Dynamic excursions on weak islands

By Martin Honcoop (1968–2000)
Reviewed by Chris Barker

Summary by the author

In this thesis, I investigate the phenomenon of Weak Islands (WIs) within the framework of dynamic semantics. WIs are contexts that are transparent with respect to some, though not all quantificational dependencies that involve an operator and a variable expression. A typical example is provided in (1).

(1) a. How did John behave?
　　b. *How didn't John behave?

Specifically, *Dynamic excursions on weak islands* explores the consequences of the novel claim that WIs reduce to the same principles of dynamic semantics that account for *inaccessibility*. In addition, it examines in both empirical and theoretical terms the precise relationship between the dynamic theory of WIs and Szabolcsi & Zwarts's (1993) algebraic semantic approach. This inquiry leads to a number of further developments of dynamic semantics, such as an intensional version of *Existential Disclosure* and an algorithm for computing the dynamic properties of an expression on the basis of its Boolean properties.

1. A brief introduction to dynamic semantics

Dynamic logics distinguish themselves from static ones in that in the former, the syntactic scope of an operator does not necessarily determine its semantic scope and *vice versa*. In Groenendijk & Stokhof's (1991) dynamic predicate logic, for example, (2) is valid. This theorem formalizes the notion that the semantic scope of a dynamic existential quantifier ε (i.e. $\Phi \wedge \Psi$; where "$\wedge$" stands for dynamic conjunction) properly includes its syntactic scope (i.e. Φ). In ordinary predicate logic, the equivalent of (2) holds just in case x does not occur free in Ψ.

(2) **Theorem**
$\varepsilon x\ (\Phi) \wedge \Psi \Leftrightarrow \varepsilon x\ (\Phi \wedge \Psi)$

Dynamic semantics exploits this theorem to provide a compositional account of facts such as (3a), where the (simple) indefinite *a man* binds the pronoun *he* even though it does not c-command it. As long as we make sure that the first sentence can be compositionally translated into (3b) (where "$\uparrow \phi$" indicates that ϕ is to be interpreted dynamically) and the second sentence into (3c), the possible binding in (3a) immediately follows from (2) (assuming that the concatenation of two sentences amounts to dynamic conjunction).

(3) a. *A man* walked in. *He* whistled.
　　b. $\varepsilon x\ (\uparrow \text{man}'(x) \wedge \uparrow \text{walked-in}'(x))$
　　c. $\uparrow \text{whistled}(x)$

Sometimes, however, the semantic scope of a (simple) indefinite is bounded by whatever expression takes scope over it. This phenomenon is called *inaccessibility*, and can be illustrated as in (4).

(4) *John didn't see *a(ny) man*. *He* whistled.

In dynamic semantics, the general approach to inaccessibility can be illustrated as follows. Suppose we define dynamic negation "$\sim$" directly in terms of its static counterpart "$\neg$"; i.e. $\sim \Phi = \uparrow \neg \downarrow \Phi$ (where $\downarrow$ maps a dynamic proposition Φ to its static counterpart). As in (3), we will assume that (4) can be compositionally translated into (5a). By working out the definitions of "$\sim$" and "$\downarrow$", we obtain (5c). Crucially, the variable into which *he* in (4) is translated (i.e. x in $\uparrow \text{whistled}'(x)$) is free in (5c). It appears outside the scope of $\exists x$.

(5) a. $\sim(\varepsilon x\ (\uparrow \text{man}'(x) \wedge \uparrow \text{see}'(j,x))) \wedge \uparrow \text{whistled}'(x)$
　　b. $\uparrow \neg\ (\downarrow \varepsilon x\ (\uparrow \text{man}'(x) \wedge \uparrow \text{see}'(j,x))) \wedge \uparrow \text{whistled}'(x)$
　　c. $\uparrow \neg\ (\exists x\ (\text{man}'(x) \wedge \text{see}'(j,x))) \wedge \uparrow \text{whistled}'(x)$

It is by now customary in dynamic semantics to assume i) that variables are interpreted through *partial* assignments; ii) that each discourse is interpreted relative to an empty initial assignment ø. Both assumptions trivially entail (6).

(6) **Fact**
$[[\Phi]]^{M,\text{ø}} = \perp$ if Φ contains a free variable

Observe now that (6) entails that the interpretation of (5) is simply undefined. This is as desired: the only

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way to make sense of (4) is by construing the pronoun *he* either as bound by John, or as a description in disguise which refers to some other contextually salient individual.

2. Existential disclosure: dynamic semantics meets Weak Islands

Many linguists have observed that (simple) indefinites do not always behave as restricted existential quantifiers; sometimes, they appear to behave as restricted variables as well. To account for this observation, Dekker (1993) proposed the following operation which exploits the ''open-ended'' nature of dynamic existential quantification:

(7) **Definition: Existential Disclosure (ED)**
$\underline{\lambda}x.\ \Phi =_{def} \lambda x'.\ \Phi \vartriangle \uparrow x = x'$

where x' does not occur free in Φ. By way of example, consider the disclosure of Ex in (8a).

(8) a. $\underline{\lambda}x.\ \varepsilon x\ (\uparrow\text{man}'(x) \vartriangle \uparrow\text{saw}'(j,x))$
   b. $\lambda x'.\ \varepsilon x\ (\uparrow\text{man}'(x) \vartriangle \uparrow \text{saw}'(j,x)) \vartriangle \uparrow x = x'$(def. ED)
   c. $\lambda x'.\ \varepsilon x\ (\uparrow\text{man}'(x) \vartriangle \uparrow\text{saw}'(j,x) \vartriangle \uparrow x = x')$ (cf. 2)
   d. $\lambda x'.\ \uparrow\text{man}'(x) \vartriangle \uparrow\text{saw}'(j,x')$ (elementary logic)

The reason why ED can be executed so smoothly in (8) resides in the dynamics of existential quantification, as expressed so vividly in (2) above. However, it is important to see that given our observations in (4–6), it also follows that ED cannot be successfully applied across negation. Applying ED across negation will prevent Ex from binding x in $\uparrow x = x'$. This fact is recorded in (9).

(9) **Fact**
$[\![\underline{\lambda}x. \sim \Phi]\!]^{M,\varnothing} = \bot$

More generally, it is predicted that ED cannot be successfully applied across inaccessible domains for dynamic binding. This gives us a handle on a substantive set of WIs.

3. A dynamic account of the Intervention Generalization

Crosslinguistically, the following generalization appears to hold: whenever a quantificational expression Q needs to bind an indefinite with which it does not form a constituent, no WI may intervene between Q and the indefinite. This generalization is referred to as the *Intervention Generalization*, and is stated in (10) for our convenience.

(10) **The Intervention Generalization**
*... Q_i [$_\Phi$ ... [$_{WI}$ Operator ... indefinite$_i$ ... $_\Phi$] ...] ...

In my thesis, I argue that the What For-split and What On-split construction in various Germanic languages, negative polarity licensing and partial *wh*-movement in German fully corroborate the Intervention Generalization. Consider for example the contrast in (11), involving What For-split in Dutch:

(11) a. Wat$_i$ heeft Jan voor een man$_i$ gezien?
       what has Jan for a   man seen
       'What kind of man did Jan see?'
    b. *Wat$_i$ heeft Jan niet voor een man$_i$ gezien?
       what has Jan not for a   man seen
       'What kind of man didn't Jan see?'

The fact that What For-split is sensitive to negation can now be understood as follows. Given that the indefinite *een man* in (11a) is construed as a property restricting the range of the variable quantified over by the *wh*-quantifier *wat*, we need to apply ED to it in the way indicated in (8) above, so as to be able to dissolve the existential quantifier by means of which it is interpreted. As was already discussed above, this is unproblematic. However, note that we cannot derive a property-reading of *een boek* by means of ED in (11b) on account of (9) above. Recall that (9) essentially followed from our earlier observation that negation constitutes an inaccessible domain for dynamic binding.

   More generally, the Intervention Generalization can be derived in a similar fashion from the same principles of dynamic semantics which account for inaccessibility if we can substantiate the following claim:

(12) **Claim**
The class of expressions that induce WIs coincides with the class of expressions that create inaccessible domains for dynamic anaphora.

Apart from the correlation between (1b) and (4), the correlations established in (13) and (14) (where these sentences are interpreted in such a way that the subject scopes over the object) lend further support to our claim in (12).

(13) *How did {no student/exactly three students/ more than three students/you wonder whether to} behave?

(14) *{No student/exactly three students/more than three students/I wonder whether John} bought *a(ny) book. It* was quite expensive.

4. Dynamic versus algebraic perspectives on weak islands

The last part of my thesis examines in both empirical and theoretical terms the precise relationship between the dynamic theory of WIs and the algebraic semantic approach developed by Szabolcsi & Zwarts (1993), arguably the most successful theory of WIs to date. This investigation led me to conclude that:

I. the dynamic theory of WIs and the algebraic semantic approach cannot be fully reduced to each other, even though there are WI effects that can be accounted for either way;
II. the dynamic theory of WIs needs to be elaborated in view of the fact that even though intensional verbs such as *want* and *think* constitute inaccessible

domains for dynamic anaphora (cf. 15 below, where the indefinite is construed *de dicto*), they never induce WIs. This observation directly contradicts our earlier claim in (12), the empirical cornerstone of a dynamic approach to WIs.

(15) *John thought he saw a photomodel yesterday. *She* smiled at him.

I show that this problem can be dealt with by developing an intensional version of ED, which builds on Groenendijk & Stokhof's (1989) compositional approach to *modal subordination*. As desired, this intensional version of ED derives the same results as (7) in purely extensional contexts;

III. even though the dynamic approach to WIs and Szabolcsi & Zwarts' algebraic account cannot be reduced to each other, the fact that both theories essentially single out the same set of interveners still calls for an explanation. I address this issue by tentatively developing an algorithm for computing the dynamic properties of an expression on the basis of its Boolean properties. Along these lines then, we may hope to arrive at a unified theory of WIs which incorporates the basic insights of both the dynamic and the algebraic approach.

Review by Chris Barker

Martin Honcoop's superb 1998 Leiden dissertation, *Dynamic Excursions on Weak Islands*, contains in abundance everything a good dissertation should have: a Big New Idea, clearly explained and carefully worked out; deep respect for the data, as well as for other people's work; sophisticated, rock-solid formal technique, always in the service of a deeper explanation; summaries of up-to-the-minute research, better in many cases than the primary literature; and imaginative extensions of the basic idea to a wide variety of problems that range from reasonable to radical.

The main topic of the dissertation is weak islands, that is, islands that selectively block some extractions but not others. This review concentrates on the dissertation itself; for a panoramic view of strong and weak islands, including an appreciation of the importance of Honcoop's contribution, see Szabolcsi and den Dikken's (1999) state-of-the-article in Glot International **4.6** on islands.

Although the dissertation is quite challenging, it both deserves and rewards detailed study. I find that it improves on each re-reading, and in addition to its merit, it is also a pleasure to read. Certainly it is quite well-written, well-planned, and executed with discipline. In particular, the organization is crystal clear: precisely how each discussion fits into the main argument is never in doubt, though perhaps at the cost of a bit too much recapitulation.

The Big Idea seeks to connect Szabolcsi and Zwarts' (1993/1997) breakthrough algebraic theory of Weak

Islands with a modern semantic theory of anaphora, specifically, a version of Dynamic Montague Grammar supplemented with Dekker's (1993) Existential Disclosure. Honcoop's main observation is that there is a striking overlap between the distribution of weak island violations on the one hand versus those situations in which an attempt to use Existential Disclosure to disclose an indefinite fails. By analyzing (at least some) weak islands as involving anaphora, Honcoop explains why it is that the same set of operators that disrupt anaphora in general (operators that are ''dynamically closed'' in the parlance of Dynamic Montague Grammar) are by and large the same operators that create weak islands.

Honcoop concentrates on three main empirical phenomena: traditional weak islands, the *what-for* split, and negative polarity. Other topics discussed in considerable depth in several places along the way include plurals, partial WH-movement, quantificational determiners, the semantics of questions, genericity, factive verbs, and much more.

Honcoop's analysis is insightful and robust, though perhaps rather closely tied to a specific version of Dynamic Montague Grammar. But even setting aside H's specific analysis, his discovery and exploration of the intricate patterns and generalizations governing these related but distinct phenomena makes a significant and satisfying contribution.

1. Weak islands

Honcoop's starting point are weak island effects.

(1) a. ?Who are you wondering whether to invite __?
    b. *How are you wondering whether to behave __?

In the Relativized Minimality treatment developed by Rizzi and Cinque, weak islands are supposed to be a mainly syntactic phenomenon. In (1b), because *how* (by hypothesis) does not receive a referential theta-role, it must move into an A-bar position, and therefore must antecedent-govern its trace in the underlined position. Antecedent government would require having a co-indexed element in the spec of the lower CP; but, given appropriate syntactic assumptions, the presence of *whether* disrupts establishing such a connection.

H recapitulates some of the well-known weakness of Relativized Minimality analysis, including the fact that it does not generalize in any natural way to explain why negation in (2b) and certain quantificational NPs such as *no student* as in (2c) also create weak islands:

(2) a. How did John behave __?
    b. *How didn't John behave __?
    c. *How did no student behave __?

Furthermore, the fact that Relativized Minimality must rely on an overtly semantic notion such as referentiality motivates seeking a semantic explanation.

H favors instead Szabolcsi and Zwarts' (1993/1997) semantic account of weak islands. For them, (2b) is

bad on the assumption that the type of semantic object questioned by *how* forms a join semilattice without a well-defined complement operation. As a result, negating the denotation of a constituent containing a *how* trace (i.e., **not** [[*John did behave* __]]) is undefined. In other words, the ontology simply cannot provide any appropriate set of manners in which John didn't behave. Similarly, the reason that quantificational DPs such as *no student* or *every student* create weak islands as in (2c) is because their truth conditions involve boolean operations such as negation and meet, which means that the resulting quantifier is also undefined over the set of manners.

(3) Who didn't John invite __?

The reason (3), on the other hand, is good is that *who* denotes in the domain of individuals, not manners, and the set of individuals is modeled by a full-fledged boolean algebra on which the complement and meet operations are well-defined. That is why it makes perfect sense to discuss the set of people John didn't invite (i.e., **not** [[*John did invite* __]]).

Incidentally, H relegates the crucial discussion of how Szabolcsi and Zwarts' explanation works to an appendix (p. 31), perhaps on the theory that it is too technical for the main text. But the main text is so highly technical anyway, I would have preferred for most of H's 9 appendices to have been incorporated into the text where they are needed. Certainly at least Appendix II to Chapter 1 and Appendix II to Chapter 4 contain material essential to the main argument and should not be skipped.

2. The *what-for* construction

The next step in H's development is to consider a number of other constructions that seem to be sensitive to the same set of interveners. The main two constructions treated in detail are the *what-for* construction in Dutch and negative polarity items, discussed here in turn.

(4) a. Wat$_i$ heeft Jan   voor een man$_i$ gezien?
       what has John for   a   man seen
       'What kind of man did John see?'
    b. *Wat heeft Jan   niet voor een man gezien?
       what has John not for   a   man seen
       'What kind of man didn't John see?'

(This example is (11) in the summary written by H published alongside this review.) Following H's terminology, I will say that *wat...voor een man* is a split constituent in which the indefinite *een man* intuitively serves to restrict the domain of objects that the WH phrase allows as appropriate answers. We have already seen that WH complementizers, negation, and certain quantificational DPs create weak islands; H shows that the *what-for* split is sensitive to each of these types of intervener.

Given that the same set of interveners create weak islands as disrupt the *what-for* split, we should search for a common explanation. Could Szabolcsi and

Zwarts' analysis of weak islands account satisfactorily for the *what-for* split as well? Clearly not, argues H (p. 145), since there is an unsplit analog of the *what-for* construction which is perfectly good even in the presence of negation and other weak island inducers:

(5) a. *Wat wil   jij   niet voor boek lenen?
       what want you not for book borrow
       'What kind of book do you not want to borrow?'
    b. Wat voor boek wil   jij   niet lenen?
       what for book want you not borrow
       'What kind of book do you not want to borrow?'

If (5a) were bad because the domain of book kinds had no complement, then (5b), which differs only in that the indefinite occurs syntactically adjacent to its WH phrase, should be equally semantically incoherent. Something in addition to Szabolcsi and Zwarts' account is needed to explain the sensitivity of the *what-for* split to weak islands.

H proposes that the *what-for* split is a form of anaphoric binding between the WH-phrase and the displaced indefinite. The motivation is that the same operators that create weak islands can be independently shown to disrupt anaphora in general:

(6) a. Tom invited a friend$_i$. She$_i$ arrived late.
    b. Tom didn't invite a friend$_i$. *She$_i$ arrived late.
    c. Every student invited a friend$_i$. *She$_i$ arrived late.

Thus negation in (6b) and the quantificational DP in (6c) prevent the indefinite in its scope from serving as an antecedent for the pronoun in the subsequent sentence.

3. Existential Disclosure

The theoretical question faced by H is how to establish the anaphoric connection between the WH word and the indefinite as indicated by the coindexation in (4a). The problem is that this seems to require an indefinite to be bound by a higher quantificational operator (i.e., the WH-phrase). H cannot, for instance, assume that indefinites are simply predicates that introduce a variable that can be bound in the style of, say, Heim's dissertation. The reason is that he adopts Dynamic Montague Semantics for his theoretical framework, which takes as one of its main assumptions that indefinites are always quantificational.

There are a variety of attempts to deal with binding indefinites in dynamic semantics. H follows Chierchia in adapting Dekker's (1993) technique of Existential Disclosure, which allows the quantifier introduced by an indefinite to be (in effect) "dissolved" in a sense discussed just below.

In fact, H adopts many of Chierchia's technical and expository strategies. In particular, he carries over Chierchia's astonishing notion that Montague's arcane notational conventions (that make his Intensional Logic so prickly to learn) provide a convenient and perspicuous language for expressing a dynamic semantics. Even for a semanticist like me who is old-fashioned enough to have been weaned on Dowty,

Wall and Peters, Groenendijk and Stokhof's original presentation of dynamic semantics seems much more straightforward. In H's defense, of course, what he is counting on is not that his readers will know Montague, but rather that anyone who even dabbles in dynamic semantics will be thoroughly familiar with Chierchia's indispensable book.

But Honcoop does not slavishly follow Chierchia's exposition. For instance, he postpones distinguishing discourse referents from ordinary variables until the second appendix to Chapter 4, probably wisely, and he avoids intensionality until the last possible moment.

Anyway, Existential Disclosure allows dynamic analyses of indefinites to have their quantificational cake and eat it too. To see how, consider Chierchia's (1995) use of Existential Disclosure to handle the classic case of what looks like an indefinite being bound, namely, donkey anaphora:

(7) a. Usually$_i$ if a man$_i$ drinks he$_i$ gets drunk.
   b. $\forall i$ ($\exists x$: **man** $(x) \wedge$ **drinks** $(x)) \rightarrow$ **drunk** (i)
   c. $\forall i$ (**man** $(i) \wedge$ **drinks** $(i)) \rightarrow$ **drunk** (i)
   d. $\forall i$ ($\exists x$: **man** $(x) \wedge$ **drinks** $(x) \wedge x = i) \rightarrow$ **drunk** (i)

If indefinites always introduce existential quantifiers, then (7a) means (7b), in which there is no necessary connection between the man doing the drinking and the individual that gets drunk. But intuitively, (7a) should mean (7c), in which the adverbial quantification determines the identity of the drinker as well as of the drunk. How can the universal possibly bind a variable already bound by an existential?

The answer is to add the requirement that $x = i$ to the material in the restriction, as in (7d), which is clearly equivalent to the desired interpretation in (7c). The identity clause "discloses" the identity of the variable introduced by the existential to the world outside the scope of the existential. It provides a door through which the universal can reach into the existential and control the choice of the man. The existential still provides its normal quantificational force, but that does not prevent the variable it introduces from (in effect) being bound.

Let me remark at this point that the dissertation is amazingly free of mistakes. I found one microscopic spurious accent on top of an *a* on page 6, and that's it for typos. On the technical level as well, despite examining several derivations very carefully specifically looking for errors, I was unable to find any. Nevertheless, I do have a technical objection concerning H's formulation and discussion of Existential Disclosure:

$$\underline{\lambda} x(\Phi) =_{\text{def}} \underline{\lambda} x' (\Phi \underline{\wedge} \uparrow x = x') \quad [\text{where } x' \text{ is not free in } \Phi]$$

The problem is H's requirement that x' not be free in Φ. Dekker requires the exact opposite, that x' be free, and Chierchia (1995:104) remains silent on this point. I suspect Dekker's condition is preferable. Note that Honcoop's version allows choosing an x' that is accidentally identical to x, in which case the abstraction will be vacuous. Furthermore, H's version also

allows accidentally choosing x' equal to the variable bound by some other instance of existential quantification embedded within Φ, which would be a truth-conditional disaster. Probably the safest thing to do is choose x' fresh, i.e., distinct from every symbol in Φ.

Obviously, this objection is not terribly important, but in fact, that is my point: H's analysis is unusually robust.

4. Explaining intervention in the *what-for* construction

So let's see how the analysis works with a good *what-for* example and then with a bad one that contains an intervener.

(8) Wat$_k$ heeft   Jan   voor een boek$_k$ gelezen?
    what   has   John for   a   book   read
    'What kind of book did John read?'

Through some syntactic mechanism left unspecified by H (p. 89), the WH-phrase and its detached indefinite come to be coindexed in a way that requires Existential Disclosure to target the variable corresponding to the index introduced by the indefinite:

(9) a. $\lambda k(\exists k(\uparrow$**kind-of-book** $(k) \underline{\wedge} \uparrow$**read(jan**, $k)))$
   b. $\lambda k'(\exists k(\uparrow$**kind-of-book** $(k) \underline{\wedge} \uparrow$**read(jan**, $k))$
   $\underline{\wedge} \uparrow k = k')$
   c. $\lambda k'(\underline{\exists} k(\uparrow$**kind-of-book** $(k) \underline{\wedge} \uparrow$**read(jan**, $k)$
   $\underline{\wedge} \uparrow k = k'))$
   d. $\lambda k(\uparrow$**kind-of-book** $(k) \underline{\wedge} \uparrow$**read(jan**, $k))$

Thanks to the definition of Existential Disclosure and other properties of H's dynamic semantics (see H's summary accompanying this review), we get the desired result: the existential has in effect been "dissolved" (or, as Szabolcsi and den Dikken put it, the quantifier has been converted to a property), and the indefinite serves to restrict the variable questioned by the WH word.

Now for a bad example in which an intervener disrupts the anaphora:

(10) *Wat$_k$ heeft Jan   niet voor een boek$_k$ gelezen?
     what   has   John not for   a   book   read
     'What kind of book didn't John read?'

(11) a. $\lambda k(\underline{\textbf{NOT}} (\exists k(\uparrow$**kind-of-book** (k)
   $\underline{\wedge} \uparrow$**read(jan**, $k))))$
   b. $\lambda k'(\underline{\textbf{NOT}}(\exists k(\uparrow$**kind-of-book** (k)
   $\underline{\wedge} \uparrow$**read(jan**, $k))) \underline{\wedge} \uparrow \boxed{k} = k')$

Unfortunately, H does not present a concrete analysis of a weak island violation, so I am guessing a little at how it would go, based on the schema H gives on page 93. The key element here is the presence of dynamic negation taking scope over the existential. Because negation is dynamically closed, the existential cannot affect the value of the boxed variable k, which was introduced in (11b) by exploiting the definition of existential disclosure. As a result, it would be invalid to bring the disclosed

variable within the scope of the targeted indefinite, as we did in the step between (9b) and (9c). Therefore the boxed variable remains free (in a non-standard but reasonable sense of 'free' left unformalized by H).

In general, any application of Existential Disclosure targeting an existential within the scope of a dynamically closed operator will give rise to a free variable. H proposes to rule this out by a general prohibition against free variables (pp. 44, 93): assuming that assignment functions are partial functions, and that discourses are always evaluated against the empty assignment, then a formula containing a free variable will eventually be evaluated against an assignment function that is not defined for that variable. As a result, the denotation of any formula that contains a free variable will be undefined. (In case you were wondering, on page 44 we learn that H intends to handle deictic pronouns not as free variables, but "following Chierchia (1995)" as covert definite descriptions, i.e., as E-type pronouns.) Whether or not you are willing to outlaw all free variables, the contrast in the status of the disclosed variable in the good and bad version seems sufficient to me to carry the intuitive difference between the two examples.

Interestingly, a closely analogous line of reasoning correctly predicts that the restrictor half of a split constituent must be predicative. For instance, H shows (p. 92) that placing, e.g., an essentially quantificational DP in restrictor position (*_Wat heft Jan voor elk boek gelezen_, 'What has John for **every** book read?') also results in an interpretation with an illegal free variable.

5. NPI licensing

The second major application of the Big Idea concerns negative polarity licensing. In some ways this is the more intriguing of the two main proposals, but it is also the more controversial, if only because the market for analyses of negative polarity is so competitive. The basic idea is quite appealing:

(12) Nobody thinks Tom ate anything.

In the typical instance of a nominal NPI, there is a trigger (_nobody_) that can plausibly be analyzed as quantificational, and lower down, a negative polarity item (an NPI, here, _anything_) that can plausibly be considered as an indefinite. If we stipulate that the trigger binds the NPI (naturally, via Existential Disclosure), then an attempt to insert a dynamically closed quantifier in between the trigger and the NPI should result in a Weak Island type violation. This prediction is not without empirical support:

(13) *Nobody thinks everyone ate anything.

H is unsatisfied with this approach, however, finding it insufficiently explanatory: it does not shed any light on the connection between triggers and downward monotonicity, and it gives incorrect truth conditions for weak NPIs (e.g., we don't want to analyze the subject quantifier in _At most three people ate anything_ as quantifying over pairs of people and what they ate).

Therefore H endorses a Krifka-style pragmatic approach to negative polarity which hinges on calculating implicatures. Krifka suggests that NPIs are a kind of crypto-focus construction. If we assume that a use of an NPI requires that each member of the alternative set (arrived at by substituting various individuals in place of the NPI) must be entailed by the truth conditions of the original sentence, then choosing to insert the NPI turns out to be the most informative alternative, in the sense of giving rise to scalar implicatures that entail all of the other alternatives. (This reasoning works at least for those NPIs that happen to be minimal amounts such as _a red cent_ or _anything_, which includes most but by no means all NPIs.) On this approach, an NPI will be licensed only if it entails all other propositions in the relevant alternative set, i.e., only if it is maximally informative.

H suggests that it is at the level of calculating implicatures that we need to think of the NPI indefinite as needing disclosure. In order to calculate the alternative set, we must abstract over the position of the NPI. Since the NPI is itself an existential, in order for the abstraction to have the desired interpretation, we must use Existential Disclosure. (As H himself notes (p. 109), by the way, there are many "tricky problems" involved in introducing Existential Disclosure in just the right places in a compositional manner, problems that are not addressed in the dissertation.) If so, we would expect NPI licensing to behave the same as the _what-for_ split (and other weak islands) with respect to intervention, and H goes on to give extensive empirical evidence that this is indeed the case for a number of different kinds of intervention effects.

H offers an interesting empirical argument in favor of the Existential Disclosure approach over Kas' (1993) algebraic approach. According to Kas, weak NPIs require that the expression containing the NPI and its trigger denote a downward-monotone function. Kas' explanation for interveners is that their contribution to the interpretation prevents the larger expression from denoting a downward-monotone function. Strong NPIs, on the other hand, require that the corresponding expression denote an anti-additive function. H observes that if this is correct, the prediction is that the set of interveners for weak NPIs ought be different than the set of interveners for strong NPIs, contrary to fact. On the other hand, if H is correct about intervention being a side-effect of Existential Disclosure, we correctly predict that the same set of interveners will disrupt licensing of weak and strong NPIs. The force of this victory is undercut, however, by the fact that H admits elsewhere (fn 23, p. 114) that on his account there is no explanation for why there should be classes of

NPIs that require different triggering environments in the first place (though in H's defense, no one else can explain why either).

6. Deriving the set of interveners

The natural next question is whether H's Existential Disclosure analysis will extend to provide a unified account of all weak islands. H argues that the answer is no. For one thing, if you look back at (1), there is no indefinite to serve as the target for Existential Disclosure.

For another, Szabolcsi and Zwarts point out that their theory allows some WH phrases to be sensitive to some interveners but not others, depending on their semantics. Recall that we saw above that negation and quantificational DPs determined by *every* can be interveners.

(14) a. *How many laps hasn't John covered by now?
b. How many laps has every swimmer covered by now?

Assume that *how many* has an interpretation that involves denotations in the set of natural numbers, and that the natural numbers form a lattice that is closed under join and meet but not complement. Then Szabolcsi and Zwarts correctly predict that *how many* will be sensitive to interveners that involve negation, as in (14a), yet will be compatible with interveners whose semantics involves only boolean meet, such as the denotation of *every*. On H's anaphora treatment of the *what-for* split, in contrast, if an expression is an intervener under any circumstances, it is always intervener, and (14b) is incorrectly predicted to be ungrammatical.

Therefore we clearly need different analyses for at least some WH-type weak islands versus split constructions. Yet the fact that both phenomena involve essentially the same class of interveners cries out for an explanation. H does not work out such an explanation completely, but he provides a very intriguing and promising proposal. The idea (which H notes is anticipated in a footnote in earlier work of Szabolcsi and Zwarts) is that operators that are dynamically closed (i.e., that disrupt anaphoric relations) are exactly those whose semantics involve boolean complement and meet (negation, *every*, etc.). H provides a stimulating discussion of possible explanations for this generalization involving informativity, along with some problems and refinements. The ultimate unified account, however, is left for future researchers.

Sadly, Martin Honcoop died in May of 2000. In view of the the contribution made by the dissertation and the promise of even greater work to come, his untimely death is a great loss to the field.

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