NPI Licensing in Jordanian Arabic: An Argument for Downward Entailment and Syntax-Semantics Interface

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Abstract

Recent work shows that downward entailment (DE) cannot be the right semantic domain that licenses negative polarity items (NPIs). Zwarts (1995), Giannakidou (1998), among others argue that NPIs are licensed in non-veridical domains, those that do not entail or presuppose the truth of the propositions they embed. In this paper, based on empirical facts, I argue the DE theory is the right analysis for Jordanian Arabic. I propose an analysis of NPI licensing in which three components of grammar interface: syntax, semantics, and pragmatics. Semantics defines the class of NPI licensors, pragmatics forces quantificational closure of NPIs, and syntax executes the licensing via AGREE between a phasal head and the NPI. The analysis contributes to the debate on what components of grammar are responsible for NPI licensing and provides a new perspective on the interface between different components of grammar.

Keywords: Negative Polarity, Free Choice, Syntax-Semantics Interface, Downward Entailment, Arabic

Introduction

Negative polarity items (NPIs) are linguistic expressions that must occur in special semantic domains, among which are negatives, yes-no (YN) questions, and conditionals, as exemplified below.

(1) a. John did not publish *any* papers last year.
 b. Have you *ever* been to Thailand?
 c. Should you have *any* questions, please do not hesitate to ask.

 Much work has been done to characterize the domains that license NPIs. Some work proposes semantic accounts (Fauconnier 1975, 1979; Ladusaw 1980, Linebarger 1987, Kadmon and Landman 1993, von Fintel 1999, Giannakidou 2001, and many others). Other work argues for syntactic accounts (Lasnik 1975, Progovac 1993). Few studies propose syntactic-semantic analyses (Chierchia 2004, e.g.). The main point of difference between syntax-based and semantics-based accounts is that the former derives licensing using syntactic principles like locality while the latter captures licensing by characterizing the semantic nature of NPIs or the semantic nature of the contexts in which they occur.

 This paper contributes to the debate on which components of grammar should be responsible for NPI licensing. Citing evidence from Jordanian Arabic (JA), the paper proposes that NPI licensing involves interfacing between syntax and semantics/pragmatics: the class of NPI licensors is defined semantically, and the motivation behind

licensing is quantificational closure (Chierchia 2004), but the mode of licensing is syntactic. The rest of the paper is organized as follows. Section 1 reviews two of the main prominent studies on NPI licensing: the downward entailment and the non-veridicality theories. Section 2 presents the semantic and syntactic distribution of NPIs in JA. Section 3 presents an analysis of the facts. The last section is a conclusion.

1. Downward Entailment Vs. Non-Veridicality

In this section, I review two of the main prominent studies on NPI licensing, namely the downward entailment (DE) and the non-veridicality (NV) theories, showing their strengths and weaknesses. This section lays the background for my contention that the DE analysis is the right generalization for NPI licensing in JA.

 The word 'negative' in 'negative polarity item' is used for convenience. DE contexts include, in addition to negation, the protasis of conditionals, the restriction of a universal quantifier, the scope of anti-additive quantifiers such as *no*, among others. Fauconnier (1975, 1979) and Ladusaw (1980) argue that the contexts that license NPIs share the property of being DE contexts; they allow inferences from supersets to subsets. This view has been adopted in much later work (Linebarger 1987, Kadmon and Landman 1993, von Fintel 1999, Chierchia 2004, among many others). According to the definition in (2), negation is a DE function; it allows inferences from supersets to subsets. In (3), *Don't Breath*e is a subset of *horror movies*.

Replacing *a horror movie* with *Don't Breathe* does not change the truth value of the sentence by virtue of negation.

(2) A function f is downward entailing iff for every X, Y: if $X \subseteq Y$, then $f(Y) \subseteq f(X)$.

(3) Stacy didn't watch a horror movie last week.
[[*Don't Breathe*]] $\subseteq$ [horror movies]]
∴ Stacy didn't watch *Don't Breathe* last week.

Giannakidou (1998, 2006, and subsequent work), Zwarts (1995), among others show that the DE theory of NPI licensing is problematic, as not all the licensing domains are DE. First, NPIs are licensed in yes-no (YN) questions although they are not DE contexts. YN questions do not entail the truth from supersets to subsets as illustrated in (4b). For the rest of the paper, I use the right arrow to mean 'entails', and an arrow that is preceded by NOT to mean 'does not entail'.

(4) a. Are you getting any vegetables from the grocery store?
b. Are you getting vegetables from the grocery store? *NOT* → Are you getting bananas from the grocery store?

In addition, Lin (1996), Haspelmath (1997), Lahiri (1998), Dayal (1998), Giannakidou (1998), and many others show that some non-DE contexts may also legitimize NPIs. These include, just to mention a few, modals (5), imperatives (6), and complements of intensional verbs such as *insist* (7). In (6b), for instance, it is clear that imperatives do not entail truth from supersets to subsets. The same is true for all the examples that immediately follow.

(5) a. Mary will buy any book she sees.
b. Mary will read a book. *NOT* → Mary will read Animal Farm.

(6) a. Call anyone upon your arrival!
b. Read an article on terrorism by the end of this week! *NOT* → Read an article on terrorism in Europe by the end of this week!

(7) a. The government insisted that the soldiers should not let any refugees in.
b. The president insisted that undocumented immigrants should be deported. *NOT* → The president insisted that undocumented young immigrants should be deported.

Those non-DE contexts also license another set of items, referred to as *free choice items* (FCIs) (Ladusaw 1980, Giannakidou 1998, Dayal 2004,

Jayez and Tovena 2005, among many others).[1] An FCI is acceptable only in contexts that involve explicit or implicit quantification over alternatives; it must be assigned a different value in each possible world. More specifically, an FCI contains a world variable that cannot be bound by a text-level quantifier and must be bound by an intensional operator such as a modal, habitual, or generic operator (Giannakidou 2001). Below are examples from JA. Distinct FCIs have a complex structure. For instance, *wein-ma-kan* 'wherever' in (8b) has three morphemes: a wh-word *wein* 'where', the emphasis marker *-ma-*, and the copula *-kan*:[2]

(8) a. *Laila*   *bidha*   *tiqra*
Laila   want.3SG.F   read.3SG.F
shu-ma-kan
FCI
'Laila wants to read anything.'
b. *Laila rah̲ tsafer*   *weinmakan*
Laila FUT travel.3SG.F   FCI
'Laila will travel anywhere.'
c. *mi:n-ma-kan yigdar ygadim*
FCA   can.3SG.M apply
La-l-jam͡ah
to-the-university
'Anyone can apply to the university.'
d. *tigdari trudi ͡ala risalti*   *eimta-ma-kan*
can reply.SG.F to my.letter whenever
'You can respond to my letter whenever (you want).'

FCIs are restricted by non-episodicity (Giannakidou 2001); that is, they appear only in contexts that make no reference to a particular event. This is why negative episodic statements, as well as positive ones, do not license FCIs; these contexts do not refer to a specific event:

(9) *Ali ma*   *shaf*   *mi:n-ma-kan*
Ali NEG   saw.3SG.M   FCI
'*Ali did not see whoever.'

The distinction between NPIs and FCIs will become significant to the discussion in section 3 when I show that in JA some items are ambiguous between NPIs and FCIs.

To characterize the wide range of contexts that license NPIs, Giannakidou (1998), Zwarts (1995), among others, propose that NPIs are licensed in the domain of non-veridical (NV) operators. An NV operator does not entail the truth of the proposition it embeds. If the truth of a proposition p is not entailed in the domain of an operator F, then F is a non-veridical operator. The NV theory explains the

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[1] The first work to introduce FCIs is Vendler 1967.
[2] Throughout the paper, I will use the following symbols in the Arabic sentences: h̲ = voiceless

ungrammaticality of NPIs in the context of positive existentials, for instance. These contexts do entail the truth of their propositions. In (10b), it is entailed that there is a mouse in the basement, which is why *any* is unacceptable here.

(10) a.*There is any mouse in the basement.
  b. $\exists x \exists w$[x is a mouse and x is in the basement in w].

The NV theory also captures NPI licensing in DE contexts because DE contexts are also NV. In (11a) and (12a), *any* is licensed because the negative operator and the protasis of the conditional do not entail the truth of the propositions they embed, respectively.

(11) a. The lawyer did not find any witness to testify in favor of her client.
  b. $\neg \exists x \exists w$[x is a witness and the lawyer found x to testify in favor of her client in w].

(12) a. If the government passes any laws to ban refugees from entering the country, hundreds of protests will erupt across the country.
  b. $\exists x \exists w$[x is a law and the government will pass x this month in w].

The NV theory also explains NPI licensing in YN questions. YN questions are non-veridical because they do not entail the truth of the proposition, as shown in (13) for (4a) above.

(13) $\neg \exists x \exists w$[x is a vegetable and you are getting x from the grocery store in w].

The NV theory, however, does not predict the pattern of NPI licensing in some veridical contexts (Horn 1996, Giannakidou 2006). For instance, English *any* and a class of NPIs called minimizers (e.g., a *red cent*) are licensed in the scope of *only*, which is a veridical context. In (14a), the proposition that *only* scopes over is entailed to be true; still, the sentence licenses the NPI. The same applies to (15a), in which a minimizer is licensed in the scope of *only*.

(14) a.Only John read anything.
  b. $\exists x \exists w$[John read x in w].

(15) a.Only John gave a red cent to charity.
  b. $\exists x \exists w$ [x is a red cent and John gave x to charity in w].

Horn (1996) argues that NPIs are licensed in the scope of *only* by virtue of the negative assertion it invokes. *Only John ate a vegetable* asserts that Nobody other than John ate a vegetable. The negative indefinite is what licenses the NPI here. Giannakidou (2006) explains the behavior of *only*

by assuming a 'rescuing' mechanism. An expression is rescued in the scope of a veridical operator if the proposition's global context C makes a proposition S' that has an NV operator available. The global context includes a set of propositions that arise from an expression without necessarily being entailed by it. In (16), *only* invokes negated focus alternatives that rescue the NPI.

(16) a.?Only John read anything.
  b. The sentence presupposes that John read something $(=(=\exists x \exists w$[John read x in w]) and asserts that no one else read anything $(=\forall x.x$ is not John $\rightarrow \neg \exists y.x$ ready)

The rescuing strategy, nonetheless, does not seem to be an attractive explanation of the facts. It is not clear what factors control this strategy, and why other veridical contexts do not allow it. As shown above, both DE and NV theories have scopal issues: NPIs appear in domains outside the scope of the domains each of the theories defines as NPI licensing. In the next section, I show that JA does not allow NPIs in non-DE domains, making the DE theory more superior to the NV theory. In order to achieve this goal, two main issues need to be addressed: (i) NPI licensing in YN questions, which are non-DE, and (ii) NPI licensing in other non-veridical contexts that also license free choice items. In particular, I will show that JA does not license NPIs in YN questions, and licenses NPIs in non-DE contexts only when they have free choice reading. This will leave us with the generalization that NPIs are only licensed in DE contexts in JA.

2. The Distribution of NPIs in JA
JA shows two classes of NPIs: (i) NPIs that are only licensed in the domain of sentential negation, and (ii) NPIs that are licensed in the domain of DE operators. Benmamoun (1997) introduces two NPIs from Moroccan Arabic, the JA equivalent of which are *ishi* 'thing' and <u>*hada*</u> 'person':

(17) *jibt-i   ishi   ma^c=ik   min*
  bring-2SG.F thing   with-2SG.F from
  is-su:g?
  the-market
  'Have you brought anything from the market with you?'

(18) *shift   hada/ishi   ghari:b*
  see.2SG.M person/thing suspicious
  bi-l-karaj?
  in-the-garage
  'Have you seen anyone/anything suspicious in the garage?'

These items do not seem to be NPIs, as they have free distribution, which means that they are not sensitive to negative polarity. Below are some examples form Modern Standard Arabic (but the

same holds for JA):

(19) Ishtara   Ali   shay?-an   min
    buy.3M.SG   Ali thing-ACC   from
    al-su:q
    the-market
    'Ali bought something from the market.'

(20) hunak ahad-un   qad tasalala ila
    EXIS person-NOM PERF sneak in
    mazraᶜat-i=na
    farm-GEN=1pl
    'There is someone who has sneaked in
    our farm.'

(21) Fi   hada   itaSal   maᶜ=ak
    EXIS person call.3SG.M   with=2SG.M
    il-yoom
    the-day
    'There is someone who has called you
    today.'

(22) Salma haka-t inha simᶜa-t   ishi
    Salma say   that heard.3SG.F thing
    bi-l-hadi:qa
    in-the-garden
    'salma said that she heard something in the
    garden.'

In terms of the typology proposed by Nam (1994)
and van der Wouden (1994), the first class is
referred to as *strongest NPIs*, whereas the second
one is called *weak NPIs*.³ *Hatta-lauu* 'even-if' is a
strongest NPI:

(23) *Salma ma nasharat hatta-lauu ktab*
    S.   NEG publish-3SGF even-if book
    'Salma didn't publish any book.'

(24) *lauu lag-at   Salma hatta-lauu*
    If   find-3SG.F Salma even-if
    waTHi:fah ma safar-at
    job   NEG travel-3SG.F
    'If Salma found any job, she wouldn't leave the
    country.'

(25) *jar=na   ishtara*
    neighbor=1PL.POSS buy.3SG.M *hatta*-lauu
    sayyarah?
    even-if car
    'Did our neighbor buy any car?'

(26) *wala talib   b-il-qisim*
    No student   in-the-department
    katab hatta- lauu bahth

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³JA does not exhibit a third class in Nam and van der
Wouden's classification, which they call strong NPIs,
those that are licensed in the domain of anti–additive
operators. I will not seek to explain this gap in this
paper.

wrote even-if   paper
    'No student in the department   wrote any
    paper.'

(27) *koll elmuatin-i:n ?illi khadamu*
    All the.citizens who serve.3PL.M
    hatta-lauu shaher   bil-jaish
    even-if a.month in-the-army
    t-karam-u
     PASS-honor-3PL.M
    'All the citizens who had served in the army
    at any time were honored.'

    Weak NPIs, on the other hand, are licensed in
all DE contexts, including sentential negation.
Examples of weak NPIs in JA are *ayy* 'any' and
lauu 'even'.

(28) *Nuha ma bid-ha   tishtari*
    Nuha NEG want-3SG.F buy
    ayy/lauu fustan
    any/even dress
    'Nuha does not want to buy any dress.'

(29) *idha Kamal safar la ?ayy/l-lauu*
    If Kamal travel to any/even
    dawlah rah yji:b   hadiyah
    country fut bring.3SG.M present
    la-?umm=uh
    for-mother=3SG.M.POSS
    'If Kamal travels to any country, he will
    bring a present for his mother.'

(30) *koll it-tullab   ?illi ᶜindhum*
    All the-students   who LOC
    ayy su?al yrajᶜ-u
    any question   report.to-3PL.M
    al-mudarris
    the-teacher
    'All the students who have any questions
    should report to the teacher's office.'

(31) *wala maktabah   fi Istanbul*
    No library in Istanbul
    tbi:ᶜ ayy ktab bi-l- al-ᶜarabiyah
    sell any book in-Arabic
    'No library in Istanbul sells any/even a book
    in the Arabic language.'

    Weak NPIs also include minimal nouns, referred
to as minimizers, such as *fils ahmar* 'red cent'
(owing to Alsarayreh (2012)). Minimizers can be
verbal, like ᶜ*abbar* 'give a damn'. These also appear
in all DE contexts:

(32) *Ali ma dafaᶜ   fils ahmar*
    Ali NEG pay.PST.3SG.M   cent red
    la-zakah
    to-the-charity
    'Ali did not pay a red cent to the c   harity.'

(33) *idha   Ali dafaᶜfils aḥmar*
If   Ali pay.SG.M   cent red
la-zakah, al-ḥukumah   rah
for-charity the.government FUT
ti-ᶜfi=h   min   al-THarayib
exempt=3SG.M from   taxes
'If Ali pays a red cent as a donation, he will be tax exempt.'

(34) *koll al-muaṯin-i:n ?illi dafaᶜ-u fils*
all the-citizens   who pay cent
aḥmar lalḥukumah   safaru
red   to.the.government travel
'All the citizens who paid a red cent to the government left the country.'

(35) *Wala waḥad ᶜabbar ishaᶜit*
No one give.a.damn.about rumor
Innuh fi nifayat nawawiyah bil-balad
that EXPL waste nuclear in-country
'No one gave a damn about the the rumor that there is nuclear waste in the country.'

Unlike many languages, including English, JA does not license NPIs in YN questions (36). NPIs are not licensed in embedded questions either (37).

(36) a.*qara?t-i   ayy ktaab*
read-2SG.F   any book
'Did you read any book?'
b. *??jibt-i ayy ishi maᶜik*
bring.2SG any thing with.2SG.F
min is-su:g?
from the-market
'Have you brought anything from the market?'

(37) **Laila sa?alat idha qara?t ?ay ktab*
Laila asked if   read-1SG any book
'Laila asked whether I read any book?'

The behavior of YN questions in Arabic is not expected given that many languages do license NPIs in this domain. There are two ways this can be explained. First, Arabic YN questions take the form of a statement, which might be the reason of the lack of licensing. The second is to assume that YN questions themselves are not licensing domains at all. However, some languages allow NPIs in YN questions because of the negative entailment a YN question invokes, as suggested by Baker (1970).

Weak NPIs may also appear in non-DE contexts, including modals, imperatives, and the complement of intensional verbs (e.g., *want*):

(38) *Sami bidd-u Muna tishtariluh*
Sami want-3 Muna buy.for.him

ayy   ktab
any/even book
'Sami wants Mona to buy any book for him.

(39) *kol iṯṯullab   lazem   yigadm-u*
all the-students must give.3PL.M
?ay tabaruᶜ la.tarmi:m
any donation for.renovation
il-madrasah
theschool
'All students must give any donation for the school's renovation.'

(40) *ru:h   iḥki   maᶜ ayy/lauu waḥad*
go.IMP talk.IMP with any/even one
ta ysaᶜd=ak
to help.INF.3SG.M=3SG.M
'Go talk to anyone to help you.'

The NPIs that appear in these non-DE domains are, in fact, semantically distinct from those that occur in the DE contexts. For one, native speakers report that when *ayy* and *lauu* occur in non-DE contexts, their meaning involves vagueness, variation, and/or free choice. For instance, sentence (41a) can be paraphrased as 'if there is a book, Muna will buy it, no matter what it is,' as formally represented in (41b).

(41)   a. Muna rah ti-shtari   ayy ktab
 Muna   fut buy any book
'Muna will buy any book.'
b.∀W[∃x [BOOK(x)(w)→BUY(m, x)(w)]
'For all w, there exists x such that, if x is a book, Mary will buy x in w.'

Choice and variation do not arise when *ayy* and *lauu* appear in DE contexts, though. Instead, they are interpreted as existential quantifiers with no world variable. That is, they do not invoke possible world readings.

(42)   a. *Muna ma ishtara-t   ay ktab*
 Muna NEG buy any book
'Muna did not buy any book.'
b. ¬∃x[BUY (m, x)]
'There is no book x, such that Muna bought x.'

I take this difference to indicate that *ayy* and *lauu* can be NPIs in some contexts and FCIs in others, following previous work (e.g., Dayal's (2004) analysis of *any*). I assume that the FC versions of *ayy* and *lauu* have a null morpheme, which gives them their intensional nature. This morpheme introduces a world variable that must be bound by a special operator that can only arise in specific contexts, like imperatives, modals, intensional verbs, among others.

The ambiguity analysis predicts that in contexts that give rise to alternatives like generics, habituals, directives, and modality, *ayy* and *lauu* give an FC reading as opposed to the existential reading an NPI gives. In (43a), the (null) generic operator (which is assumed to be operative at the Logical Form (LF)) licenses the FC *ayy*. I assume that there is a null world variable in *ayy* that is bound by this generic operator (43b).

(43)   a. *ayy shakhs   yḥib   as-safar*
          any person   like   the-traveling
       'Any person likes traveling.'
       b. $\nvdash w[\exists x LIKE(x,t)\ (w)]$:in each possible world, there is a person (not specific) such that he/she likes traveling.
          c. $\exists x[LIKE(x,t)]$: there exists a person in the actual world such that this person likes traveling.

Note that the existential reading (i.e., the NPI reading) here is unavailable because of the lack of a DE operator (43c). In contrast, in DE contexts, *ayy* and *lauu* are interpreted as existentials, as we have seen in various examples above.

Ambiguity may arise if two operators take scope over the item: one is a Q-operator (modal or generic) and the other a DE operator, as illustrated below.

(44)   a. *Muna ma raḥ____tsafir*
          Muna NEG FUT travel.3SG.F
       l-ayy   dawlah
       to-any country
       'Muna will not travel to any country.'
       b. $\neg \exists x[T\ RAV\ EL(m,\ x)]$: there does not exist a country in the actual world such that Muna will travel to thatcountry.'
          c. $\nvdash w^t \subset w, \exists x[\neg TRAVEL(m,x)(w^t)]$, in each world in a subset of possible worlds that is compatible with *Muna traveling to a country*, there exists a country such that Muna will not travel to it.'

Turning to syntactic restrictions, there seems to be a locality restriction on NPI licensing of NPIs in JA. The strongest NPI *hatta-lauu* that appears in an embedded clause cannot be licensed by matrix negation (44b, 45b). Only negation in the embedded clause makes this NPI licit (44a, 45a).

(45)   a. *Salma gala-t [CPinn=u Ali ma*
          Salma say   [CP that=it Ali NEG
       Ishrara ḥatta-lauu   ktab   min
       buy   even-if   book from
       il-bazaar]
       the-bazaar]
       'Salma said that Ali did not buy any book from the bazaar.'
       b.**Salma ma gala-t   [innu Ali*

Salma NEG say that   Ali
ishrara ḥatta-lauu   ktab min
 buy   even-if book from
il-bazaar]
the-bazaar]
'Salma did not say that Ali bought any book from the bazaar.'

(46)   a.*Ali biyfakr innu Salma ma raḥ*
          Ali think   that Salma NEG fut
       tlagi ḥatta-lauu waTHi:fah
       find even-if   job
       'Ali does not think that Salma will find any job.'
       b. **Ali ma biyfakr innu Salma raḥ*
          Ali neg think   that   Salma fut.
       tlagi ḥatta-lauu   waTHi:fah
       find even-if   job
       'Ali does not think that Salma will find any job.'

Weak NPIs also require strict locality although generally weak NPIs crosslinguistically do not (e.g., English *any*). An embedded minimizer requires a local DE operator. A matrix DE operator cannot do the licensing (47b). The same facts hold when the licenser is the anti-additive quantifier *wala* 'no' (48b).

(47)   a. *Rula tfakir [CP inn=u Sami ma*
          Rula think [CP that=it Sami NEG
       ᶜabbar   THyu:f-uh
       give.damn.about guests=3SG.M
       bi-l-ḥaflah]
       in-the-party]
       'Rula thinks that Sami did not give a damn about his guests at the party.'
       b. **Rula ma tfakir [CP inn=u Sami*
          Rula NEG think [CP that=it Sami
       ᶜabbar   THyu:fuh
       give.a.damn.about guests=3SG.M
        bi-l-ḥaflah]
        at-the.party]
        'Rula does not think that Sami gave a damn about his guests at the party.'

(48)   *a.wala ṭalib ᶜabbar   kalaam*
         No student gave.damn.about speech
       al-istadh   ᶜan al-inTHibaṭ
       the-teacher.m   about the-discipline
       'No student gave a damn about the teacher's speech about (maintaining) discipline.'
       b. **[CP2wala ṭalib ḥaka [CP1 in=nu*
          no student said   [CP1 that=it
       Muna ᶜabbar-at   Jane]]
       Muna give.a.damn.about   Jane]]
       'No student said that Muna gave a damn about Jane.'

(49)   a.*Rula gala-t   [CP inn=u Sami   ma*

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Rula say [CPthat=it Sami NEG
dafaᶜ ayy/lauu ṣadaqah]
pay any/even donation]
'Rula said that Sami has not donated anything.'
b. *Rula ma gala-t [CP inn=u Sami
Rula NEG say-3SG.F [CP that=it Sami
dafaᶜ   ayy/lauu ṣadaqah]
pay.3SG.M   any/even donation]
'Rula did not say that Sami had given any donation.'

The same locality constraint applies to the restriction of the universal quantifier *koll* 'all'. Note that while it is grammatical for a weak NPI to appear in the clause that restricts the universal quantifier (50a), it is ungrammatical for it to appear in a clause embedded further in the restricting clause (50b).

(50) a.*koll iṭ-ṭalibat   [CP1?illi ṣarafin*
All the-student.PL.F [CP1 who spent
girsh ahmar]   ᶜala elmashru:ᶜ
cent red on the.project
rah yi-tᶜawaTH-in]
fut PASS-compensate-3PL.F]
'All the students who spent a red cent on the project will be reimbursed.'
b.*[CP3koll al-banat [CP2?illi   Maha*
   [all the-girl.PL.F [CP2 whom Maha
fakara-t[CP1inn=uh ᶜabbar-in Sami
think   [CP1that give.damn.about Sami
tzawaj-in]]]
get.married.PST-3PL.F]]]
'All the girls that Maha thought that (they) gave a damn about Sami got married.'

To summarize, JA has two classes of NPIs: strongest and weak. The former is licensed in the domain of sentential negation, whereas the latter is licensed in all DE domains. Weak NPIs have FC counterparts that are licensed in the non-DE domains. Crucially, YN questions do not license NPIs in JA. This makes DE the best semantic characterization of the licensing domains. As for syntactic constraints, all NPIs in JA, whether strongest or weak, require a local licensor. I summarize the semantic distribution of JA's NPIs and FCIs in Table 1.

	1	2	3	4
Episodic Negation	√	√	√	*
Protasis of Conditional	*	√	√	*
Restriction of *koll* `all'.	*	√	√	*
DE-Quantifier	*	√	√	*
Episodic YN Qs	*	??	??	*
Imperatives	*	*	*	√
Modals	*	*	*	√
Directives	*	*	*	√
Intensional Verbs	*	*	*	√
Generics	*	*	*	√
Habituals	*	*	*	√

Table 1: The Semantic Distribution of NPIs and FCIs in JA (1=hatta-lauu, 2=minimizers, 3=NPI-ayy/lauu, 4= FC-ayy/lauu)

3. Analysis
Before I propose an analysis of NPI licensing in JA, I will provide the necessary background. Kadmon and Landman (1993) propose that *any* widens the quantificational domain that would otherwise be considered. Domain widening leads to strengthening in the scope of a DE operator. Widening in non-licensing domains leads to weakening. In (51b), *any* widens the domain of friends that the hearer should consider unnecessarily, causing the sentence to be weak or less informative.

(51) a. Julia invited a friend to her graduation ceremony.
b. *Julia invited *any* friend to her graduation ceremony.

On the other hand, in DE contexts, domain extension makes the statement stronger and more informative. In (52), *any* widens the domain of friends to include all sets of possible friends, and by negating this widened domain, the proposition that 'Julia did not invite a friend' becomes stronger.

(52) Julia did not invite any friend to her graduation ceremony.

Chierchia (2004) proposes that the domain expansions triggered by the NPI must be universally closed, and this closure must lead to strengthening, making the proposition more informative.

(53)   Strengthening/blocking
Domain expansions must be universally closed. Such closure must lead to strengthening with respect to the meaning of the plain indefinite. (Chierchia 2004, 76, 113)

Chierchia points out that although strengthening is a pragmatic effect that should be checked globally, the actual licensing of the NPI/quantificational closure is accomplished syntactically, respecting locality restrictions. The licensing takes the form of feature checking: a head with a [+DE] feature

checks that feature on the NPI via AGREE (Chomsky 2001). This assumption is not new. As brought to my attention by an anonymous reviewer, van der Wouden (1994: 58) also makes a similar assumption about Dutch; he assumes that the embedded clause under matrix negation is anti-additive, which is what the analysis proposed here does: it endows the clause in the scope of negation/DE-operator with some semantic property/feature. Also, as pointed out to me by the same anonymous reviewer, the analysis here has similarities to Laka (1994) in which it is assumed that negative predicates (e.g., *deny*) select a clausal complement in which the complementizer is endowed with [+NEG] feature.

To illustrate in English, in (54a), two [+DE] feature-bearing heads take scope over the NPI; widening does not lead to strengthening because the global domain is positive; still, the NPI survives. Here the NPI is licensed by the most local [+DE] bearing head, which is the embedded negation.

(54) (Chierchia 2004, 73, (107))
    a. It is not true that there aren't any potatoes
    b. Value onstandarddomain:
    $\neg\neg\exists\,D$x[potatoes(x)
    c. Value onwiddeneddomain:
    $\neg\neg\exists\,_{g}(D)$x[potatoes(x)]

Turning to JA, as shown in section 3, NPI licensing in JA is restricted by syntactic locality, whether the NPI is strongest or weak. To capture the locality, I will assume that CP is a phase (Chomsky 2001) and quantificational closure is accomplished by AGREE between the phasal head C and the NPI. Structures are built counter-cyclically, in a top-down fashion. Two instances of AGREE occur during the derivation. The first is AGREE between the phasal head and the lexical item that triggers the licensing. The second AGREE occurs between C and the NPI, resulting in checking of undefined features on the NPI. I define the licensing condition of NPIs in JA below:

(55) **Licensing of NPIs in JA**
 a. Weak NPIs are licensed in the local domain of a C with [+DE] feature.
 b. Strongest NPIs are licensed in the local domain of a C with [+DE,+NEG] features.
 c. C acquires the [+NEG] or [+DE] feature via AGREE with a local head with the relevant feature, or inherently if it is a conditional C (in the protasis).

As is clear from the condition above, the difference between a domain that licenses a weak NPI, and one that licenses a strongest NPI is in the [+NEG] feature, which provides a further restriction of the licensing domain. Assuming a double-feature system is not unprecedented.

Nishiguchi (2009) assigns three features: strong, medium, and weak to strong negation (see Nishiguchi's original work for details).[4] To show how the analysis works for (23), which I repeat below in (56), the NPI is a strongest NPI that must be locally licensed in the scope of negation. I assume that the sentence is a CP. C carries the licensing feature, which it gets via AGREE with the negative marker *ma*, as shown in Figure 1 below.

(56) *Salma ma nashara hatta-lauu*
    Salma NEG publish.3SG.F even-if
    ktab
    book
    'Salma didn't publish any book.'
    Figure 1: NPI Licesning via AGREE

Then, C, which is now valued for [+DE, +NEG] features enters in AGREE with the NPI, checking its undefined features. This agreement results in quantificational closure, as illustrated in Figure 2.
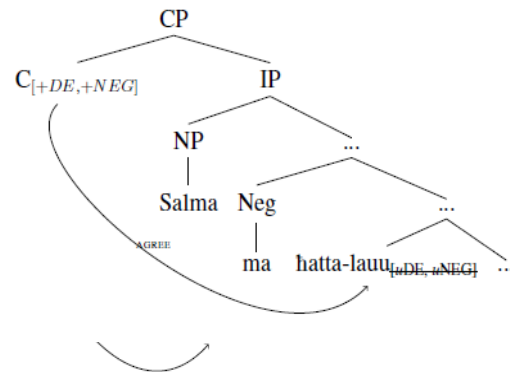

Figure 2: NPI Licensing via AGREE

A non-local licensor does not license an NPI. A C with NPI licensing features does not go beyond the CP phase it heads. To illustrate this for (45b), reproduced below for convenience, after C values its features by agreeing with the matrix negative marker, AGREE with the NPI fails to occur because there is an intervening phasal node, causing the derivation to crash.

(57) **Salma ma gala-t [$_{CP}$ inn=u Ali ishrara*
    Salma NEG say   [$_{CP}$ that=it Ali   buy
    hatta-lauu ktab   min il-bazaar]
    even-if   book   from the-bazar]
    'Salma did not say that Ali bought any book from the bazaar.'

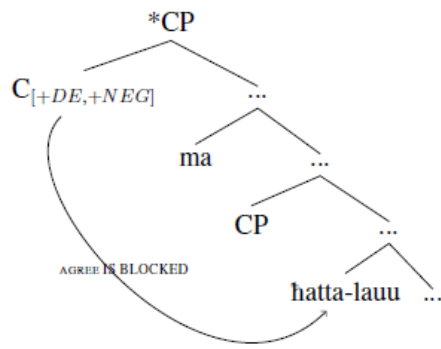[4]This fact was brought to my attention by an anonymous reviewer.

Firgure 3: Locality in NPI Licensing

If we turn to other DE domains, like the restriction of the universal quantifier *koll* `all', the locality of NPI licensing can also be explained. For example, the licensing mechanism I propose derives the contrast between (58a) and (58b).

(58) a. *koll al-banat   ?illi s̱araf-in girsh*
      all the-girls   who spent.3PL.F cent
      aḥmar   ḥidr-in   al-ḥaflah]
      red   attend.PST-3PL.M the-party
      'All the girls who spent a red cent attended the party.'
   b. *[koll albanat ?illi ḥidr-in alḥaflah]*
      All the.girls who attend the.party
      s̱araf-in girsh aḥmar]
      spent-3PL.F   cent red]
      'all the girls who attended the party spent a red cent.'

In (58a), the NPI licensing context is the CP that restricts the domain of the universal quantifier. The complementizer of the restriction values its downward entailment feature by agreeing with the universal quantifier *koll*, as diagramed below.
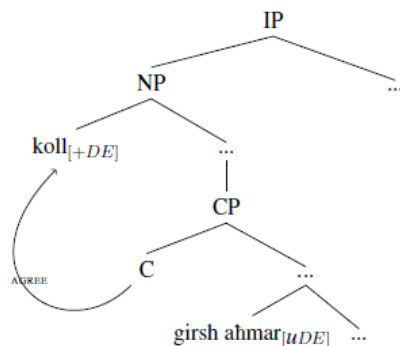

Figure 4: AGREE between the Universal Quantifier and C

The C, in turn, agrees with the NPI inside the restricting clause, resulting in quantificational closure (Figure 5).
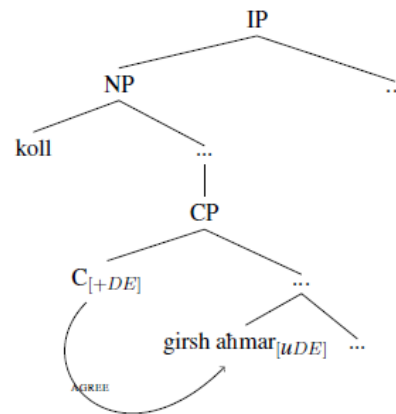

Figure 5: AGREE between C and the NPI

NPI licesning is impossible in (58b), on the other hand; the C of the restricting clause cannot license an NPI in the matrix clause because it falls outside the phase of the licensing C.

The analysis derives NPI licensing in all the other DE domains in the same way. In the protasis of the conditional, for instance, the NPIs are licensed by a C with an inherent [+DE] feature. I assume that along with the commonly assumed conditional feature [+COND] that marks the protasis, there is also a [+DE] feature. This explains why the consequent clause does not license NPIs (59); it lacks such a feature.

(59) *idha Ali safar   alsuᶜu:diyah,
     If Ali traveled.3SG.M   Saudi.Arabia
     Raḥ yi-dfaᶜ fils aḥmar lal-zakah
     FUT pay cent red   for-the-donation
     '*If Ali traveled to Saudi Arabia, he will pay a red cent as a donation.'

Licensing in the protasis is also restricted by locality. It is ungrammatical for a weak NPI to occur in a clause embedded within the protasis (60). Again, this restriction is captured by my analysis by allowing only the phasal node to check the NPI within the phase.

(60) *idha Ali gal inn.u   dafaᶜ   fils
     if Ali said.3SG.M that.pay.3SG.M cent
     aḥmar ka-zakah, mish raḥ
     red as-donation NEG FUT
     a-Sadig=uh
     PRES.1SG-belive=3SG.M
     'If Ali said that he will pay a red cent as a donation, I will not believe him.'

The analysis proposed above provides a simple account of the locality restrictions in JA. It also shows the different components of the grammar interface in NPI licensing: semantics, pragmatics and syntax. Semantics defines the class of NPI licensors; pragmatic principles motivate the

need for quantificaitonal closure (informativeness); syntax forces locality (AGREE and phases).

Conclusion

To conclude, in this paper, I have demonstrated that the DE theory better accounts for the distribution and licensing of NPIs in JA. That YN questions do not license NPIs in JA and my contention that the occurrences of some NPIs in non-DE domains are FCIs give the DE theory a better stand than the NV theory for JA. The analysis also shows that different components of the grammar interface in the licensing of NPIs, which is an issue that is yet to be investigated for many other phenomena that fall in the area between syntax and semantics or pragmatics. There is still the question of whether this analysis can be generalized to other languages, which I leave for future research.

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