ONLY, EMOTIVE FACTIVE VERBS, AND THE DUAL NATURE OF POLARITY DEPENDENCY

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The main focus of this article is the occurrence of some polarity items (PIs) in the complements of emotive factive verbs and *only*. This fact has been taken as a challenge to the semantic approach to PIs (Linebarger 1980), because *only* and factive verbs are not downward entailing (DE). A modification of the classical DE account is proposed by introducing the notion of nonveridicality (Zwarts 1995, Giannakidou 1998, 1999, 2001) as the one crucial for PI sanctioning. To motivate this move, it is first shown that two solutions in the direction of weakening classical monotonicity do not work: Strawson DE (von Fintel 1999) and weak DE (Hoeksema 1986). Weakening DE systematically either overgenerates or undergenerates, in either case failing to characterize the correct set of licensers. Nonveridicality is introduced as a conservative extension of DE and is shown to account for PIs also in contexts that are not DE (i.e. questions, modal verbs, imperatives, directive propositional attitudes). This theory, augmented with the premise that certain PIs (i.e. the liberal class represented by *any*) are subject to a weaker polarity dependency identified not as LICENSING but as RESCUING by nonveridicality, explains the occurrence of this particular class with *only* and emotive factive verbs. Crosslinguistic comparisons illustrate that the occurrence of PIs with *only* and emotive factives is not a general phenomenon, and further support the dual nature of polarity dependency and the semantic characterization of the elements that license or rescue PIs.*

1. POLARITY-ITEM LICENSING AND THE PROBLEM OF *only* AND EMOTIVE FACTIVES. The licensing of POLARITY ITEMS (PIs) is a central issue in linguistic theory, one that has received considerable attention since Klima's (1964) seminal work on English negation. In earlier works the main goal has been to describe the conditions under which English PIs like *any* and *ever* appear, but recent crosslinguistic studies have extended the empirical domain of polarity and made obvious a complexity that in the earlier works went unnoticed. We now know that *any* is one of many PI paradigms in the world's languages, and that the various PIs are not subject to identical distributional restrictions. At the same time, in order to predict whether an expression can act as a licenser, we have come to expect a coherent and relatively homogenous characterization of the set of expressions that allow PIs within and across languages.

Ladusaw 1979 established that we can indeed unify the class of PIs licensers in terms of a semantic property they share. This property is identified as DOWNWARD ENTAILMENT (DE), and a licensing condition like 1 is proposed.

   (1) Ladusaw's (1979) licensing condition
       α is a trigger for negative polarity items in its scope iff α is downward entailing.[1]

  [1] This condition talks about 'negative polarity items' (NPIs), relying on the opposition between negation and affirmation. But this is not exactly the central contrast observed with *any*, since *any* is good in many environments that have nothing to do with negation, for example, questions, conditionals, and restrictions of universal quantifiers, as well as modal verbs, imperative, and generic structures (in its free-choice incarnation); I discuss this variation later on. At any rate, it seems more accurate to talk about PIs and to employ

A TRIGGER is an expression in the sentence whose presence is necessary in order to make a PI legitimate; a trigger is more commonly known as LICENSER, and I have more to say about it in the course of the article. Unlike upward-entailing (UE) functions, which are order-preserving and closed under supersets, DE functions are order-reversing and closed under subsets. Both are illustrated below (the definitions rely on Zwarts 1986, Kas 1993).

> (2)   Definition 1: Upward-entailing function
>   A function f is upward entailing iff for every arbitrary element X,Y it holds that: $X \subseteq Y \rightarrow f(X) \subseteq f(Y)$
> (3)   Definition 2: Downward-entailing function
>   A function f is downward entailing iff for every arbitrary element X,Y it holds that: $X \subseteq Y \rightarrow f(Y) \subseteq f(X)$

UE functions support inference from sets to supersets and are upward monotone. DE functions, by contrast, allow inference from sets to subsets and are downward monotone. In DE contexts, expressions denoting sets can be substituted for expressions denoting subsets *salva veritate*. It is shown below that negation and negative QPs are DE, but *some children* validates the UE pattern (# marks an invalid conclusion).

> (4)   a.   Lucy does not like ice cream.
>   ⟦Italian ice cream⟧ $\subseteq$ ⟦ice cream⟧
>   —————————————————————
>   ∴ Lucy does not like Italian ice cream.
>   b.   No children like ice cream.
>   ⟦Italian ice cream⟧ $\subseteq$ ⟦ice cream⟧
>   —————————————————————
>   ∴ No children like Italian ice cream.
> (5)   a.   Some children like Italian ice cream.
>   ⟦Italian ice cream⟧ $\subseteq$ ⟦ice cream⟧
>   —————————————————————
>   ∴ Some children like ice cream.
>   b.   Some children like ice cream.
>   ⟦Italian ice cream⟧ $\subseteq$ ⟦ice cream⟧
>   —————————————————————
>   #Some children like Italian ice cream.

Likewise, the scope of *few* and the restriction of the universal *every* are DE, and under the DE thesis they are correctly predicted to admit PIs. *Some*, however, being UE should block PIs, as is indeed the case.

> (6)   a.   John **didn't** see anything.
>   b.   {Few/No} students saw anything.
>   c.   Every student who bought any books reported to the teacher.
> (7)   *Some student(s) saw anything.

The licensing condition based on DE proved very fruitful and inspired a number of significant contributions (Hoeksema 1986, Zwarts 1986, 1998, Kas 1993, Dowty 1994, van der Wouden 1994, among many others). One also finds references to licensing environments as non-UE, as in Postal 2000 and Progovac 1994, obviously relying on the semantic characterization of licensers as DE. The shared enthusiasm of the two

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the term NPIs for those PIs that are indeed identifiable as being licensed only by negation and the like. This is the practice I follow here.

groups centers on finally being in a position to characterize semantically the class of PI-licensers, a major advance over alternatives that either stipulated the (semantically undefined) 'grammatico-semantic' feature [affective] (Klima 1964) or advocated purely pragmatic conditions based on generalized conversational implicature (Baker 1970, Linebarger 1980).

Any, however, and English minimizers (i.e. PIs containing an expression of minimal amount such as *sleep a wink*, *say a word*, *budge an inch*) are also known to appear in the scope of *only* and in the complements of factive emotive verbs that seem negative: [2] for example, *regret*, *be surprised*, and the like (Klima 1964, Baker 1970, Linebarger 1980, Atlas 1993, 1996, Horn 1996, von Fintel 1999).

(8) a. Only Larry ate anything.
     b. Only Larry slept a wink.
(9) a. Larry regrets that he said {anything/a word}.
     b. *Larry is glad that he said {anything/a word}.

Klima talks about *only* and 'adversatives'—a class including negative emotive predicates such as *surprised*, *ashamed*, *stupid*, *absurd*, *refused*, *reluctant*—as being AFFECTIVE (Klima 1964:314–15). A positive emotive verb, by contrast, is not affective and does not admit PIs, as shown in 2b. Notice, however, that factivity in general is not a sufficient condition for PIs: factive verbs that are not emotive, such as *know*, do not allow *any*.

(10) *John knows that Bill said anything.

The epistemic factive verb *know*, as we see, excludes PIs, and in this it contrasts with the nonfactive epistemic verb *wonder*, which licenses PIs.

(11) John is wondering whether Bill said anything.

The contrast between *know* and *wonder* suggests that epistemic factivity blocks PIs, a fact also supported crosslinguistically (Giannakidou 1999). When it comes to Klima's adversative predicates, then, it must be the emotive character that plays the key role in allowing PIs, and I try to make this precise below.

The occurrence of PIs with *only* in 8, as well as the grammaticality of 9a and its contrast with 9b, contradict the DE thesis that PIs are licensed in the scope of DE expressions, because *only* and negative factives are not DE. *Wonder* in 11 is also a problem because it is an intensional verb, and such verbs are known to be nonmonotone (Keenan & Faltz 1985, Asher 1987, Heim 1992).

(12) Only Larry ate a vegetable. $\not\rightarrow$ Only Larry ate broccoli.
      Larry may have eaten spinach, for instance.
(13) Larry regrets that I bought a car. $\not\rightarrow$ Larry regrets that I bought a Honda.
      Because, in fact, I bought a Ferrari, and Larry might not regret this at all.

Only and negative factives, then, license PIs IN VIOLATION of the DE condition, and this has been used by Linebarger (1980) to launch an argument not just against DE,

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[2] In this article, I do not consider the class of so-called positive polarity items (PPIs), such as *some*, *already*, originally discussed in Baker 1970; for a recent discussion see Szabolcsi 2004. Let me also clarify that I am employing the term FACTIVE in the sense of Kiparsky & Kiparsky 1971, namely for verbs whose complements denote facts, that is, propositions that are presupposed to be true. Factive verbs are thus veridical (as shown later). Within the class of factives, again following the literature, I assume a split between epistemic factives like *know* and emotive ones like *regret* and *be glad*, which express an emotive attitude toward the complement fact. Within the emotive class, positive emotive factives generally express a positive attitude, and negative ones a negative attitude.

but against a semantic treatment of polarity altogether. The analysis I propose here should be seen as an attempt to restore the credibility of the semantic account of PI-licensing. I show that Linebarger's attack does not have the same strength if instead of DE we take nonveridicality, a notion defined as a conservative extension of DE, to be the key semantic notion for PI-licensing (as argued in Giannakidou 1998, 1999, Zwarts 1995, Bernardi 2002).

The discussion in the article proceeds as follows. First, I consider recent attempts to salvage DE that come in the form of WEAK DE (Hoeksema 1986) and STRAWSON DE (von Fintel 1999). Such attempts have tried to produce a pattern of DE weaker than that of classical DE, just enough to account for the occurrence of *any* in the renegade contexts. These alternatives, however, turn out to be extremely problematic. In particular, weakening DE overgenerates (§3) and predicts general licensing across PIs and languages, contrary to fact (§4). In §5 I show that for propositional attitudes, the relevant distinction is not between positive and negative emotive factives but between epistemic and directive attitudes, a distinction not predicted by the weaker versions of DE. My conclusion is that weakening DE systematically fails to capture the correct set of facts and must therefore be abandoned. Instead of trying to bend the semantics of *only* and emotive verbs backwards in order to make them fit DE, one must take their limited capacity to sanction PIs as a manifestation of their non-DE character. I then propose an alternative analysis based on nonveridicality. Given that PIs that are licensed by nonveridicality (in Greek, Spanish, Catalan) are not admitted in veridical contexts like *only* and the complements of factive verbs altogether, the occurrence of *any* and minimizers in these cases is identified not as licensing but as RESCUING by a nonveridical inference of *only* and negative factives, in a way to be made precise in §7.

2. WEAKENING DOWNWARD ENTAILMENT. In defense of the semantic characterization of PI-licensers against Linebarger's attack, the usual tactic has been a defensive one: we somehow try to render *only* and negative factives DE.[3] Von Fintel (1999), in particular, echoing Ladusaw, states that we must check DE only after presuppositions are satisfied, and captures this in his notion of Strawson DE. Hoeksema (1986) expresses the same in his weak DE; both are defined below.

 (14) Weak DE   (Hoeksema 1986)
   If a $\in$ C and C $\subseteq$ B, then **only** a is B $\rightarrow$ **only** a is C.

C is a property given by the context; I return to this later. Here is Strawson DE.

 (15) Strawson DE   (von Fintel 1999:14)
   A (partial) function f of type $<\sigma, \tau>$ is Strawson DE iff for all x, y of type
   σ such that x $\rightarrow$ y, and *f(x) is defined*: *f*(y) $\rightarrow$ *f*(x).

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[3] Often, DE for *only* is derived by exploiting a logical form for *only* that makes it akin to a universal with the VP being the restriction rather than the scope (which is the case in the regular universal). If this is the case, then *only* should be DE in its restriction (the VP position), because the restriction of universals is known to be DE and allow PIs (see Beaver & Clark 2003, Clark 2006; also Horn 1996). But Atlas (1996) takes issue with this equivalence, and the data also militate against a crude application of it: although the appearance of PIs in the restriction of a universal determiner such as *every* seems to be relatively free, the appearance of PIs with *only* is severely restricted, as becomes evident in this article. Importantly, the Greek, Spanish, and Catalan PIs discussed later are generally licensed in the restriction of universals (as long as nonveridicality obtains), but are systematically excluded from the VP position of *only*. This asymmetry can be taken either to question the analysis of *only* as a universal determiner or to indicate that if a universal, then *only* is more akin to universal determiners such as *each* and *both*, which do not license PIs because they are veridical (Giannakidou 1998, 1999; see also discussion in this article). In either case, classical DE of *only* cannot be maintained.

Strawson DE is called 'Strawson' because it relies on a notion of Strawson validity.

(16) Strawson validity   (von Fintel 1999:19)

An inference $p_1, \ldots p_n \therefore q$ is STRAWSON VALID iff the inference $p_1, \ldots p_n$, S $\therefore$ q is CLASSICALLY VALID, where S is a premise stating that the presuppositions of all the statements involved are satisfied.

This notion of validity and the ensuing definition of DE are inspired by Strawson's work on semantic presupposition (Strawson 1950), where if the presuppositions of sentences are not satisfied, the sentences are undefined and no valid conclusion can be drawn from them. Likewise, the argument goes, if the presuppositions of the sentences that we are checking for DE are not satisfied, there will not be a monotonic inference either way. But once we satisfy the presuppositions, our hope is that *only* and negative factives will end up validating the DE pattern. Here is what Strawson DE wants to derive (C stands for the predicates '(eat) broccoli' and B for '(eat) a vegetable').

(17) a. Broccoli is a vegetable.   ($C \subseteq B$; $x \rightarrow y$)
     b. John ate broccoli.   (a is C; $f(x)$ defined)
     c. **Only John ate a vegetable.**
     d. $\therefore$ Only John ate broccoli.

(18) a. Honda is a car.   ($C \subseteq B$; $x \rightarrow y$)
     b. John bought a Honda.   (a is C; $f(x)$ defined)
     c. **Larry {regrets/is surprised} that John bought a car.**
     d. $\therefore$ Larry {regrets/is surprised} that John bought a Honda.

And indeed, these are valid Strawson-DE patterns if the propositions in (b) are part of the common ground. But are *John ate broccoli* and *John bought a Honda* truly the presuppositions of the (c) sentences with *only* and *regret*? The answer is negative. According to the analysis of *only* that von Fintel adopts (Horn 1996), *only* has the presupposition seen in 19.

(19) Only John ate a vegetable.   (Horn 1996)

Presupposes: Someone ate a vegetable.

Asserts: Nobody other than John ate a vegetable.

But the focus presupposition that *someone ate a vegetable* is different from the proposition used in 17b, which is that *John ate broccoli*. Rather, that *John ate broccoli* appears to correspond to context knowledge given irrespective of the sentence that contains *only*. If we use the actual presupposition of *only*, that *someone ate a vegetable*, we do not get DE: from *only John ate a vegetable* we cannot infer *only John ate broccoli*, since we do not know from the sentence that John ate broccoli. In other words, if we just look at the presupposition of the *only* sentence we do not get DE for *only* and are back to the original problem.

   The same thing is observed with factive verbs. Since Kiparsky & Kiparsky 1971, factive verbs as a class (epistemic *know* as well as emotive *regret*) have been known to presuppose the truth of their complement.

(20) Larry {knows/regrets} that John bought a car.

Presupposes: John bought a car.

But if we compare the actual presupposition *John bought a car* to the alleged one in 18b, that *John bought a Honda*, we conclude again that they are different, and that the proposition employed to validate the Strawson-DE pattern is merely information given by the context independently of the sentence (18c) that contains the factive verb. And again, just like with *only*, the factive presupposition alone does not give DE. In other words, the satisfaction of the subset condition—*a is C, f(x) defined*—that is crucial in

deriving weaker DE is not the actual presupposition of *only* and factive verbs. Hence the move to enable DE is not really in the direction of checking DE in contexts where the presuppositions are satisfied, as von Fintel puts it, but of validating DE in contexts where valid inference to the subset is part of the common ground. This leads to a more radical weakening and allows an undesirable degree of freedom, as further shown in §3.

And even if the subset inference is satisfied in the context, it may still be hard to get the desired DE.[4] Suppose, for example, that Larry would prefer for everyone to bicycle, rather than to drive, as a way of preserving the global oil supply. Suppose also that Larry has conditional preferences as well. For example, although he prefers that no one buy a car, he might prefer that if someone buys a car, the car should be a gassaver, like a Honda. Given this background, if Larry's friend John suddenly buys a Honda, Larry may regret that John bought a car, but given that John bought a car, Larry need not regret that John bought a Honda. Similarly, Larry might be surprised that John bought a car, but not surprised (given that John bought a car) that John bought a Honda. So, the unconstrained freedom of allowing background assumptions, not derivable by the sentences we seek to evaluate, to influence monotonicity patterns ends up backfiring, and in the end invalidates the DE pattern it was set to establish.

Notice also that the move to grant monotonicity properties to intensional verbs goes against the more usual treatments of intensional verbs as nonmonotone (Keenan & Faltz 1985, Asher 1987, Heim 1992). And to the extent that weak or Strawson DE allows a possible account of the occurrence of *any* with *only* and *regret*, unfortunately, it also predicts *any* to be systematically good with positive factives, since these too can be made to exhibit weak DE.

(21) a. Honda is a car.   ($C \subseteq B$; $x \rightarrow y$)
     b. John bought a Honda. (a is C; $f(x)$ defined)
     c. **Larry is glad that John bought a car.**
     d. ∴ Larry is glad that John bought a Honda.

But if both negative and positive factives are DE, we can no longer explain the original contrast in 9, which is not a good result. This is a first taste of the more general problem of overgeneration that comes with this analysis. Von Fintel, actually, introduces some additional assumptions in order to distinguish positive propositional attitudes from negative ones, and argues that unlike the former, the latter are upward entailing (UE), again, going against the more accepted view that propositional attitudes are nonmonotone. If positive attitudes are UE, then von Fintel correctly predicts the contrast in 9, and, at a more general level, that PIs will not occur with positive attitudes, factive or not, like *want*, *would like*, *insist*, since these are Strawson UE. We soon see, however, that this prediction is wrong.

To summarize, weakening theories of DE replace Ladusaw's original condition with that in 22, which requires PIs to be in the scope of a Strawson DE operator.

(22) Strawson-DE licensing condition
     α is a trigger for (N)PIs in its scope iff α is AT LEAST Strawson downward entailing.

By the addition of 'at least', this condition derives the results of classical DE, while at the same time making *only* and negative factive verbs perfectly expected licensers. In particular, the specific predictions in 23 are made.

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[4] Thanks to Dick Oehrle for discussion of this point.

(23) Predictions of 22
   a. Free licensing of *any* and PIs crosslinguistically as long as the context satisfies DE in the von Fintel/Hoeksema sense.
   b. Free licensing of *any* and PIs crosslinguistically with negative factives and *only*.
   c. No *any* and other PIs with positive propositional attitudes.

In the next sections the reader will see that these predictions systematically fail. The first one overgenerates, as already noted; the second enables comparisons in English and crosslinguistically that indicate that PI-licensing with *only* and emotive factives is actually not a general phenomenon and concerns only a particular subset of PIs, for example, *any*, some English minimizers, and *at all* (§4). The third prediction is violated in English as well as crosslinguistically (§5). Further, I show that the relevant distinction in propositional attitudes is one between epistemic and directive attitudes, which is not predicted by the weaker versions of DE. The conclusion will have to be that the condition in 22, or variants of it, systematically fail to capture the correct set of facts and are therefore not very helpful.

3. Overgeneration. The problem of overgeneration with weak DE was already noted by Atlas (1996:275–76): if we allow the context-givenness of a valid subset inference to influence DE, even positive sentences become DE. And if we allow this form of DE to sanction PIs, then we predict PIs in positive sentences too, as long as the subset inference is part of shared knowledge. This is shown in 24 (again, C stands for the predicates '(eat) broccoli' and B for '(eat) a vegetable').

(24) a. Broccoli is a vegetable.
   b. John ate broccoli.   (f(x) defined; j $\in$ C)
   c. John ate a vegetable. $\rightarrow$_{Strawson DE-entails} John ate broccoli.

In a context in which I know that 24b is true, we get monotonicity as in 24c; I should thus be able to sanction *any* and similar PIs even in a simple affirmative sentence, contrary to fact.

(25) a. *John ate any orange.
   b. *John ever ate.

This is clearly a result one wants to exclude since affirmative sentences (of episodic nature, like the above) are typically where PIs are NOT admitted.[5] Hence, as Atlas points out (1996), allowing monotonicity through context knowledge independent of the actual presupposition of the sentences we try to assess renders weak DE [and Strawson DE] a 'theoretically empty notion' (in Atlas's words).

   Consider further other focus structures similar in terms of the existential presupposition to *only*: clefts and focused sentences. The same problem arises, as seen in the syllogisms in 26 and 27.

(26) a. Broccoli is a vegetable.
   b. John ate broccoli.   (f(x) defined; j $\in$ C)
   c. It was John who ate a vegetable. $\rightarrow$_{Strawson DE-entails} It was John who ate broccoli.

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[5] By EPISODIC I mean involving existential quantification over an event variable: episodic sentences are about one event. As such they contrast with habitual and generic sentences where quantification is about more than one event (see Krifka et al. 1995 and Giannakidou 2001 for the significance of this difference vis-à-vis PI-licensing.).

(27) a. Broccoli is a vegetable.
    b. John ate broccoli. ($f(x)$ defined; $j \in C$)
    c. [John]$_F$ ate a vegetable. $\rightarrow_{\text{Strawson DE-entails}}$ [John]$_F$ ate broccoli.

Just like *only*, bare foci and clefts can be made weakly or Strawson DE. But contrary to what is predicted by 22, they do not license *any*.

(28) a. *It was John who talked to anybody.
    b. *[John]$_F$ talked to anybody.

If it is known in the context that *somebody ate broccoli*, which crucially is NOT the actual presupposition of the antecedent sentences in 26c and 27c, then we can infer weaker DE monotonicity, thus wrongly predicting PIs with cleft and bare focus. Again, the problem lies in the freedom of independent context knowledge to influence DE inference.

    Horn 1996 raises a related point about *even*, which does not allow PIs—*Even John {slept a wink/saw anybody}*—though, as a focus particle it carries an existential presupposition.

(29) Even John ate broccoli.
(30) Presupposition of *even*   (Karttunen & Peters 1979)
    a. Existence of alternatives
        $\exists x[x \neq \text{John} \wedge C(x) \wedge \text{ate}(x, \text{broccoli})]$, and
    b. Scalarity
        $\forall x[x \neq \text{John} \rightarrow \text{likelihood}(x \text{ eating broccoli}) > \text{likelihood}(\text{John eating broccoli})]$

Presupposition 30 is the standard presupposition of *even* in positive sentences (since Karttunen & Peters 1979, where presuppositions are handled as species of conventional implicatures). Barring the scalar component, the existential statement in 30a is pretty much like the existential presupposition we get with *only* under Horn's analysis (19); it would certainly guarantee that *someone ate broccoli*, just like *only*. Yet, only *only* allows PIs, a discrepancy that does not follow from the assumption that it is the mere satisfaction of an existential presupposition that enables DE, thus allowing PIs.

    Finally, consider the restriction of the universal determiners *both* and *each*, which, unlike the restriction of *every*, do not accept *any* (Horn 1972, Giannakidou 1998, 1999). This is illustrated in the example below, from Giannakidou 1999.

(31) a. *Both students [who saw anything] reported to the police.
    b. *Each student [who saw anything] reported to the police.
    c. Every student [who saw anything] reported to the police.

The restrictions of *each* and *both*, because these determiners come with existential presuppositions, are indeed weakly or Strawson DE in the sense of 14 and 15.

(32) a. A linguistics student is a student.
    b. *Presupposition*: There are two linguistics students that we are talking about.
    c. Both students got an A. $\rightarrow_{\text{Strawson DE-entails}}$ Both linguistics students got an A.
(33) a. A linguistics student is a student.
    b. *Presupposition*: There is a set of linguistics students that we are talking about.
    c. Each student got an A. $\rightarrow_{\text{Strawson DE-entails}}$ Each linguistics student got an A.

Thus, instead of the ungrammaticalities in 31a,b, we expect *any* to be fine uniformly in 31, contrary to fact.

There is a systematic pattern, then, indicating that weakening DE overgenerates and fails to narrow down the correct set of licensers for *any*. The problem seems to be, consistently, that we do not use just the actual presuppositions of the sentences to determine DE, but are also free to choose any background information, independent of the sentence. This creates a notion of monotonicity that is hardly semantic in nature, since it does not rely on the logical properties of the items in the sentence of occurrence and, in the end, is incapable of making any reliable predictions.

4. WHAT ABOUT VARIATION? The scope of prediction 23b can now be tested: that PIs freely occur with *only* and negative factives, since these are the minimal licensers, that is, the weakest DE triggers. It has been shown (Giannakidou 1998, 2001; see also Haspelmath 1997) that the occurrence of PIs with particles meaning *only* crosslinguistically (henceforth ONLY) and emotive factives is not a general crosslinguistic fact. For example, PIs comparable to *any* and minimizers in Greek and Spanish are not admitted with the Greek and Spanish equivalents of *only*—*mono(n)* and *solo* respectively—nor in the complements of emotive factive verbs. This is illustrated in 34 with NPIs (*kanenas*), minimizers, and free-choice items (FCIs) in Greek and Spanish.

(34) a. ***Monon** o Janis **ðini**   **ðekara**.   (Greek)
              only   the John give.3SG damn
              'Only John **gives a damn**.'
     b. ***Mono(n)** o Janis **kunise**   **to ðaxtilaki tu**.
              only   the John moved.3SG the little.finger his
              'Only John lifted a finger.'

(35)   *I   Maria **metanjose** pu **kunise**   **to ðaxtilaki tis**.
              the Maria regret.3SG that moved.3SG the little.finger hers
              'Mary regrets that **she lifted a finger**.'

(36) a. ***Ekplisome**   pu exi {**opjonðipote/kanenan**} filo.
              be.surprised.1SG that has FCI/NPI   friend
              'I'm surprised she has any friend.'
     b. ***Monon** o Janis exi **opjonðipote filo**.
              'Only John has any friend.'

(The asterisk in minimizers indicates the impossibility of the minimizer reading. The literal meaning, of course, is still available if it exists, as in the case of 'lift a finger'). We see here that Greek minimizers and PIs like *kanenan filo* are ungrammatical with ONLY and in the complement of the Greek equivalent of *regret*. Likewise, the FCI *opjonðipote filo* is ungrammatical in these contexts, as illustrated in 36. I give the relevant Spanish data in 37–39.

(37)   ***Sólo** el profesor mostró **cualquier** confianza.   (Spanish)
              'Only the teacher showed any confidence.'

(38) a. *María **se arrepintió** de **haber movido (ni) un dedo**.
              'Mary regrets that **she lifted a finger**.'
     b. *María **se arrepintió** de haber **gastado (ni) un duro**.
              'María regrets having spent a red cent.'

(39)   *María **se arrepintió** de haber publicado **cualquier** artículo suyo.
              'María regrets having published any article of hers.'

In Spanish too we see that the occurrence of PIs with ONLY and negative factive verbs is not as free as one would expect if ONLY and negative factives were the minimal

semantic licensers. Apparently, Greek and Spanish *mono(n)/solo* and emotive factives cannot license PIs, and, given that these PIs are comparable to *any* and English minimizers in not being strong, that is, licensed only by a narrow set of negative triggers, this contrast in licensing becomes really problematic.

There is one point I need to clarify in order for the reader to appreciate the severity of this problem: FCIs are indeed PIs; hence one cannot dismiss the nonoccurrence of FCIs above by invoking the FCI-NPI distinction. For one thing, notice that NPIs (i.e. *kanenas* 'anyone' and minimizers) are equally bad. Moreover, recent work has brought to light a systematic variation in polarity phenomena within and across languages—and FCIs were shown to be an important part of this variation. The polarity behavior of FCIs, including *any* (if one wishes to grant FCI-*any* distinct status), has been extensively discussed in earlier work (Giannakidou 1998, 2001, Quer 1998, 1999), where it is shown that FCIs exhibit limited distribution and are excluded from affirmative episodic sentences, the hallmark property of PIs.

> (40) *Iða   {opjonðipote/kanenan}.   (Greek; Giannakidou 2001)
>   saw.PERF.1SG   FCI.person/NPI.person
>   'I saw anybody.'
>
> (41) *Expulsaron del   partido a   cualquier disidente   (Spanish; Quer 1999)
>   expelled.3PL from.the party   ACC FCI   disidente
>   'They expelled any dissident from the party.'

We see here that FCIs are unacceptable in a positive episodic sentence, just like NPIs; and Quer (1998, 1999) gives plenty of examples illustrating the same point for Spanish and Catalan FCIs. True: the distribution of FCIs and NPIs is not identical—but it is by now well established that the various PI paradigms do not exhibit absolutely identical distributions. This is not the place to delve into an analysis of exactly what are the differences between FCIs and NPIs and how these can be explained (see Giannakidou 1998, 2001 for extensive discussion). The important point is that FCIs ARE indeed PIs, and that we have to accept this fact for FCI-*any* also. If Strawson DE is proposed as a general constraint on PIs, then variation in PI-licensing crosslinguistically and the nonlicensing of FCIs, along with NPIs and minimizers, with *only* equivalents and negative factive verbs are a big problem.[6]

To salvage DE I could still try to say that perhaps these PIs are not sensitive to the weaker form of DE but truly to the stronger, classical DE; there are, after all, degrees of sensitivity in PI-licensing regulated by monotonicity (Zwarts 1998, van der Wouden 1994), and it could just be that *kanenas*, *opjoðipote*, and *cualquiera* are stronger PIs in requiring classical DE.

The PIs in question, however, in addition to classical DE environments, also appear in a number of environments that are not DE, for example, questions, imperatives,

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[6] One might raise here the question of crosslinguistic semantic equivalencies. (Thanks to Brian Joseph for bringing this up.) For instance, one might say that Greek *monon*, Spanish *solo*, and English *only*, though overlapping in meaning and usage, are somehow not entirely equivalent. Certainly, one could almost always invoke some difference in usage between two lexical items, but using this as a criterion for nonequivalence would make it impossible to formulate predictions across languages based on the semantics. Rather, the most reliable guide seems to be truth-conditional meaning (in an extended sense to include also presuppositions), and in this sense *solo*, *monon*, and *only* are indeed equivalent: they can all be shown to be the *only* described by Horn in 19 and Atlas (1993, 1996). Hence the nonlicensing of PIs with *solo* and *monon* is indeed problematic for the weakening of DE which predicts free licensing.

modal verbs, generics, and intensional verbs. I give examples below (for more extensive examples see Giannakidou 1998, 1999).

(42) a. O Janis θa aγorasi kanena bukali krasi.   (future)
          the John FUT buy.3SG NPI   bottle wine
             'John will buy a/any bottle of wine.'

     b. Opjaðipote γata kiniγai   pondikia.   (kind-generic)
          FCI   cat hunt.3SG mice
             'Any cat hunts mice.'

     c. O Janis bori na   milisi   me {kanenan/opjonðipote}.   (modal)[7]
          the John may SUBJ talk.3SG with NPI.person/FCI.person
             'John may talk to anybody.'

     d. Iðes   kanenan   sto   parko?   (question)
          saw.2SG NPI.person in.the park
             'Did you see anybody at the park?'

     e. Pare   {kanena/opjoðipote} milo.   (imperative)
          take.2SG NPI/FCI   apple
             'Take any apple.'

There are some differences between FCIs and NPIs due to their distinct lexical-semantic content (e.g. NPIs can never refer to kinds but FCIs do, and FCIs are not licensed with episodic negation and questions; Giannakidou 2001). But the point is that ALL of the above sentences are not DE in any sense (classical or weakened), although they do admit the PIs that are not admitted with Greek ONLY and negative factives. Hence, the sensitivity exhibited by these PIs has clearly not much to do with DE, and a condition based on any form of DE would fail to characterize the proper set of licensers. This conclusion is further strengthened in the discussion next of directive propositional attitudes, which also appear to license the PIs at hand without being DE. Crucially, my conclusion carries over to *any* too, since this item is also good in the contexts mentioned here, albeit closer in interpretation to its FCI counterpart in Greek.

The problem of nonlicensing or restricted licensing of ONLY and emotive factives is also visible in English, when we consider PIs that need more 'negative' licensers.

(43) a. *Only Bill came either.
     b. *Only Bill is all that intelligent.
     c. *Only Bill arrived until Friday.
(44) a. *Bill regrets that Larry came either.
     b. *Bill regrets that Larry is all that intelligent.
     c. *Bill regrets that Larry left until Friday.

The PIs *either*, *all that*, and *until Friday* are hopelessly bad with *only* and the negative emotive verbs that typically allow *any* and minimizers (for more data on the distribution of *either* see Nathan 1999 and Rullmann 2003). We have to conclude, then, that *only* is not a free licenser; rather, it blocks stronger PIs that need a negative licenser (e.g. **Did Bill come either?*, **Did Bill arrive until Friday*? but *Bill didn't come either*, *Bill didn't arrive until Friday*), a point raised also by Atlas (1996:285) who gives similar

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[7] Notice that I am not saying that modal verbs allow PIs freely. Indeed differences have been observed, for example, PIs are much better with existential modals like *may* or *should* than with universal ones like *must*. It has also been noted that PIs are harder to get with epistemic modals (Dayal 1995, Horn 2000). These differences, however, are not central to the point I am making here, namely that modality plays a role in the occurrence of certain PIs, and this fact cannot be captured if we take DE to be the key notion for polarity (since modal contexts, just like propositional attitudes, are better treated as nonmonotone).

examples. This further suggests that *only P*, at LF, is actually not equivalent to an exceptive structure containing negation '*no x other than P*' as expected, for example, in Horn's analysis, which posits that the assertion of *only* is just a sentence with the exceptive structure. If that were the case, PIs like *either* and *until*, which need negative triggers, should be OK with *only*.

It seems fair to conclude, then, that the PIs that *only* admits are a limited class, which includes the English PIs *any*, *ever*, *at all*, and minimizers (henceforth the *any*-class). And we get a systematic contrast between comparable items in English and Greek—*any* and *kanenas*, *opjosðipote*, and Greek versus English minimizers—suggesting that the English *any*-class is more 'liberal' than the Greek PIs, in appearing with *only* and negative factives. In fact, *any* and *at all* can even appear in a plain positive sentence, if context inferencing makes salient somehow a quasi-negative proposition. Again, this is impossible with the Greek PIs.

(45) a.   Bill **is glad** that we got **any** tickets (at all).
                            (Kadmon & Landman 1993; also Linebarger 1980 for similar examples)
     b.   *O Janis xerete pu pirame {**kanena/opjoðipote**} isitirio.
              'John is glad that we got {anyNPI/anyFCI} ticket.'

Example 45b is understood against the context knowledge that it would be hard, or even impossible, to get tickets. The fact that *any* and *at all* are possible contradicts von Fintel's analysis of positive intensional verbs as UE, thus nonlicensers; and the contrast with the respective Greek items illustrates, again, the more liberal character of the English *any*-class. I return to this issue in §§6 and 7.

5. ALLEGED UE VERBS AND NONVERIDICALITY. Prediction 23c can now be tested: that positive propositional attitude verbs cannot license PIs because they are UE. In this class, von Fintel places positive factive verbs like *be glad* (von Fintel 1999:50) and directive propositional attitudes like *want* (von Fintel 1999:45); he then suggests a semantics for these verbs that makes them UE. This semantics, however, as von Fintel himself admits, is at odds with the more standard analysis of propositional attitudes as nonmonotone (Heim 1992).

As just noted, *any* can be fine in the scope of a positive emotive factive *be glad* (example 45). In 46, we see that *any* is also fine in the scope of directive (or *volitional*) verbs in general, such as *want*, *would like*, or *insist*, which are also positive.

(46) a.   John would like to invite any student.
     b.   John asked us to invite any student.
     c.   John is willing to invite any student.
     d.   I insist that you allow anyone in.

Again, one could say that we have here FCI-*any*, but given that FCI-*any* IS a PI, this becomes merely a terminological objection. Lexically distinct FCIs, as shown below, are also licensed with directive verbs, and so are the Greek NPIs just discussed.

(47) I   Ariaðni **epemine**   na   afiso   {**opjonðipote/kanenan**} na
        the Ariadne insisted.3SG SUBJ let.1SG FCI.person/NPI.person SUBJ
             perasi   mesa.
             come.3SG in
          'Ariadne insisted that I allow anyone in.'
(48) I   Ariaðni **θa iθele**   na   milisi   me   {**opjonðipote/kanenan**}
        the Ariadne FUT wanted.3SG SUBJ talk.3SG with FCI/NPI
             fititi.
             student
          'Ariadne would like to talk to any student.'

For more details see Giannakidou 2001, Quer 1998, and Chierchia 2004 about Italian. The above data clearly contradict the prediction that alleged UE verbs do not license PIs, and in order to explain them, I must give up either the idea that directive and positive factive verbs are UE, or the decisive role of Strawson DE itself for PI-sanctioning, a dooming result in either case.

Taking a closer look at propositional attitudes, we see that there is indeed a contrast in this class, but it is between directive attitudes that allow PIs and epistemic ones that do not.

(49) a. *John believes that we invited any student.
b. *John dreamt that we invited any student.

(Again, if this is FCI-*any*, the unacceptability of these examples further supports the conclusion that FCI-*any* is a PI.) The contrast between epistemic attitudes and directive ones in terms of PI-licensing was first noted in Giannakidou 1995 and is confirmed in many languages, for example, Greek, Spanish, Catalan, and Russian (see Haspelmath 1997, Pereltsvaig 2000). I illustrate below the unacceptability of PIs with epistemic attitudes in Greek, Spanish, and Catalan.

(50)   Greek (Giannakidou 1998)
a. *O Pavlos **pistevi**   oti akuse   {**kanenan/opjonðipote**} θorivo.
the Paul   believe.3SG that heard.3SG NPI/FCI   noise
'Paul believes that he heard any noise.'
b. ***Kseri**   oti aγorasa   {**kanena/opjoðipote**} aftokinito.
know.3SG that bought.1SG NPI/FCI   car
'He knows that I bought any car.'
(51)   Spanish, Catalan (Quer 1998, 1999)
a. La Paola **vol**   evitar que disaparegui   **qualsevol** llengua
b. Paola   **quiere**   evitar que desaparezca   **cualquier** lengua
Paola   want.3SG avoid that disappear.SUBJ.3SG FCI   language
minoritària.
minoritaria.
minority
'Paola wants to prevent any minority language from disappearing.'
(52) a. *La Paola **creu**   que desapareix   **qualsevol**   (Catalan)
b. *Paola   **cree**   que desaparece   **cualquier**   (Spanish)
Paola   believe.3SG that disappear.IND.3SG FCI
llengua minoritària.
lengua   minoritaria.
language minority
'Paola believes that any minority language is disappearing.'

PI-licensing here correlates with the distinction between infinitival (in Spanish and Catalan) and subjunctive complements (introduced with *na* in Greek and marked with special verbal morphology in Spanish and Catalan), which license PIs, and indicative complements, introduced with *oti* in Greek, which don't, as can be seen in the glosses above. In this sense, the subjunctive itself can also be treated as a PI (as argued in Giannakidou 1995, but not elaborated on here). Importantly, in the indicative class of nonlicensers we find epistemic nonfactive verbs like *believe* and epistemic factives like *know*, which, as noted at the beginning, do not license PIs. Crucially, this contrast in the class of positive attitudes is not expected by Strawson DE, which uniformly treats positive attitudes as UE and predicts no PIs at all.

To sum up: the problems identified in the previous sections suggest that DE cannot offer the correct semantic characterization of PI-licensers. Attempting to stretch the

notion of DE in a way to render *only* and negative emotive factive verbs DE yields a DE that is too weak and can be easily manipulated by extrasentential pragmatics. This wrongly predicts free licensing of PIs not just with *only* and negative factives, but generally whenever inference to the subset is given by context, thus also, for example, in positive sentences. Such a weak DE, obviously, creates more problems than it solves, and must therefore be abandoned.

At the same time, two more new points have emerged. First, PIs (*any* included) appear in contexts (other than *only* and emotive factives) that cannot be treated as DE in any way—modal sentences, imperatives, questions, and volitional propositional attitudes. Second, the occurrence of PIs with *only* and emotive factive verbs is not a general phenomenon and concerns only a group of English PIs referred to as the *any*-class. This class, crucially, was shown to become licit also in a positive sentence once a negative proposition was made salient by the context (e.g. with *be glad* example 45). This suggests that the *any*-class is more liberal and has access to information beyond the sentence of occurrence, which can then be exploited for well-formedness. It appears that we just have to accept the existence of this class as distinct from the stricter class of PIs, which includes the Greek, Spanish, and Catalan items discussed plus the English *either*, *all that*, and *until*. In the next two sections I focus on the consequences of this division for polarity.

6. Nonveridicality and the semantic characterization of pi-licensers. The reader has seen that weakening DE does not correctly capture the occurrence of PIs with *only* and negative verbs and cannot offer a reliable criterion for what counts as a trigger for PIs in English and crosslinguistically. Can this fact, then, be taken to mean, as it is in Linebarger 1980, that the enterprise to characterize semantically the class of PIs triggers is hopeless? Given what we have seen so far, the answer is obviously no: there is a liberal class that appears with *only* and negative factives, but there are numerous other PIs that do not. Crucially, in addition to DE contexts, both the liberal and the nonliberal classes appear in non-DE environments such as questions, modalities, and volitional attitudes. I can thus start with the question of what semantic property is shared by the common contexts, and then address the question of *only* and negative factives in this light. I show that if the notion of DE is replaced with that of nonveridicality I can indeed give a successful answer to the first question and unify PI-licensers as a natural class. To account for the difference between the strict and liberal classes of PIs, I need to identify a mechanism for PI-sanctioning distinct from licensing, which affects only the liberal *any*-class, in a way to be made precise in §7.

The relevance of nonveridicality for PI-licensing was originally suggested by Zwarts (1995) and was further developed in Giannakidou 1998, 1999, 2001. Bernardi (2002) implemented a (non)veridicality calculus in a categorial type logic. In my earlier work, in particular, faced with the contrast between epistemic versus directive propositional attitudes in terms of mood choice and PI-licensing, I propose that if we are to characterize PI-licensers as a natural class, we need to extend our definition of licenser to include not only DE expressions, but also expressions that are nonveridical. I then argue that epistemic attitudes and the indicative are veridical and block PIs, whereas directive attitudes are nonveridical and allow them. I do not repeat the details here, but summarize the main points that are of use in this article.

The idea behind veridicality and nonveridicality is very simple.[8] A propositional operator F is veridical iff from the truth of Fp one can infer that p is true according

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[8] The first mention of veridicality is found in Montague 1969, where it is understood in terms of existence; see also Dayal 1995 and Lin 1996 for the idea that nonexistence plays a role in PI-licensing.

to some individual x (i.e. in some individual x's epistemic model). This inference is typically an entailment of the sentence where F occurs, but it can also be given by a presupposition of that sentence, as will turn out to be the case with factive verbs and determiners. If inference to the truth of p under F is not possible, F is nonveridical. Nonveridicality, then, captures a state of unknown (or as yet undefined) truth value. This basic idea is expressed in the definitions in 53.

(53) Definition 3: (Non)veridicality for propositional operators
   a. A propositional operator F is veridical iff Fp entails or presupposes that p is true in some individual's epistemic model $M_E(x)$; otherwise F is nonveridical.
   b. A nonveridical operator F is ANTIveridical iff Fp entails that NOT p in some individual's epistemic model: $Fp \rightarrow \neg p$ in some $M_E(x)$.

A propositional operator is a proposition-embedding function: a sentence modifier (type $\ll s,t>,<s,t\gg$); a sentence-level adverb, modal operators, tense, temporal/aspectual adverbs, connectives; or an expression taking a proposition as its first argument, for example, a propositional attitude verb or the question operator (type $<t, <s,t\gg$). Relativization of (non)veridicality to epistemic models is motivated by the need to deal with the veridicality properties of propositional attitudes (which are treated as propositional operators; Hintikka 1962). Epistemic models are sets of worlds anchored to an individual (the INDIVIDUAL ANCHOR; Farkas 1992) representing worlds compatible with what the individual believes. Without embedding, the only relevant epistemic agent is the speaker, and hers is the only model we consider. But with embedding under propositional attitudes, the model of the attitude subject is also relevant and plays a decisive role.

Assuming standardly that speakers are truthful, positive episodic sentences are veridical because, upon uttering them, the speaker is committed to their truth. Additionally, past episodic sentences contain a (possibly covert) perfective past tense that is veridical: from *John found a snake (yesterday)* one can infer that it is true that *John found a snake*. Epistemic attitudes like *believe* are also veridical because if *x believes that p*, then p is true in x's model (although it can still be false in the speaker's model). Factive epistemics like *know* are STRONGLY veridical in that p is true in both the speaker's and the knower's models (Giannakidou 1999). PIs, then, are sensitive to the availability of a truth inference and cannot occur in a veridical sentence.

Nonveridicality, by contrast, characterizes successfully the meaning of operators that do not ensure truth, such as volitional verbs like *want*, *suggest*, and *insist*, as well as the subjunctive. From the truth of *John wants to find a snake* one can infer nothing about whether John actually finds or found one. PIs are fine in the scope of such expressions, as we saw. Modal verbs, the future, intensional operators, and questions are also nonveridical, and admit PIs.

(54) a. John may talk to anybody.
   b. The search committee can give the job to any candidate.
   c. John will talk to anybody.
(55) a. Did John talk to anybody?
   b. Bill is wondering whether John talked to anybody.

If it is true that *John may talk to anybody*, we are not sure that he actually did or will do so. Likewise, if we are asking or wondering whether John talked to anybody, we do not get a truth implication that he did talk to somebody.

A special case of a nonveridical operator is the antiveridical: these operators imply *not p*, and they are thus negative (without necessarily being also morphologically so). Negation and the connective *without* are antiveridical and are the prototypical licensers of the stricter NPI class identified by Greek minimizers (Giannakidou 1999) and the English NPIs *until*, *either*, and *all that* mentioned earlier, which are permitted only in the narrower set of negative contexts.

A point worth emphasizing is that nonveridicality can be used to characterize correctly the licensing pattern of questions. Yes/no (polar) questions are nonveridical, though not DE, because they are akin to disjunctions (Giannakidou 2002), and disjunctions are nonveridical (as opposed to conjunctions; Zwarts 1995) thus licensing PIs (see Giannakidou 1998). Wн-questions, by contrast, exhibit a variety of patterns, such as those in 56.

> (56) a. **Who** has ever been to Paris?
>   b. ***Why** have you ever been to Paris?

Upon asking *Who has ever been to Paris?*, I am putting forth a genuine information-seeking question that does not presuppose or imply that someone has been to Paris, and which can also felicitously be answered by *no one*. But *why*-questions are factive: 56b PRESUPPOSES that you went to Paris and is asking the reason for your action. This renders the *why*-question veridical, and the nonoccurrence of *any* follows from the assumption that *any* cannot occur in a veridical context. Space prevents an elaboration of how exactly (non)veridicality is to be applied in the various wн-questions, though it should be clear that (non)veridicality entailments have to be defined in terms of what counts as a truthful answer in a given context and the presuppositions that come with it (as suggested also in den Dikken & Giannakidou 2002, Ladusaw 2003; see also discussions in Krifka 2003 and van Rooy 2003). For now it is worth noting that the variation in PI-sanctioning in wн-questions can be made a subpart of the (non)veridicality variation attested in polarity in general (see Borkin 1971 for more examples of the variation in wн-questions).

Crucially, nonveridicality also underlies the contrast noted in §2 between *every* and *each/both* in that only the former allows PIs because it is nonveridical. Recall that this contrast does not follow from DE, as the restriction of a universal would indiscriminately be at least Strawson DE. In Giannakidou 1998 and 1999, I suggested that *every* is nonveridical.

> (57) Every student in this neighborhood came to the party. $\not\rightarrow$ There are students in this neighborhood.

The sentence with *every* is consistent with a situation where there are no students in this neighborhood. In the case of determiners, the truth inference that is needed for veridicality is given by their presupposition, or 'existential commitment' in Horn's terminology (1997). Though *all*, *every*, *both*, and *each* generally appear to be associated with nonempty domains, only with the latter two is the nonempty domain a precondition for felicitous use. With *every* and *all*, it may not even be an entailment, as seen in 58 where the existence of members in the domain can be negated without contradiction.

> (58) Every faculty member that lives in the neighborhood got invited to the party; which means zero, since no faculty member lives in this neighborhood!

Hence *every* can be characterized as a nonveridical determiner and is consequently correctly predicted to sanction PIs. In contexts where it is actually resolved that the domain of *every* is not empty, PIs are blocked (as shown in Giannakidou 1998, 1999). D(iscourse)-linked universals, in contrast, are presuppositional, and as such they presuppose a nonempty domain.

(59) a. Each student in this neighborhood came to the party. → It is true that there are students in this neighborhood.
   b. Both students in this neighborhood came to the party. → It is true there are students in this neighborhood.

For *each* and *both* to be defined, their domain must be nonempty or contain exactly two members (*both*). Notice the contradictions in 60 and 61.

(60) Each student in this neighborhood came to the party;
     #so no students came, since there are not students in this neighborhood!
(61) Both students in this neighborhood came to the party;
     #so no students came, since there are not students in this neighborhood!

Hence the truth inference about the existence of a nonempty domain is part of the lexical information that comes with *each* and *both*. The nonsanctioning of PIs with *each* and *both* then follows from the hypothesis that it is the broad property of truth uncertainty (i.e. nonveridicality) that makes PIs legitimate.[9]

It thus appears that nonveridicality makes the right predictions for PIs in the cases that were problematic for DE, namely propositional attitudes, questions, modalities, subjunctive clauses, and variability of licensing with universal determiners. Importantly, given that DE operators are a subset of the nonveridical (as Zwarts 1995 shows), we can view the move to nonveridicality not in conflict with DE but actually an extension of it, that is, a way to strengthen the semantic approach to PIs by complementing DE and allowing a more nuanced set of licensers including the link to the modal/intensional domain.

Before I move on to the issue of *only* and negative factives, there is one other aspect of the nonveridicality hypothesis that merits further discussion here: its more refined view of the nature of polarity sensitivity. In earlier work, I characterized PIs as sensitive expressions, in the sense that they contain a lexical semantic 'deficit' that is satisfied only in the contexts where the PIs occur. Different kinds of PIs contain different kinds of deficits, thus yielding distinct distributions. This view locates polarity sensitivity in the lexical semantics of the PI itself and is part of the larger agenda in recent literature (Israel 1996, Tovena 1997, Lahiri 1998, Giannakidou 2001, among others), where the limited distribution of PIs is a result of their particular lexical properties. Within the nonveridicality hypothesis, sensitivity is treated as a form of semantic dependency between a PI and (non)veridicality.

(62) Definition 4: Polarity item
     A linguistic expression α is a polarity item iff:
     a. The well-formedness of α depends on some semantic property β of the context of appearance; *and*
     b. β is (non)veridicality, or a subproperty thereof: $\beta \in$ {veridicality, nonveridicality, antiveridicality, modality, intensionality, extensionality, episodicity, downward entailingness}.

This definition acknowledges the fine structure of polarity and presents a general heuristic format from which various conditions can be derived, predicting, of course, distinct

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[9] The difference in the veridicality properties of *every* and *each* is also reflected in the order *each and every* as opposed to the impossible **every and each*. If *every* is nonveridical, as I am arguing, and does not presuppose a nonempty domain, and if *each* is veridical and does so, then **every and each* is impossible because *each* fails to be defined in a model where the domain of *every* is empty. But the reverse, *each and every*, is fine because a nonempty domain is established with *each* that is subsequently picked up by *every*, so no conflict arises.

distributions, as is the case with PIs. Simplifying somewhat, the set of properties subsumed under (non)veridicality is presented as a closed set in (b) in order to cover the PI-paradigms that have thus far been identified in the literature.

In Giannakidou 1998, 1999, I argued further that the dependency posited in definition 4 can be positive or negative. A positive dependency to nonveridicality means that a PI NEEDS the nonveridical operator for well-formedness and must thus be in the syntactic scope of it in order to be grammatical. A negative dependency to veridicality means, broadly speaking, that a PI must AVOID veridicality. I further took the former to give rise to a licensing condition and the latter to an antilicensing condition.

(63) Licensing by nonveridicality
A polarity item α will be grammatical in a sentence S iff α is in the scope of a nonveridical operator β in S.

(64) Antilicensing by veridicality
A polarity item α will not be grammatical in a sentence S if α is in the scope of a veridical operator β in S.

These are the very general schemata employed in Giannakidou 1998 (see also Ladusaw 1979, Progovac 1994), appealing to syntactic scope and antiscope in both cases. In the present work, they serve as the basis of the discussion, and antilicensing is further revised into a positive condition. In essence, I want to establish a distinction between a stronger mode of sanctioning (licensing) and a weaker one, which can be shown to NOT translate into a scope or antiscope condition at the syntactic level (LF or surface structure). In §7, antilicensing is developed into a secondary rescuing mechanism that only some PIs can utilize (i.e. the *any*-class). The advantage of recasting antilicensing as rescuing is that this move does away with negative conditions (see also recent discussion in Szabolcsi 2004), and we end up with positive dependencies in both cases, the difference being only in the strength of dependency to nonveridicality, that is, being licensed by it versus being rescued by it, and the level at which the scope condition applies (syntax or other).

Importantly, licensing translates into a scope condition in syntax (at LF; or surface structure for some PIs). Often, the relevant scope is the local scope of a nonveridical expression β, but it can also be the global scope of β (with veridical expressions potentially intervening, like in *John didn't say that he was glad that he saw anybody*). The type of syntax we need, and the very type of the dependency we have, should ideally be almost exclusively determined by the specific semantics, that is, the lexical deficit, of the PIs involved (I refer the reader to my earlier works, cited above, and to the classical works on polarity mentioned in this article for more details).

As noted earlier, the strong dependency of licensing expresses a MUST condition, and it makes a positive prediction about where the PI can occur. When a PI is rescued, however, it does not, strictly speaking, become legitimate in a structure but is merely tolerated in it, a difference that proves central to the problem I want to solve: the *any*-class and the contrast with the Greek PIs. Naturally, from knowing that a PI is ungrammatical in the scope of a veridical operator (antilicensing), one expects this PI to be tolerated in the scope of a nonveridical one; this is a LIKELY state of affairs, however, rather than a NECESSARY one. Given the kinds of dependencies involved, we expect empirical differences to arise between licensed items and those that are merely tolerated via rescuing, and I confirm next that the contrasts between Greek FCIs/NPIs and *any* reflect exactly this difference.

I turn now to how nonveridicality can handle the challenge posited by emotive factive verbs and *only*.

7. *Only*, emotive factives, and (non)veridicality. Introducing nonveridicality provides a flexible framework within which to address the contrast between strict and liberal PIs. This theory makes, in particular, the following two predictions. If a PI is licensed by the general class of nonveridical expressions, then:

(1) The PI should be acceptable in the scope of DE AND UE or nonmonotone expressions as long as these expressions are nonveridical.

(2) The PI should be unacceptable with *only* and factive verbs because these are veridical.

Prediction 1 correctly derives the occurrence of PIs in the classical DE contexts (negation and negative/DE quantifiers, restriction of *every*), as well as in nonmonotone or potentially UE contexts like generics, as well as the contrast between directive propositional attitudes and epistemic ones noted earlier. It also predicts PIs with modal verbs, questions, *every* but not *each/both*, and the like. I focus now on the case of *only* and factive verbs.

7.1. Rescuing with *only* and emotive factives. Prediction 2 states that *only* and factive verbs in general are not licensers. That this is correctly so for epistemic factives was shown earlier. But what about *only* and emotive factives? Recall the definition of *only* given by Horn.

(65) Monon o   Janis efaγe   laxaniko.
　　　only   the John ate.3SG vegetable
　　　　'Only John ate a vegetable.'
　　　Presupposes: Someone ate a vegetable.　　　　　　　　(Horn 1996)
　　　Asserts: Nobody other than John ate a vegetable.

The negative assertion of *only* often translates into a logical form that employs a universal quantifier (see especially Beaver & Clark 2003) and is equivalent to the negation of an existential, as indicated in 66.

(66) $\forall$x[ate.a.vegetable(x) $\rightarrow$ x $=$ john] $=$
　　　$\neg \exists$x[x $\neq$ john $\wedge$ ate.a.vegetable(x)]

The first proposition renders *only* equivalent to a universal whose restriction is given by the VP (i.e. the converse of *every*). This equivalence, as noted in n. 3, is needed to support DE for the VP position, which is the position where PIs appear. The negative proposition, by contrast, renders *only* akin to an exceptive structure, and, according to Horn, this is the assertion of *only*.

As a propositional operator, *only* in *only p* also allows inference to the truth of the proposition *p*, often called the PREJACENT. Whether this inference is a presupposition or an entailment, and whether it is part of the assertion of *only*, have been matters of considerable debate (see, among others, Horn 1996 and earlier, and Atlas 1993, 1996).

(67) Monon o Janis efaγe laxaniko.
　　　　'Only John ate a vegetable.' $\rightarrow$ 'John ate a vegetable.'
　　　Where $\rightarrow$ reads as either *presupposes* or *entails*

If from *only p* we can infer that *p*, then *only* is veridical. If, however, the truth of the prejacent is not part of the logical form of *only p*, one would expect free licensing of the kinds of PIs that are generally licensed in the restrictions of universals or with negation, that is, *any*, Greek *kanenas*, *opjoðipote*, and Spanish *cualquiera*. But these PIs are systematically NOT licensed with ONLY, as seen earlier. I cannot see how this fact can be captured without accepting that the truth of the prejacent is part of the assertion, thus aligning with Atlas's conjunctive logical form for ONLY.

(68) Atlas (1991, 1993): *only a P* asserts:
     $\exists x \forall y[(x = y \leftrightarrow Py) \ \& \ (Py \rightarrow y = a)]$
      = Exactly one individual, and no one other than a, has the property P.
     Which *entails* the positive proposition: P(a)

(69) Atlas (1993, 1996) inspired LF of 67:
     ate.a.vegetable(john) $\wedge \ \neg \exists x[x \neq$ john $\wedge$ ate.a.vegetable(x)]

This logical form derives veridicality for *only p* by adding the first conjunct *P(john)*. Consider in this respect that the truth of the prejacent is also typically entailed with other focus particles like *even*, *too*, and *also*.

(70) John invited {even Bill/Bill too/also Bill}.
     All entail: John invited Bill.

I do not see enough evidence in Horn 1996 to support that *only* is different from other focus particles in not affirming *P(a)*.[10] In fact, acknowledging that it does so has the welcome implication that it makes *only* similar to the other items in its natural class in this respect, rather than setting it apart as the odd case.

   If the truth of the prejacent *p* is part of the assertion, then we have the meaning in 71 for the constituent *only John*.

(71) ⟦ONLY John⟧ $= \lambda P.P(john) \ \wedge \ \neg \exists x[x \neq$ john $\wedge$ P(x)]

This meaning renders *only* and its crosslinguistic equivalents veridical, and from this it follows that ONLY will block PIs that need a nonveridical expression to license them in its scope. This is indeed what we saw to be the case in §4 with the Greek *kanenas*, minimizers, and FCI *opjosðipote* (and their Spanish and Catalan counterparts). Therefore, acknowledging the veridical inference *p* as part of the assertion of *only* contributes substantially to understanding why PI occurrences with *only* and its crosslinguistic equivalents are not a general phenomenon.[11]

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[10] Horn presents examples like (i) as evidence for his asymmetry position, intended to illustrate that, unlike the exceptive proposition, the prejacent is not part of the assertion.

   (i) a.   Only Ann will pay her taxes on time, and (maybe) even she won't.
        b.   #Only Ann paid her taxes, and/but maybe someone else did.

The fact that (ia) is not contradictory is taken to suggest that *Ann will pay her taxes* is not an entailment. However, such examples are tricky because they introduce modality. If we replace the modal VPs in (ia) with plain episodic past tense, the sentence becomes contradictory, as expected by the conjunction analysis.

   (ii) #Only Ann **paid** her taxes on time, and (maybe) she didn't.

Notice also that Horn's contradictory (ib) is in episodic past too. I do not claim to have a precise answer as to why modality affects the prejacent this way—though obviously this matter deserves closer examination.

[11] At this point, it is helpful to consider another crosslinguistic fact supporting the move to make the positive inference part of the assertion of ONLY. There are languages that employ two lexicalizations of the meaning ONLY, one of which incorporates the positive proposition as part of the assertion, and one that doesn't. Such a language is Japanese, which employs *-dake* and *-shika* as positive and negative *only* respectively. I cannot go into detail here, but note that the positive *-dake* generally blocks PIs—just like Greek and Spanish ONLY, as indicated in (i) (from Yoshimura 2006).

   (i) *John-**dake**   **dare-mo** mita.
        John-DAKE.only who-MO saw.
          Intended meaning: 'Only John saw anyone.'

-Shika, by contrast, is itself an NPI requiring negation to be licensed, and consequently it allows PIs like *dare-mo* because of the cooccurring negation. For more data and an explicit proposal along these lines see Yoshimura 2006. I cannot see how we can capture the existence of ONLY items like *-dake*, or the very need to lexically distinguish between a positive and an NPI ONLY, without making the positive inference of ONLY part of the assertion, at least for some lexicalizations of ONLY.

The class represented by *any* still has to be accounted for. If *only* is veridical, why are *any*, *ever*, *at all*, and English minimizers good with it? In order to explain this, one has to say that the veridicality of *only* is bleached somehow and allow the exceptive component in the complex assertion to do the job: *Nobody other than John ate a vegetable*. This way, the occurrence of *any* with *only* is made equivalent to *any* with overt negative exceptives 'nobody but John.'[12]

    (72) Nobody but John ate anything.

For Horn, this exclusive inference is the main truth-conditional contribution of *only*, though the reader saw in the earlier discussion of the stronger class *until*, *all that*, and *either* that one cannot, strictly speaking, decompose *only John* into a determiner *nobody but John*.

Items like *any* and its ilk, then, can appear in the scope of a veridical operator like *only* because they have the freedom to pick out a partial component of the semantics of *only* that can void veridicality—the exclusive conjunct. This is not an option for items that are subject to licensing, that is, the PIs *kanenas*, *opjosðipote*, Greek minimizers, and their Spanish and Catalan (and Japanese) equivalents. In order to capture the contrast between the *any*-class and the stronger PIs that are not licensed with *only*, we have to give up the idea that PI-sanctioning uniformly involves licensing. Obviously, the *any*-class is not always sanctioned in the syntactic scope of a nonveridical expression. Instead, the weaker *any*-class can sometimes be 'rescued' inside the scope of a veridical operator if that operator additionally makes a nonveridical inference available in the global context of the sentence.

Likewise, the emotive component of factive verbs is responsible for voiding veridicality (although factives in general are nonlicensers since they are strongly veridical, that is, they presuppose their complement, as we saw). The nonveridical inference that is responsible for *any* is given in 73.

    (73) John regrets that I bought a car. → John would prefer it if I had not bought
        a car.

The nonveridical proposition with *regret* is a counterfactual conditional with a negative protasis. This seems to be the expressive, emotive attitude of such verbs, and it is noncancelable.

    (74) John regrets that I bought a car; #in fact he wouldn't prefer it if I had not
        bought a car.

Negating *John would prefer it if I had not bought a car* creates a contradiction, suggesting that this inference is not merely a conversational implicature but rather something stronger, perhaps a presupposition or a conventional implicature in the sense of Potts 2005. In fact, since emotive factives convey an expressive attitude toward the propositional content of their complement, it makes sense to argue that they all conventionally encode this attitude. With a negative factive, the attitude is negative in that it expresses a counterfactual like the one just mentioned, and this is consistent with the fact that the appearance of the *any*-class with negative factives is systematic. Epistemic factive verbs, in contrast, do not convey an expressive attitude (and do not allow PIs).

    (75) John {knows/discovered} that I bought a car. ↛ John would prefer it if I
        had not bought a car.

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[12] For the record, the problematic DE pattern of exceptives must be noted (a fact pointed out in Keenan 1996).

    (i) Nobody but John saw any animals. ↛ Nobody but John saw any tigers.

If it is assumed that *any*-items can void veridicality and be rescued by a nonveridical inference even in a veridical context, one can explain why this class is acceptable with emotive factives but not with epistemic ones. The Greek items, remember, are not licensed with factives at all regardless of the nature of the verb, because they need to be in the scope of a nonveridical trigger, and factive verbs are presuppositional, thus veridical with respect to their complements.

The appearance of PIs with *only* and emotive factive verbs must thus be taken to reflect a subtlety in the way PIs can be sanctioned. In the case of licensing, the PI looks at the local pieces in syntax and is well-formed only if it is in the scope of the nonveridical expression. Since *only* is veridical, licensing is impossible in its scope. Alternatively, certain PIs can be rescued in the scope of a veridical expression like *only* if this expression also generates a nonveridical inference. This can be captured in the rescuing condition in 76.

> (76) Rescuing by nonveridicality
> A PI α can be rescued in the scope of a veridical expression β in a sentence S, if (a) the global context C of S makes a proposition S′ available which contains a nonveridical expression β; and (b) α can be associated with β in S′.

This clause builds on what I called INDIRECT LICENSING in earlier work (Giannakidou 1998, 1999), and it may at first glance be reminiscent of Linebarger's condition. Linebarger, however, wrongly proposes global sanctioning as a general condition on PIs, whereas here it is offered as a secondary operation that can salvage only a subset of PIs. Moreover, Linebarger allows just a negative conversational implicature to do the job, while the rescuing condition in 76 makes appeal to the global context C of S.

The global context C of a sentence S is the set of propositions that arise from S without necessarily being ENTAILED by it. C thus contains the assertion (entailments and presuppositions) and possible pragmatic inferences that a sentence yields, that is, its implicatures (conversational as well as conventional). The stricter PI classes are licensed only via scope at LF. But some PIs, like the *any* class, have access to all of the information in C and can be sanctioned in violation of the scope condition at LF, just in case C contains a nonveridical proposition and the PIs can be associated with it. In the case of *only*, the reader saw that the nonveridical proposition is an entailment of the sentence (the noncancelable exclusive conjunct); in the case of negative emotive factives it is possibly a conventional implicature (a counterfactual containing negation).

One important consequence of rescuing is that it places pragmatic information outside the syntax (LF). This implies a view where LF contains only the truth-conditional aspects of meaning and not global pragmatic information. It seems necessary to keep this distinction in order to explain the difference between the *any*-class, which can be rescued, and the stricter PIs, which can only be licensed: if the rescuing information were available at LF then it should be accessible to licensed PIs too, thus making licensing possible, contrary to fact. The empirical difference between licensed PIs and rescued ones can then in itself be taken as an argument for keeping the syntax 'clean' of implicatures, as in the standard neo-Gricean view (see also Horn 2006, pace Chierchia 2004) and also in line with Potts 2005 where conventional implicatures are computed at a level distinct from the truth-conditional 'at-issue' meaning. Pragmatic inferences, such as expressive emotive meaning, may be 'hanging around' (Potts 2005:63) and be linked to lexical items in a sentence using a specific mode of linking, but they remain disjoint from the truth-conditional level and do not contribute to it.

In this light, what I call here association with a nonveridical proposition can be taken to mean being in the scope of a nonveridical expression at a level other than LF, however it is defined (again, see Potts 2005). In the case of negative emotive factives, for example, *any* would be sanctioned inside the counterfactual conditional at whatever level (other than LF) at which this conditional is represented. With *only*, by contrast, the nonveridical exclusive conjunct that is responsible for rescuing is part of the truth-conditional meaning. Given that *only* becomes veridical because of the first conjunct, I have to say that rescuing in this case need not involve scope at all, and that for a PI to be rescued it may be sufficient for it to be associated with a nonveridical inference just globally, that is, at the top, sentence level.

Items like the *any*-class are thus weaker in that they can be both licensed and rescued. Since rescuing does not involve a syntax where the PI is in the scope of a nonveridical expression, PIs exploit various means to be rescued, and they are acceptable with a veridical expression as long as the global context allows nonveridical inference. In the extreme case, such an inference can be made possible through discourse inferencing alone, which is totally independent of the sentence of appearance. This was seen to be the case with *be glad* (in 45, repeated here as 77).

(77) Bill is glad that we got any tickets at all!
    Context expectation: Bill expected that we would not be able to get tickets.

The positive emotive *be glad* does not convey a negative attitude like *regret*; but *any* and *at all* seem to be able to pick on a nonveridical proposition given by the context prior to the sentence, as suggested above. This clearly illustrates the ability of the weaker *any*-class to manipulate pragmatic information beyond the sentence for legitimacy. Obviously this option is more marginal, since the *any*-class does not systematically appear with positive factive emotives, but it is certainly present.[13]

Finally, an interesting difference between rescuing and licensing is revealed in the fact that rescued PIs sometimes FAIL to associate with a nonveridical operator in syntax. This is illustrated in the empirical contrast between *any* and licensed *kanenas* in 78 and 79.

(78)   **Efxome** na me voiθuse kanenas!   (*wish*)
            '*I wish anybody helped me!'
(79) a. I   bike   mesa kanenas i afisame to   (disjunction)
         either entered.3SG within NPI   or left.1PL the
                  fos   anameno.
                  light on
            '*Either anybody came in OR we left the light on.'
      b. *Bike mesa kanenas ke afisame to fos anameno.   (conjunction)
            '*Anybody came in AND we left the light on.'

In 78, we see that the Greek NPI *kanenas* is grammatical in the complement of a nonveridical verb like *efxome* 'wish', as expected, but *any* is not. Likewise, in 79, nonveridical disjunction (as opposed to conjunction, which is veridical (Zwarts 1995)),

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[13] It is worth noting here that global rescuing may also be held accountable for other seemingly problematic cases presented by Linebarger, specifically for the occurrence of *any* with *long after*.

   (i) a.   Bill kept trying long after he had any chance of succeeding.
        b.   *Bill kept trying after he had any chance of succeeding.

Though generally bad with *after*, Linebarger notes that *any* becomes good if *long* is added, as in (ia). In the analysis here, the effect of *long* is to contribute globally the nonveridical proposition *Bill no longer had a chance of succeeding*, which can serve as the rescuer for *any* (and the other PIs in this class).

allows *kanenas* but not *any*. Why this difference? For the licensed Greek PI, nonveridi-cality is a sufficient and necessary condition, which means that as long as there is a nonveridical expression the PI should be grammatical in its scope. With *any*, however, this is obviously not the case. This stunning contrast must be taken as another manifesta-tion of the fact that *any* is subject to a weaker dependency altogether, that is, one that bypasses a scope condition at LF. This contrast also implies that perhaps items like *any* always get sanctioned through rescuing. If this is so, then I must admit that a nonveridical inference cannot always produce effective rescuing, as also becomes evi-dent in the following discussion of *almost*.

Ultimately, we want to know why some PIs can be rescued and others cannot, that is, what in the lexical-semantic specification of the class represented by *any* makes them rescuable. I do not address this question here, but I suggest that a possible explana-tion must make use of the fact that the PIs that need nonveridicality for licensing have the semantic deficit of not being able to introduce a discourse referent (they are DEPENDENT, in Giannakidou's 1998 terminology): in a veridical sentence, and *only* sentences and complements of factives are such, these PIs are forced to do something they cannot do and are thus ruled out. If some explanation along these lines is plausible, then *any* must be acknowledged as having a distinct lexical deficit. At any rate, what is important to emphasize again is that licensing AND rescuing depend crucially on nonveridicality, thus supporting the semantic characterization of the expressions that sanction PIs.

7.2. RESCUING AND ASSERTORIC INERTIA. Before closing, it is helpful to consider the relation of rescuing discussed here to the notion of ASSERTORIC INERTIA proposed by Horn (2002:28).

> (80) Assertoric inertia
> Semantically entailed material that is outside the scope of the asserted, hence potentially controversial, aspect of the utterance meaning counts as assertori-cally inert and hence as effectively transparent to NPI-licensing and related diagnostics of scalar orientation.

The connection to the current discussion should be obvious. In Horn's inertia as well as in my rescuing, the rescued PI is not, strictly speaking, licensed in the scope of some operator. Rather, the PI has access to all of the semantic and pragmatic information that is given by the context of appearance, including the sentence of occurrence S as well as, in extreme cases, the global S-independent context. The PI is then free to use any part of that information as its rescuer (NOT licenser). The properties of inertia and rescuing are thus intended to capture precisely this freedom and selectivity that characterizes such PIs.

In Horn's terms, we parametrize PIs with respect to whether they can be sanctioned, or not, by assertorically inert material; and 'semantically entailed material' can become assertorically inert if it 'falls outside the scope of the assertion.' With *only*, the entailed veridical inference that *p* becomes inert and *any* becomes okay, and likewise with emotive factives, the presuppositional inference to their complement becomes inert. But assertoric inertia would have this effect only with PIs of the weaker *any*-class, because only these items can bypass the syntactic scope condition and become sensitive to pragmatic manipulation beyond the entailments of the sentence. Stricter items like the Greek PIs look only at the inferences made in their (local or extended) syntactic context at LF.

According to Horn, the impact of assertoric inertia can describe why the negative inference of *almost* cannot do the trick for *any* in the scope of *almost*.

(81) a. *John bought almost any book.
     b.   John is almost an idiot. → John is not an idiot.

The relation arrow with *almost* reads as *presupposes*, *entails*, or *conversationally implicates* (see Horn 2002 for an extensive survey). The problem is obvious: if *almost* licenses a negative clause, as shown above, then why can't it license *any*? Horn stipulates that this is so because with *almost* the negative inference becomes assertorically inert. But why? What exactly determines when a proposition becomes assertorically inert? We need a principled way of predicting when exactly assertoric inertia is activated, and obviously, the same point applies to rescuing, as suggested earlier.

Needless to say, the stronger PI-classes are also not licensed with the Greek equivalent of *almost* (which tends to be used as a DP, rather than VP modifier).

(82) *O   Alexanðros aγorase   sxeðon **kanena vivlio.**
        the Alexander bought.3sɢ almost any   book
          'Alexander almost bought any book.'

Though what I offer here does not go beyond the level of a brief remark and cannot possibly do justice to the rich literature that *almost* has generated, I suggest that it seems right to assume that *almost p* does not entail or presuppose *not p*, but only implicates it (as Sadock 1981 argued). Notice that the negative inference can be negated without contradiction.

(83) a. John bought almost five books; in fact he bought ᴇxᴀᴄᴛʟʏ five!
     b. John is almost an idiot; in fact he ɪs an idiot!

Sadock 1981 likewise makes the point that sentences like *Not only did Bill almost swim the English Channel, in fact he did swim it* (Sadock 1981:263) are fine, as opposed to sentences with *not quite* which are bad: **Not only did Bill not quite swim the English Channel, in fact he did swim it*. Sadock takes this contrast to indicate that *almost p* does not entail *not quite p* (as suggested, for example, in Atlas 1984) and proposes a modal analysis of *almost* that derives *not (quite) p* as a generalized conversational implicature.

Following Sadock's lead that *not (quite) p* is not an entailment of *almost*, I suggest the following semantics for *almost* (which, unlike Sadock's, does not invoke modality).

(84) $[\![\text{almost}]\!] = \lambda P \lambda Z \lambda x. \exists Q[\text{top } (P, Z) \wedge \text{bottom } (Q, P) \wedge Q(x)]$
     where Z is a scalar property, P is the top interval of Z, and Q is the bottom interval of P.

In words, the meaning of *almost P* is that of *at least Q*, where *Q* is the minimum amount qualifying for being *P*. The property *P* modified by *almost* is an interval, specifically the top subinterval of the scale *Z* given by the predicate to which *almost* applies, and *Q* is the threshold, that is, the bottom subinterval of *P*. So, if the minimum amount of idiocy that one must possess in order to qualify for entry on the top *P* of the scale *Z* of idiocy is *Q*, then the sentence *John is almost an idiot* asserts that John actually possesses at least the entry amount of top-idiocy, and he is therefore close to being a *complete* idiot (though it is implicated that he is not completely so). Crucially, this renders the statement *almost P* true for some part of *P(Q(x))*, hence from *almost P* to infer *not at all P* is strictly speaking false. From *almost P* we can certainly infer *not completely P*, but from *not completely P* we cannot infer that *not P* altogether. In fact, upon uttering *almost P* a decision is made that a fair amount of the scalar property

Z is possessed, certainly enough to enter the highest degrees P of the scale. Hence *almost* yields a positive veridical statement ($Q(x)$), and is not expected to license PIs.

Why *any* cannot be rescued, however, by the nonveridical implicature *not entirely p* of *almost* remains a puzzle, and indeed one that accords with examples 78 and 79, which illustrated that rescuing is not entirely unconstrained after all. Clearly, it becomes urgent to determine when exactly rescuing is possible and when not, but I leave this task open for future research.

8. CONCLUSION. In this article I used the occurrence or nonoccurrence of PIs with *only* and emotive factive verbs as a window to the more complex nature of polarity sensitivity. Empirically, I extended the domain of study beyond just the usual focus on *any*, *ever*, and English minimizers and discovered that the occurrence of PIs with *only*, negative factives, and their crosslinguistic counterparts is more limited than previously thought, essentially a fact about the class that *any* represents. Given that this class is also occasionally licensed by positive factive verbs, if the larger context makes a negative proposition available, I took this more liberal behavior as an indication that such PIs are not really licensed in certain contexts, but rescued.

This is the novel analytical result: that the polarity dependency is not uniform, but of dual nature. One instance is LICENSING, where the PI has access to the semantic information of the sentence only and is sanctioned by being in the scope of a nonveridical operator in syntax. The other possibility, I argued, is for a PI to be rescued in a sentence. Rescuing, however, does not happen in the syntactic scope of a nonveridical expression; rather, it can go beyond the entailments of expressions in the sentence of occurrence and exploit the global context, which includes information that is derived from, without necessarily being entailed by, the sentence. In extreme cases, rescuing can also exploit purely contextual information and allow, for example, PIs even with positive emotive factive verbs. In every case, rescuing involves exploiting a nonveridical proposition.

Rescuing predicts the greater freedom of distribution that characterizes the liberal class of *any* and the other PIs with similar behavior, but it by no means describes PIs as a general class, as I took pains to show. Allowing for this weaker option, I believe, voices intuitions that have been lurking in the literature (e.g. in Ladusaw 1979) but were never formulated in a more precise way. I suggested a framework for doing this in the present analysis. As an important implication, it became necessary to keep semantic information (accessible at LF) clean of pragmatics, in accordance with the neo-Gricean view and Potts 2005. If purely pragmatic information is allowed to enter LF, I predict this information to be accessible to ALL PIs, thus failing to capture the empirical difference between PIs that cannot be licensed by such information (the stricter classes) and those that can be rescued by it (the *any*-class). Importantly, the difference between licensing and rescuing as understood in this article also predicts a difference in status between PIs that are licensed from those that are rescued—and future psycholinguistic research can shed light on whether there is indeed a psychological distinction between the two modes of sanctioning, e.g. in terms of processing or language acquisition.

Along the way, we have also discovered that weakening DE cannot get us very far in terms of deriving the correct distribution of *any* and of other PIs in English and crosslinguistically. The problem lies centrally in the fact that this approach takes for granted the traditional monolithic assumption of a uniform polarity dependency and tries to stretch the semantics of *only* and negative emotive factives in ways to make them downward monotone. In doing so, it allows background inferences to influence

the reasoning pattern of sentences, a tactic that was shown to systematically overgenerate, for example, predicting PIs even in positive sentences, and undergenerate, in either case failing to unify PI-licensers as a natural class. This strategy also fails in not having a way to distinguish the liberal *any*-class from the stricter classes identified here. I then proposed the notion of nonveridicality as an extension of DE, and it was more successful at the task of characterizing semantically the class of PI-licensers and of bringing about the empirically correct set of contrasts.

In light of the overall results, then, Linebarger's attack on the semantic characterization of PI-licensers is avoided: the semantic notion of nonveridicality IS decisive for licensing, and it is again association with a nonveridical inference that enables rescuing.

REFERENCES

ASHER, NICHOLAS. 1987. A typology of attitude verbs and their anaphoric properties. *Linguistics and Philosophy* 10.125–97.

ATLAS, JAY DAVID. 1984. Comparative adjectives and adverbials of degree. *Linguistics and Philosophy* 7.347–77.

ATLAS, JAY DAVID. 1991. Topic/comment, presupposition, logical form and focus stress implicatures: The case of focal particles *only* and *also*. *Journal of Semantics* 8.127–47.

ATLAS, JAY DAVID. 1993. The importance of being only: Testing the neo-Gricean versus neo-entailment paradigms. *Journal of Semantics* 10.301–18.

ATLAS, JAY DAVID. 1996. *Only* noun phrases, pseudo-negative quantifiers, negative polarity items, and monotonicity. *Journal of Semantics* 13.265–328.

BAKER, CARL LEROY. 1970. Double negatives. *Linguistic Inquiry* 1.169–86.

BERNARDI, RAFFAELLA. 2002. *Reasoning with polarity in categorical type logic*. Utrecht: University of Utrecht dissertation.

BEAVER, DAVID, and BRADY CLARK. 2003. *Always* and *only*: Why not all focus sensitive operators are alike. *Natural Language Semantics* 11.323–62.

BORKIN, ANN. 1971. Polarity items in questions. *Chicago Linguistic Society* 7.53–62.

CHIERCHIA, GENNARO. 2004. Scalar implicatures, polarity phenomena, and the syntax/pragmatics interface. *Structures and beyond: The cartography of syntactic structures*, vol. 3, ed. by Adriana Belletti, 39–103. Oxford: Oxford University Press.

CLARK, BRADY. 2006. Polarity items and the interdefinability of universals and exclusives. Paper presented at the annual meeting of the Linguistic Society of America, Albuquerque, NM, January 2006.

DAYAL, VENEETA. 1995. Licensing *any* in non-negative/non-modal contexts. *Semantics and Linguistic Theory (SALT)* 5.72–93.

DEN DIKKEN, MARCEL, and ANASTASIA GIANNAKIDOU. 2002. From *hell* to polarity: 'Aggressively non-d-linked' WH-phrases as polarity items. *Linguistic Inquiry* 33.31–61.

DOWTY, DAVID. 1994. The role of negative polarity and concord marking in natural language reasoning. *Semantics and Linguistic Theory* 4.32–49.

FARKAS, DONKA F. 1992. On the semantics of subjunctive complements. *Romance languages and modern linguistic theory*, ed. by Paul Hirschbühler and E. F. K. Koerner, 69–104. Amsterdam: John Benjamins.

GIANNAKIDOU, ANASTASIA. 1995. Subjunctive, habituality and negative polarity. *Semantics and Linguistic Theory (SALT)* 5.94–112.

GIANNAKIDOU, ANASTASIA. 1998. *Polarity sensitivity as (non)veridical dependency*. Amsterdam: John Benjamins.

GIANNAKIDOU, ANASTASIA. 1999. Affective dependencies. *Linguistics and Philosophy* 22.367–421.

GIANNAKIDOU, ANASTASIA. 2001. The meaning of free choice. *Linguistics and Philosophy* 24.659–735.

GIANNAKIDOU, ANASTASIA. 2002. Licensing and sensitivity in polarity items: From downward entailment to (non)veridicality. *Chicago Linguistic Society* 38.2.29–54.

HASPELMATH, MARTIN. 1997. *Indefinite pronouns*. Oxford: Clarendon.

HEIM, IRENE. 1992. Presupposition projection and the semantics of attitude verbs. *Journal of Semantics* 9.183–221.

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HINTIKKA, JAAKO. 1962. *Knowledge and belief: An introduction to the logic of the two notions.* Ithaca, NY: Cornell University Press.

HOEKSEMA, JACOB. 1986. Monotonie en superlatieven. *Proeven van taalwetenschap*, ed. by C. Hoppenbrouwers, Joop Houtman, Inneke Schuurman, and Frans Zwarts, 38–49. Groningen: Nederlands Instituut RUG.

HORN, LAURENCE R. 1972. *On the semantic properties of logical operators in English.* Los Angeles: University of California, Los Angeles dissertation.

HORN, LAURENCE R. 1996. Exclusive company: *Only* and the dynamics of vertical inference. *Journal of Semantics* 13.1–40.

HORN, LAURENCE R. 1997. All John's children are as bald as the king of France: Existential import and the geometry of opposition. *Chicago Linguistic Society* 33.155–79.

HORN, LAURENCE R. 2000. Pick a theory: Not just any theory. *Negation and polarity: Syntactic and semantic perspectives*, ed. by Laurence Horn and Yasuhiko Kato, 147–92. Oxford: Oxford University Press.

HORN, LAURENCE R. 2002. Assertoric inertia and NPI-licensing. *Chicago Linguistic Society* 38.2.55–82.

HORN, LAURENCE R. 2006. *The boarder wars: A neo-Gricean perspective. Where semantics meets pragmatics: Current research in the semantics/pragmatics interface*, vol. 16, ed. by Klaus von Heusinger and Ken Turner, 21–48. Oxford: Elsevier.

ISRAEL, MICHAEL. 1996. Polarity sensitivity as lexical semantics. *Linguistics and Philosophy* 19.619–66.

KADMON, NIRIT, and FRED LANDMAN. 1993. Any. *Linguistics and Philosophy* 16.353–422.

KARTTUNEN, LAURI, and STANLEY PETERS. 1979. Conventional implicature. *Syntax and semantics 11: Presupposition*, ed. by Choon-Kyu Oh and David A. Dinneen, 1–56. New York: Academic Press.

KAS, MARK. 1993. *Essays on Boolean functions and negative polarity.* Groningen: University of Groningen dissertation.

KEENAN, EDWARD L. 1996. The semantics of determiners. *The handbook of contemporary semantic theory*, ed. by Shalom Lappin, 41–65. Oxford: Blackwell.

KEENAN, EDWARD, and LEONARD FALTZ. 1985. *Boolean semantics for natural language.* Dordrecht: Reidel.

KIPARSKY, PAUL, and CAROL KIPARSKY. 1971. Fact. *Semantics*, ed. by Danny Steinberg and Leon Jacobovits, 345–69. Cambridge: Cambridge University Press.

KLIMA, EDWARD. 1964. Negation in English. *The structure of language*, ed. by Jerry A. Fodor and Jerrold Katz, 246–323. Englewood Cliffs, NJ: Prentice-Hall.

KRIFKA, MANFRED. 2003. Polarity items in questions. Berlin: University of Berlin, MS.

KRIFKA, MANFRED; FRANCIS JEFFRY PELLETIER; GREG CARLSON; ALICE TER MEULEN; GENNARO CHIERCHIA; and GODEHARD LINK. 1995. Genericity: An introduction. *The generic book*, ed. by Gregory Carlson and Francis Jeffry Pelletier, 1–124. Chicago: University of Chicago Press.

LADUSAW, WILLIAM A. 1979. *Polarity sensitivity as inherent scope relations.* New York: Garland.

LADUSAW, WILLIAM A. 2003. Framing the issues: The biasing effect of polarity items in questions. Santa Cruz: University of California, Santa Cruz, MS.

LAHIRI, UTPAL. 1998. Focus and negative polarity in Hindi. *Natural Language Semantics* 6.57–123.

LIN, JO-WANG. 1996. *Polarity licensing and WH-phrase quantification in Chinese.* Amherst: University of Massachusetts, Amherst dissertation.

LINEBARGER, MARCIA. 1980. *The grammar of negative polarity.* Cambridge, MA: MIT dissertation.

MONTAGUE, RICHARD. 1969. On the nature of certain philosophical entities. *The Monist* 53.159–94. [Reprinted in *Formal philosophy: Selected papers of Richard Montague*, ed. by Richard H. Thomason, 148–87. New Haven: Yale University Press, 1974.]

NATHAN, LANCE. 1999. *Either*: Negative polarity meets focus sensitivity. Providence, RI: Brown University honor's thesis.

PERELTSVAIG, ASYA. 2000. Monotonicity-based vs. veridicality-based approaches to negative polarity: Evidence from Russian. *Formal approaches to Slavic linguistics*, ed. by Tracy Holloway King and Anna Sekerina, 328–46. Ann Arbor: Michigan Slavic Publishers.

POSTAL, PAUL. 2000. The Ohio lectures on *squat*. New York: New York University, MS.

POTTS, CHRISTOPHER. 2005. *The logic of conventional implicatures*. Oxford: Oxford University Press.

PROGOVAC, LJILJANA. 1994. *Positive and negative polarity: A binding approach*. Cambridge: Cambridge University Press.

QUER, JOSEP. 1998. *Mood at the interface*. Utrecht: University of Utrecht dissertation.

QUER, JOSEP. 1999. Licensing free choice items in hostile environments: The role of aspect and mood. Amsterdam: University of Amsterdam, MS.

RULLMANN, HOTZE. 2003. Additive particles and polarity. *Journal of Semantics* 20.329–401.

SADOCK, JERROLD. 1981. *Almost*. *Radical pragmatics*, ed. by Peter Cole, 257–72. New York: Academic Press.

STRAWSON, P. F. 1950. On referring. *Mind* 59.320–44.

SZABOLCSI, ANNA. 2004. Positive polarity–negative polarity. *Natural Language & Linguistic Theory* 22.409–52.

TOVENA, LUCIA. 1997. *The fine structure of polarity items*. New York: Garland.

VAN DER WOUDEN, TON. 1994. *Negative contexts*. Groningen: University of Groningen dissertation.

VAN ROOY, ROBERT. 2003. Negative polarity items in questions: Strength as relevance. *Journal of Semantics* 20.239–73.

VON FINTEL, KAI. 1999. NPI-licensing, Strawson-entailment, and context-dependency. *Journal of Semantics* 16.97–148.

YOSHIMURA, KEIKO. 2006. EVEN and ONLY: A study of focus particles in Japanese. Chicago: University of Chicago, MS.

ZWARTS, FRANS. 1986. *Categoriale Grammatica en Algebraische Semantiek: Een studie naar negatie en polariteit in het Nederlands*. Groningen: University of Groningen dissertation.

ZWARTS, FRANS. 1995. Nonveridical contexts. *Linguistic Analysis* 25.286–312.

ZWARTS, FRANS. 1998. Three types of polarity. *Plural quantification*, ed. by Fritz Hamn and Erhard Hinrichs, 177–238. Dordrecht: Kluwer.

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