being contradictory. For *her*-intervention, we have shown that the presence of the universal quantifier disturbs the DEness of the structure, which means that the NCI will be contradictory after being exhaustified. *Ve*-intervention was not so straightforward, since we have seen that (i) double NCI coordination was well-formed (e.g. *hiçbir öğrenci ve hiçbir hocaya yardım etmedim*); and (ii) NCI coordination with another class of NP was ill-formed (e.g. ??*hiçbir öğrenci ve Ali'ye yardım etmedim*). To capture (i), I proposed that Turkish *ve* is interpreted as *or* in negative structures, which means that as a weak scalar item, it is not predicted to trigger the SI that disturbs the DEness, meaning that *ve* should not cause intervention effects, and for (ii), I have illustrated that different classes of NPs cannot be coordinated in Turkish independent from their NCI-hood, meaning that the apparent intervention effect of NCI + non-NCI coordination may stem from a different general constraint (e.g. the descriptive condition that I proposed in (130)). With such an analysis of the data, we were able to adopt the SI theory for *and*-intervention. For the *AtF*, we observed that the preceding part that hosts the NCI (e.g. */??*HİÇBİR öğrenciye güvenmedim, BİRÇOK öğrenciye güvendim*) is not a DE context, meaning that the sentence should be contradictory. The *sadece* intervention appears to be similar to a typical intervention effect, where an otherwise DE position is disturbed by the presence of this (possibly non-scalar) element, and so the NCI cannot be licensed if its in the scope of *sadece*. Lastly, we looked at the adjunct clauses and examined that the matrix negation is not able to create a DE context for the adjunct part, thus, the ill-formedness of the presence of NCI in non-negative adjunct clauses follow from the exhaustification/SI theory of polarity as well.

As the theory of Chierchia (2004, 2013) does not directly account for the question structures, I have to leave them out from our analysis (e.g. (i)), but similar to Chierchia, I am also optimistic that the

[58] To be more precise, in Chierchia (2013), the well-formedness of NCIs seem to be attributed to Anti-Additiveness, rather than DE. Still, if a position is not DE, then it also cannot be AA, meaning our simplified analysis here is sufficient for capturing the intervention effects.

exhaustification approaches may turn out to be successful in capturing interrogative structures as well. Nevertheless, I have to leave the interrogative structures to later studies due to its potential scope.

In brief, the earlier version of the exhaustification theory that we adopted here for the problem set we set out to explain in (5) is able to account for all the non-question structures, if we make some assumptions regarding certain data. Clearly, the analysis requires further elaboration, since for instance we did not even use the updated system developed in Chierchia (2013) due to practical reasons, yet I hope that the informal analysis that is based on the Chierchia (2004) is able to show that the exhaustification/SI theory could be adequate in capturing the intervention effects, and perhaps even the overall polarity phenomena in Turkish. This fact could imply that the theory might capture some universal properties of language as well, after all, Turkish shows quite different properties compared to the Indo-European counterparts, and the possibility that Chierchia's system may account for the polarity phenomena in a language like Turkish could be taken as an indicative of its crosslinguistic competency. If the theory is truly croslinguistically competent, then we may be dealing with a theory that decently reflects some aspects of language as a cognitive system.

CHAPTER 7

DISCUSSION AND CONCLUSION

The goal of this thesis was to give a descriptive account of negative dependencies in Turkish, which appeared to be not really possible unless the problem of intervention effects were adequately tackled. For the descriptive work on NDs, we have seen that Turkish NDs behaved as if they are NCIs instead of traditional NPIs or NQs. Then, we have made the somewhat uniform claim that Turkish NDs can be licensed by local AA operators and question structures, unless there are interveners, such as the strong scalar elements. Moreover, to account for the intervention effects, I have adopted the system of Chierchia (2004), in which the idea is that NDs are well-formed in DE domains because NDs are only logically consistent in DE environments, thus in non-DE environments NDs are bound to create logical contradictions, and such contradictions are argued to be the reason that NDs under non-DE environments are ill-formed. Further, as strong scalar elements were argued to disturb the DE nature of an otherwise DE environment, their presence anti-licenses a given ND due to causing logical contradiction. There were some structures, such as *ve*-intervention, or the *AtF* structures that required me to postulate some constraints or generalizations in order to fit the seemingly problematic data with the theory of scalar implicatures, but, if the analysis is on the right track, then we have seen that in all the data that we see the so-called intervention effects, there is some reason that the DEness of the structure is disturbed, either by a scalar element like *ve* or universal quantifier, or the ND turned out to be in a non-DE environment as in the adjunct clause examples (e.g. (149)).

There are some points that we may need to elaborate on in order to clarify some of the discusssions above, such as the negation hierarchy, the possibility of the DEness of question structures, and possibly many more. However, arguably two points seem to stand out for requiring elaboration and further discussion: (i) the descriptive generalization in (66); and (ii) the analysis of the intervention data from the perspective of Chierchia (2004), since in order to fit the data to theory, I had to make some assumptions regarding such sentences, and unless well motivated, fitting such sentences (e.g. (127)) that do not straightforwardly conform to Chierchia's theory may appear inadequate.

The descriptive proposal in (66) aims to capture the licensor possibilities for NDs in Turkish in a somewhat uniform manner. Yet, clearly, the proposal does not reduce the licensors to a single category due to the presence of question structures. Although I have argued that the negation and the without marker *-sIz* (perhaps also *-mAksIz*) can be reduced to the notion of Anti-Additiveness, there does not seem to be any evident relation between AAness and question structures. One possibility of finding a connection between interrogatives and AAness could be to follow the idea put forward in works such as Nicolae (2015), and to assume that there may be some form accessible downward entailing environment even in question structures. But, even if it could be argued that question structures may constitute some form of downward entailing domains, we still would not be able to account for why

it is that only the DEness of question structures allow ND licensing in Turkish, whereas other DE structures (e.g. restriction of UQ, some conditionals, etc.) do not. Another possibility would be to follow a reasoning similar to Giannakidou (1999), and take the relationship between AA structures and interrogatives to be the concept of veridicality, where questions form non-veridical environments, but AA operators may form antiveridical environments. Nevertheless, as was pointed out earlier, the notion of veridicality runs into complications, since if non-veridical environments allow for well-formed ND structures, such as questions, then it is not exactly evident why some non-veridical environments do not allow for ND licensing rises:

(152) a. Can kimse-ye yardım et-ti mi?
Can no.one-DAT help AUX-PAST.3sg Q
'Did Can help anyone?'

b. *Belki Can kimse-ye yardım et-ti.
Maybe Can no.one-DAT help AUX-PAST.3sg
Unavailable:'Maybe Can helped anyone/no one.'

Both sentences above can be classified as non-veridical environments since the question marker and the adverb *belki* do not necessarily return the truth value of their input, or in other words, the structures are not necessarily true or false due to the presence of such operators. Thus, if we follow non-veridicality, then we have some uniformity under this notion, but now we substitute the problem of uniformity of ND licensors to another problem, namely the problem of the overgeneralization of the non-veridicality account. In short, the uniformity of the licensor question does not appear to have a straightforward answer, not only for Turkish, but possibly crosslinguistically, as all the accounts that we have seen so far runs into some form of complication for understanding the licensor problem of negative dependencies.

Another problem that is more specific to Turkish question structures with NDs come from studies like Kesici (2019), where they note that the presence of question marker is not sufficient for licensing NDs, rather it needs to be on the verb/predicate:

(153) a. Kimse-yi gör-dü-n mü?
no.one-ACC see-PAST-3sg Q
'Did you see anyone?'

b. *Kimse-yi mi gör-dü-n?
no.one-ACC Q see-PAST-3sg
Unavailable:'Did you see anyone?'

The data above illustrates that the presence of a question marker, or a non-veridical operator is not enough to license NDs, instead the operator needs to be on a specific position. An immediate complication of this data is that for the environment/domain based approaches, the reason of ill-formedness is, again, not obvious. There is a valid local operator that seems to create a non-veridical/interrogative domain for the sentence, however, (153-b) is ill-formed regardless. Such sentences may indicate that before reducing ND licensor question to a single answer, we need to better understand what kind of relationship licenses the NDs . Why would the position of a question particle be relevant? Perhaps there is some syntactic constraint in addition to the semantic requirements, which need to be integrated somehow. Another possibility could be to utilize the system of Chierchia (2004, 2013) and extend on it to include question structures, such that question environments do not cause logical contradictions

for NDs. If such a proposal can be fleshed out, then perhaps the relevance of the syntactic position of the question operator for ND licensing may become clear. For instance, the position of the question operator may turn out to be critical for creating a fitting environment (e.g. DE) for NDs. Regardless, besides some stipulations, it is not evident to me currently why the position of the question particle is relevant for ND licensing, or how it could be integrated into theories that try to give an account of ND phenomena, but since it is a part of the licensor problem of NDs, we naturally have to find ways to also account for such structures. Hopefully, in the future studies, the relevance of the position of the question markers can be better understood, so that we can better understand the problems related to negative dependencies.

One last point of discussion related to question structures and NDs come from intervention effects. As we have shortly seen earlier, similar to negative structures, question structures also show intervention effects:

(154) a. *Herkes kimse-yi gör-dü mü?
Everyone no.one-ACC see-PAST.3sg Q
Unavailable:'Did everyone see anyone?'
b. *Can ve kimse-ye yardım et-ti-n mi?
Can and no.one-DAT help AUX-PAST-3sg Q
Unavailable:'Did you help Can and anyone?'

Presence of a universal quantifier or coordination anti-licenses the NCIs above in question structures, meaning that we see some form of an intervention effect. The nature of this intervention effect is quite unclear, however. The proposal of ISC does not necessarily account for the examples above, since some other logical elements like *veya* (i.e. *or*) do not cause intervention, similar to NDs under negative structures:

(155) Can veya kimse-ye yardım et-ti-n mi?
Can or no.one-DAT help AUX-PAST-3sg Q
'Did you help Can or anyone?'

Since there are some logical elements that do not intervene for the licensing of the given NCI, the ISC runs into similar problems that it faces in negative structures. Adopting Chierchia (2004, 2013) also faces complications as the theory does not account for the well-formedness of NDs under questions overall, so it is unclear how the exhaustification/scalar implicature approach can explain the problem of intervention effects under interrogative structures. However, looking at the sentences above in (154) and (155), the intervention patterns seem equivalent in both negative and question structure, in that strong scalar items seem to cause intervention in both environments. If we find out that the intervention effects show equivalent behavior in both negative and question structures (i.e. there is some form of disruption), then if we can find a way to integrate question structures into the system of Chierchia, we may straightforwardly account for such intervention effects under questions. After all, the reason that strong scalar items disturb ND licensing under negative structures is that they are proposed to disturb the DEness of a given structure, and due to that, the presence of an ND cause logical contradiction, which is argued to be the reason that intervention structures are ill-formed. So, if we can pinpoint the nature of the environment that licenses NDs in question structures, then we can test if the same strong scalar elements disturb this "ND licensing environment" that is present in questions, and see

if an equivalent logical contradiction is present in both negative and question structures that include strong scalar items and NDs. Hopefully, later work can shed light on this problem of licensing of NDs under question structures.

The second point of discussion is about the analysis of the intervention data in Turkish, where I proposed some alterations to the data, such as the proposal that Turkish *ve* is interpreted as the logical *or* under negation (i.e. (133)). Since I have tried to detail the justifications for making such claims, I will not go over them here once more, however, such a proposal may have unpredicted consequences for relevant studies, which might be necessary to discuss. For example, if Turkish "and" (i.e. *ve*) is truly interpreted as the logical "or" under negation, we can safely ask how, or perhaps why, is it that a coordinator behaves differently in negative and non-negative sentences.

(156) a. Öğrenci-ler ve hoca-lar gel-di.
Student-PL and teacher-PL come-PAST.3sg
'Students and teachers came.'
b. Öğrenci-ler ve hoca-lar gel-me-di.
Student-PL and teacher-PL come-NEG-PAST.3sg
'Neither students, nor teachers came.'

If Turkish *ve* behaved as a logical "and" under negation, then we would predict the sentence in (156-b) to have the reading *it is not that students and teachers came (only teachers came)*, however in Turkish, the only reading that seems possible from the given sentence is the *neither... nor...* reading, where if either students or teachers came, this sentence would be false. The purpose of (133) is to capture this intuition on grounds that is not directly related to NDs, however, if the idea in (133) turns out to be accurate, then this still does not say how does *ve* change into a logical "or" due to the presence of negation. To speculate, it might be the case that some syntactic operation, perhaps feature agreement, might turn *ve* into having the logical "or" reading under negation when *ve* scopes under negation. But of course such an analysis does not explain why negation would have some form of common feature with *ve* to yield the logical "or" reading. Whatever the reason may turn out to be, the readings of the sentences where *ve* scopes below negation seems relatively clear and the logical "and" reading does not appear to be accessible in such structures.

Similarly, *ve* also has an unorthodox interaction with negation when it combines different kinds of NP/DPs, or more precisely, *ve* does not allow different kinds of NPs to be coordinated under negation, whereas it allows coordination of different kinds of NPs under positive sentences:

(157) a. Can ve her çocuk gel-di.
Can and every child come-PAST.3sg
'Can and every child came.'
b. */??Can ve her çocuk gel-me-di.
Can and every child come-NEG-PAST.3sg
Unavailable:'Can and every child didn't come.'

Looking at similar data, I have proposed the constraint that coordinator *ve* cannot coordinate different "kinds" of NPs under negation, only same "kinds" (e.g. universal and universal, existential and existential, etc.) can be coordinated. Then again, even if this descriptive constraint turns out to be adequate,

the reason for why such a constraint might be present is a possible inquiry on its own. My goal here is to provide and discuss such data, which appears to be not well recorded, so that the future work may tackle this problem adequately in order to better understand the properties of *ve* and its interaction with negation.

One last complication that we may need to discuss is about the empirical domain, since we mainly utilized the classical native speaker judgment for the given sentences, and we have seen that there are a considerable amount of data where the judgments are shaky (e.g. long distance licensing, *sanki* structures, etc.). Although it is unclear to me what can be done for the shaky judgments straightforwardly, this does not mean that we cannot use another method of acquiring data and one such method is another classical way of data acquisition: a corpus. In order to take a look at a relatively big data to test our claims, we can analyze corpus data and see if it is borne out. For our case, we would predict that we would not see any sentence in which a strong scalar item is situated in between the licensor (e.g. negation) and the licensee (e.g. *hiçbirşey*). In order to do this in an automated way, perhaps a computational model that is based on SI theory could be constructed to see if there are counterexamples in a considerable set of data that is available in corpus. If such counterexamples turn out to be present in the data and we cannot find a way to attribute these counterexamples to a performance based errors (i.e. "misuse"), then it would indicate that we would need to revise our theory to capture the actual data. Another possible method would be to do some kind of survey based data acquisition, which could also help with the clarification regarding the data, however, if the survey is utilized, then the questions need to be precisely formulated, so that the data that we may acquire does not end up becoming uninterpretable by our theory. As an illustration, if we come up with a survey that asks the participants to rate the well-formedness of intervention data out of five or ten, then the resulting data that we may acquire may become meaningless, since if the average "grading" turns out to be three out of ten, for instance, what this "grade" implies is not captured by the SI theory. In different words, if the sentences that we predict to be ill-formed do not map to the lowest grade to capture the uninterpretability of such sentences, then we would have to also explain why they are not graded lowest, and currently the theory developed by Chierchia (2004, 2013) does not seem to have a straightforward answer to this. The theory only predicts some kind of ill-formedness based on logical contradictions, it does not appear to make predictions regarding the "level" of ill-formedness related to intervention effects. In short, if we utilize surveys for acquiring data, we need to construct the survey in a way that can generate a meaningful data that has straightforward implications for the SI theory.

Before concluding the thesis, we probably should note one aspect of the NPI theory that is developed in Chierchia (2004, 2006, 2013), which seems to be directly related to cognitive science, and it is the psychological predictions it seems to make regarding the ill-formed structures that include NDs. Chierchia proposes that the structures that include "unlicensed" NDs are not ungrammatical in the traditional sense and they are ill-formed due to the logical contradictions. Arguably, if the logical contradictions are not classically ungrammatical, then they may trigger different psychological reactions from speakers compared to a typical ungrammatical structure. As an illustration:

(158) a. *Read John a book.
b. ??/*John read anything.

The example in (158-a) is a stereotypical example of a sentence with some grammatical errors, where the word ordering requirements of English are not met, and the sentence is ungrammatical as a result. However, if we follow Chierchia's reasoning, then the sentence in (158-b) is not exactly ungrammat-

ical, rather it is grammatical, but is ill-formed due to the logical contradiction that accompanies NDs that are not in DE environments. This indicates that, perhaps implicitly, native speakers may judge such sentences differently in psychological terms, since they are different "types" of ill-formedness. If this is the case, then we can test this prediction by utilizing neuroimaging techniques, such as EEG or fMRI, where we can utilize classical ungrammatical sentences as baseline to see what kind of psychological reaction they trigger, and then compare that to the reaction that is elicited from sentences like (158-b). If the reactions are equivalent (e.g. both "trigger" P600), then the proposal that sentences like (158-b) are ill-formed not due to grammar, but due to the logical properties of language, will require some further discussion in order to be adequate. After all, if the given hypothesis that the psychological reactions would be different in examples like (158) is not confirmed, then the difference between the ungrammatical structures (e.g. (158-a)) and logically contradictory structures (e.g. (158-b)) would require further clarification due to the fact that we would have an empirical data that shows that structures as in (158) elicit equivalent psychological reactions. In simple terms, we would predict two different kinds of ill-formed structures to elicit different psychological reactions, and if this prediction is not borne out, then the theory would need to account for this equivalent psychological response in a transparent manner.[59]

There are naturally more points of interest that can be discussed about the analysis provided in this study, however, at this point it might be best to summarize some of these matters of interest that require further elaboration and leave the unanswered questions to later work. For the future inquiries, the licensing of NDs under question structures and the properties of *ve* and its interaction with negation appear to be meaningful lines of investigation, since both problems may yield understanding regarding NDs in Turkish and also crosslinguistically. Another line of research is the possibility of integrating the question structures into the theory of Chierchia (2004, 2006, 2013), so that this shortcoming of the theory could be amended. Lastly, the updated theory that is present in Chierchia (2013) should be adopted for Turkish in order to see how adequate it is for capturing not only intervention effects, but all other aspects of grammar that it aims to give an account for, such as free choice items, scalar reasoning and implicatures, negative and positive polarity items and more. Adopting the whole theory to see how far it can go in Turkish may yield a significant work, because it would allow us to see if the theory is adequate for capturing other, typologically different languages like Turkish, which, if it turns out that it can be adopted for Turkish sufficiently, then this may indicate that the theory present in Chierchia (2013) may be on track to capture some universal properties of natural language.

[59] For a discussion on the nature of ill-formedness of ND structures and the interaction between syntax and logic, see (Chierchia, 2013, pp. 444-447). At this point it is not exactly evident to me if the theory overtly proposes that there would be psychological differences between traditionally ungrammatical structures and logically contradictory structures, but regardless, the proposal in the given paragraph seem to be a meaningful line of inquiry that may have some implications regarding the properties of the language faculty, hence we point it out here.

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