1. Strong vs. weak islands

"Islands" is the cover term for nodes which obstruct syntactic movement, i.e. antecedent-trace dependencies, as in (1a). Islands do not stand in the way of the establishment of (A′-) dependencies *in general*: (1b) is grammatical. By way of a representational convention to be used throughout this paper, islands are enclosed in angled brackets, and the empty position within an island linked to an antecedent outside the island is marked with the aid of a single underscored space.

(1) a. **This kid, I must call <the teacher who punished _>*
b. *This kid, I must call <the teacher who punished him>*

Islands come in two flavors: *strong* (or absolute) islands and *weak* (or selective) islands, the latter blocking extraction of some but not all phrase types. This dichotomy is not particularly straightforward; moreover, the borderline between strong and weak islands is not very firm, there being a number of intriguing empirical parallels between the two (see Szabolcsi 1999, section 3.4.2 for discussion of issues relating to the strong/weak dichotomy which space does not allow us to address here). We will follow standard practice in assuming that the dichotomy exists, and in taking Cinque's (1990) key diagnostic for it as the way to tease them apart (but see Postal 1998 for an alternative way of cutting the weak/strong pie, in terms of "locked" vs. "unlocked" islands, and also for a wealth of novel data):

(2) CINQUE'S DIAGNOSTIC OF STRONG VERSUS WEAK ISLANDS
Among the domains that do not allow all standard extractions, those that allow a PP-gap are weak islands, and those that can at best contain a DP-gap are strong islands.

By this diagnostic, adjunct islands are *strong* islands (cf. (3a)) while non-finite *wh*-islands are *weak*, at least for many speakers (cf. (4a)). Finiteness functions as an "overlay," strengthening otherwise weak islands — the b-examples in (3) and (4) get worse once the infinitival clauses are converted into their finite counterparts.

(3) a. **This is a topic about which John left <without talking _>*
b. *?This is a topic which John left <without talking about _>*
c. **This is the way that John left <without behaving _>*
(4) a. *%This is a topic about which John asked <whether to talk _>*
b. *?This is a topic which John asked <whether to talk about _>*
c. **This is the way that John asked <whether to behave _>*

2. Preview

Up until the late eighties, virtually all islands (with the exception of *wh*-islands) had been thought to be of the strong kind. With the advent of Relativized Minimality (Rizzi 1990), however, an ever growing variety of weak islands has come to be recognized. Concomitantly, theories of weak islands have mushroomed, each typically coming with a significant set of novel data and important new links to other domains of inquiry. No such upsurge has presented itself in the realm of strong islands, and there is a broad consensus as to their analysis in the theory. Moreover, there has been virtually no attempt made in the literature to unify accounts of weak and strong islands — a notable exception being Starke (2001), where subset/superset relations among feature classes are exploited to deliver an account of *all* islands, couched in the Relativized Minimality framework.

Reflecting the general imbalance, in this paper we will bring up strong islands only to set the stage for the discussion of weak islands — their inducers, the kinds of elements whose extraction is sensitive to them, and the theoretical questions they pose. We will lay out the key facts and the major players on the analytical field, with a generous bibliography on weak and strong islands being provided at the end.

3. Strong islands

3.1. Bird's eye view

Classic discussions of islands (starting with Ross's 1967 seminal work) have typically focused on *strong* ones (with the exception of certain *wh*-islands). The following is a list of strong islands (where, for the sake of gaining space, we will present illustration only with DP-gaps).

- adjunct clauses (see (3))
- tensed *wh*-clauses (but not tenseless ones; cf. (4))

(5) *?*This is a topic which John asked <who was talking about _>*

- definite DPs (cf. Fiengo & Higginbotham 1981; Manzini 1992, 1998)

(6) *Which man did you discover <{*Mary's/??the/✓a} poem about _>?*

- definite complex DPs with relative clauses (but not indefinite ones; cf. Postal 1998)

(7) *What the police arrested <{*the man/?everyone) who saw _> was this video*

- definite complex DPs with complement clauses (but not indefinite ones; cf. Rothstein 1988)

(8) *Which man did they consider <{*the/?∅} rumors that Bob would betray _>*

- subjects (regardless of definiteness), unless clausal (presumably because so-called sentential subjects are topics rather than subjects; cf. Koster 1978b

(9) a. **Which man did <(his) visiting _> shock you?*
b. *?This is something which <for you to try to understand _> would be futile*
(Kuno & Takami 1993)

- coordinate structures, unless extraction is across-the-board (10b) or a "fake coordination" is involved (10c) (on the latter, cf. section 1.9 of Progovac, this vol., and especially Postal 1998 for detailed discussion)

(10) a. **Which man did you invite <Mary and (a friend of) _>?*
b. *Which man did you invite <a friend of _ or a brother of _>?*
c. *This is the beer that I <bought _, loaded _ into the car, went home, and then fell asleep>* (Jacobson 1996)

- left branches (in some languages) (see Corver 1990)

(11) a. **Which (man's) did you see <_ picture>?*
b. *Combien as-tu lu <_ de livres>?*
how-many have-you read of books

3.2. Types of explanation

The standard explanation of the islandhood of Complex DPs, Subjects, *wh*-complements, and Left Branches is in terms of *Subjacency.* Subjacency is classically viewed as a condition on movement requiring that movement not cross more than one *bounding node*, with bounding nodes originally defined in terms of a list — NP and S (= DP and IP) for English (Chomsky 1973, 1977), NP and S′ (= DP and CP) for Italian (Rizzi 1978). (See Richards 1997 for detailed discussion of strong island effects arising at LF, and also of the lifting of such effects in the presence of another movement operation of the same type which does not cross the island and pays the "subjacency tax," thereby satisfying his Principle of Minimal Compliance.)

Chomsky (1986) redefines bounding nodes as *barriers*, which are themselves defined in terms of *blocking categories* (BC). An XP is a BC for an element α iff XP dominates α and is not L-marked (i.e., θ-governed by a lexical category). All BCs for α *except* IP are also *inherent barriers* for α; in addition, a node YP which immediately dominates XP (a BC for α) will be a *barrier by inheritance* for α. Chomsky (1986) assumes that movement is constrained by 1-subjacency (i.e., not more than one barrier should separate a trace from its antecedent); but crossing even a single bounding node leads to a mild degradation, and moreover, Chomsky (1986) crucially invokes 0-subjacency as a constraint of "chain composition," operative in his analysis of parasitic gap constructions. Cinque (1990) takes a 0-subjacency approach, *en passant* rethinking subjacency as a constraint on binding chains, not just movement.

In Chomsky (1999), the classic theory of bounding nodes and locality is partially recast in terms of (strong and weak) *phases*, in conjunction with a Phase Impenetrability Condition which makes only the head and the edge of a phrase accessible to syntactic operations (see also McCloskey 2000 for an approach to locality effects and resumption in Irish couched in the "derivation by phase" model). Phases include *v*P and CP, and arguably also DP. (Chomsky's difference between weak and strong phases does not translate into the distinction between weak and strong islands: the variety of weak islands canvassed below is such that no definition of "weak phase" is likely to capture it.)

Adjunct islands are standardly explained by Huang's (1982) Condition on Extraction Domains (CED), hence by the Empty Category Principle (ECP): an extraction domain needs to be properly governed. Likewise, Pesetsky (1982) subsumes the Coordinate Structure Constraint under the path containment version of the ECP. The ECP has also been held responsible for the fact that adjuncts are impossible to extract out of islands, strong or weak (cf. the c-examples in (3) and (4)).

Manzini's (1992) integrated theory of locality is the only attempt to unify the effect of tense (cf. (4) vs. (5)) and definiteness (cf. (6)) with other locality phenomena: D and T block dependencies based on *Case-addresses*, which, in her theory, DPs otherwise rely on to escape from islands (dependencies based on categorial indices being blocked across all islands).

Manzini's approach in terms of Case-addresses is only one of the extant ways of making the DP/PP distinction, which serves as Cinque's principal diagnostic for the strong/weak dichotomy (cf. (3a) vs. (3b)). Chomsky (1986:32, 66), who notes it in passing and attributes the observation to Adriana Belletti, suggests an account of the contrast in (3a,b) in terms of the Barriers theory of adjunction (such that intermediate adjunction to the adjunct PP to circumvent the island is allowed only in the case of extraction of a DP). Alternatively, the DP/PP dichotomy is due to the fact that DP-gaps may be *null resumptive pronouns* while PP-gaps cannot be — there are overt resumptives for noun phrases but according to Cinque (1990) there are none for PPs.

(12) The DP-gap inside strong islands is not a trace but an A′-bound empty pronoun, *pro*.

Perlmutter (1972) originally proposed that *all* extractions leave invisible resumptive pronouns, regardless of whether the gap is in an island or not. Obenauer (1984/1985) claims that *all* extraction *from islands* involves null resumptives. Postal (1998) essentially follows this line of thought, while appealing to a different cutting of the strong/weak pie. Cinque (1990) narrows the application of the null resumption strategy down to A′-dependencies between a *DP* and a gap contained in a *strong* island. Rizzi (2000) picks up on the generalization that A′-dependencies across strong islands succeed only in the case of DP-dependencies, extending the account into the realm of weak islands, which we turn to next.

4. Weak islands

4.1. Bird's eye view

Leaving the strong islands behind, we now embark on a voyage in the archipelago of weak islands (WIs). These come in a variety of forms, listed in (A), below, according to the types of

constituents which *induce* WI effects. The list in (B) enumerates the types of elements whose extraction is *sensitive* to WIs.

(A) *What induces a WI?*

- (A1) tenseless *wh*-questions
- (A2) VP-adverbs
- (A3) negatives and other affective operators
- (A4) response stance and non-stance vs. volunteered stance predicates
- (A5) scope islands
- (A6) extraposed constituents
- (A7) anti-pronominal contexts (cf. Postal 1998)

(B) *What constructions are sensitive to WIs?*

- (B1) extraction/wide scope of adjuncts and predicates (versus arguments)
- (B2) extraction/wide scope of non-referential (versus referential) expressions
- (B3) extraction/wide scope of non-D(iscourse)-linked (versus D-linked) expressions
- (B4) extraction/wide scope of non-individuals such as manners, amounts, predicates, and collectives
- (B5) functional readings and event-related readings
- (B6) split constructions
- (B7) negative polarity item (NPI) licensing
- (B8) cross-sentential anaphora

For an exhaustive overview of the ins and outs of the WI-inducers and WI-sensitivity, we refer the reader to Szabolcsi (1999). In what follows, we will highlight the main *theoretical* issues in the domain of weak islands, zooming in on the three major players in the field, as listed in C where, for each approach, we have listed the data and generalizations accounted for (the % sign indicating a partial account). As a caveat, we should point out that C3 collapses two distinct versions of the Scope Theory, whose individual empirical coverage is not as broad as their sum total.

(C) *Theories of weak islands*

(C1)	ECP and Subjacency	(A1)	(B1)
(C2)	Relativized Minimality	(A1, A2, A3%, A4%, A6%)	(B2, B3, B6)
(C3)	Scope Theory	(A1, A2, A3, A4, A5, A6%)	(B3–B8)

In the presentation to follow, we will bring up the various theories in conjunction with the empirical data to which they are most closely tied — more or less as a reflex of the fact that practically each new theory of island phenomena in the literature comes with its own new set of data. Space preventing a more detailed outline of the facts, we will often resort to illustrating weak islands just with adjunct extractions.

4.2. Types of explanation

4.2.1. ECP and Subjacency (C1)

The historical starting point when it comes to weak islands is the assumption, made in Huang (1982), Lasnik & Saito (1984, 1992) and Chomsky (1986), that the paradigmatic (if not the only) case of weak islands is (tenseless) *wh-islands* (A1):

(13) a. ?*Which man are you wondering <whether to invite _>?*
b. **How are you wondering <whether to behave _>?*

The distinction between *arguments* and *adjuncts* (B1) seen in (13) is standardly taken to follow from the division of labor between the *Empty Category Principle* and *Subjacency* (C1). While all extraction out of a *wh*-island violates the Subjacency Condition (hence delivers a degraded result, to a greater or lesser degree depending on factors such as finiteness and definiteness), adjunct extraction from such an island in addition incurs a violation of the ECP, in ways that differ in detail in the various approaches developed in the literature but which need not be made precise in the present context. The essence is that the extraction of some phrase is ECP-sensitive to *wh*-islands because of the fact that it originates in a non-argument position.

On the ECP and Subjacency approach, the theory of weak islands is purely syntactic, both with respect to the WI-inducer (a constituent with a filled SpecCP, occupying the "escape hatch" position) and when it comes to the sensitivity of extractees to weak islands (originating in argument or non-argument positions). But through the years it has become clear that such a straight and simple syntactic classification of WI-inducers and WI-sensitive expressions is insufficient to cover the data uncovered in the archipelago of weak islands, on both counts. In the inducer domain, it is especially the scope islands (A5) that lay bare the inadequacy of a strictly syntactic approach. And in the realm of WI-sensitive expressions it is not at all obvious how, alongside non-individual *wh*-phrases, we might capture the amount and event-related readings of numerical QPs, functionally interpreted *which*-phrases, definite dependents of "one time only" predicates and negative polarity items under one and the same syntactic umbrella.

The first indication that the C1 approach was inadequate came from Obenauer's (1984/1985) observation that *VP-adverbs* (A2) block so-called "quantification at a distance" (QAD; cf. (14)), a case of "split constructions", B6 (see also de Swart 1992, Honcoop 1998 for cases of Dutch *wat voor* split blocked by VP-adverbs; see (34) for illustration, and see Rizzi 2000 for a similar case of "splitting" in Italian, involving *wh ... d'altro* '*wh* else'). That they also block adjunct extraction (B1) is illustrated in (15) (see Doetjes 1997 for discussion).

(14) a. *J'ai beaucoup consulté [_ de livres]*
I have a-lot consulted of books
'I consulted a lot of books'
b. **Combien as-tu < beaucoup consulté [_ de livres]>?*
how-many have-you a-lot consulted of books

(15) a. **How did you <behave _ a lot>?*
b. **How did you <behave _ twice>?*

These island effects clearly do not fit the classic "escape hatch" model developed on the basis

of *wh*-islands, for the simple reason that VP-adverbs do not occupy any escape hatch position.

4.2.2. Relativized Minimality (C2)

Rizzi (1990) capitalized on Obenauer's data in (14b) and used them as the key to a novel theory of locality. His *Relativized Minimality* (C2) deserves the credit of being the first relatively broad-scale attempt at providing the classic "escape-hatch based" approach to weak islands (C1) with a more empirically accurate successor (see also Cinque 1990, and Rizzi 2000 for an updated approach taking Cinque 1990 and Chomsky's 1995 copy theory of traces into account).

Rizzi (1990) builds primarily on the theoretical analysis of QAD in Obenauer (1984/1985), whose crucial insight is that a local relation between an operator and its variable is blocked by the intervention of any third party that may be derivationally totally unrelated to them but is sufficiently similar to the operator. Relativized Minimality is a representational theory of "like" intervention. It replaces Chomsky's (1986) "rigid" approach to minimality (according to which only an intervening head governor induces a minimality barrier) by a theory which relativizes minimality to the kind of relationship that obtains between the governor and the dependent:

(16) RELATIVIZED MINIMALITY
X α-governs Y only if there is no Z such that
(i) Z is a typical potential α-governor for Y, and
(ii) Z c-commands Y and does not c-command X.

Rizzi distinguishes four kinds of values for α: head, antecedent in an A-chain, antecedent in an A-bar chain, and antecedent in a head-chain. Recent developments of Relativized Minimality are Chomsky's (1995) Minimal Link Condition and its revision in Manzini (1998).

Since we are concerned with chains headed by a *wh*-phrase in A′-specifier position, all and only A′-specifiers are relevant interveners in the discussion to follow. That *wh*-expressions such as *who* and *whether* count as such will not be surprising, so the classic *wh*-island effect is straightforwardly accommodated. The VP-adverb facts reviewed above also fit in, on the assumption that the VP-adverbs in question occupy an A′-specifier position.

The theory can also be applied to explain the WI effects induced by *negative and other affective operators* (A3), illustrated in (17) (cf. Williams 1974 for the original observation that (unstressed) negatives block adjunct extraction; also cf. Ross's 1984 *Inner islands*, and Rizzi 1990 for a broadening of the empirical domain to all affective operators in the sense of Klima 1964):

(17) a. **I asked how John <didn't behave _>*
b. **How did <few men think that you behaved _>?*
c. **How did <only John think that you behaved _>?*
d. **How did <you deny that you behaved _>?*

Rizzi (1990) accommodates the blocking effect of affective (or downward entailing) operators by assuming that they come to occupy A′-specifier positions at LF (see Rullman 1994, 1995 for a semantic explanation in terms of maximality effects). That analysis has difficulty, however, accounting for the parallel behavior of negative verbs like *deny*, seen in (17d), which could raise to an A′-specifier position only on pain of a violation of Structure Preservation. Nor is *deny* the only head that induces WI effects — the broader generalization, due to Cattell (1978) (cf. also Hegarty 1992), is that all so-called *response stance and non-stance predicates* (A4) block extraction of WI-sensitive expressions. Response stance includes, alongside *deny*, items like *accept*, *confirm*, *verify*, *admit*. Non-stance includes a large class of factive verbs: *realize*, *know*, *regret*, *remember*, *surprise*, *notice*, etc.

Cinque (1990) suggests that factive complements are islands because they are not a sister to the verb, on the assumption that clauses from which extraction takes place must be sisters of a θ-marking [+V] head. (This assumption carries over to *extraposition islands* (A6), which we will not discuss.) Cinque's approach to factive islands is tantamount to saying that not all complements are sisters to the selecting head — a heterogeneous, hence conceptually unattractive perspective on complements. An alternative analysis within the Relativized Minimality framework suggested by Progovac (1988) and Melvold (1991) has it that there is a null operator in the SpecCP position of the complement of verbs like *regret* and *deny*. On this approach, these islands are reduced to the typical case of an intervening A′-specifier.

4.2.3. WI-sensitivity — From syntax, via pragmatics, to semantics

The discussion of Relativized Minimality so far focused primarily on its account of WI-*inducers* and its empirical superiority over the ECP-*cum*-Subjacency approach. But Relativized Minimality was also instrumental in toppling the C1 approach in the domain of WI-*sensitivity*.

The classic approach (cf. Huang 1982; Lasnik & Saito 1984, 1992; Chomsky 1986) capitalizes on a purely syntactic property here: the argument/adjunct dichotomy (B1, extended by Roberts 1987 and Baltin 1992 to include predicates: **How flat didn't John hammer the metal?* and **How intelligent do you wonder whether to consider John?*). But this is too blunt a move, for various reasons.

First, the temporal adverbial *when* is noticeably less sensitive to WIs than, for instance, *why* or *how*; and moreover, *where* does not fit the B1 picture at all because its WI-sensitivity does not seem to depend on whether it is subcategorized for or not:

(18) a. *{*Why/*How/??When} did John ask <whether to do this _>?*
b. ?*Where did John ask <whether to {put/read} this book _>?*

Rizzi's Relativized Minimality presents an account of the fact that temporal and locative phrases are less sensitive to WIs than manners and reasons built on the role played by *referentiality* (B2) in the domain of WI sensitivity. According to Rizzi, *manner* and *reason* phrases may be arguments but they do not have the theta-roles of event-participants (i.e., they do not have *referential* theta-roles). This is what makes them inextractable from weak islands. In this respect they are just like *amount* phrases (cf. (19b)), which, though subcategorized by the verb, are nonetheless WI-sensitive (Ross 1984). Cases like (19b) constitute the crucial

argument that for a chain to originate in an argument position is not enough: a successful extractee must also be *referential* in some sense (or, as É. Kiss 1993 has it, *specific* in the sense of Enç 1991). On the other hand, as events take place in time and space, Rizzi surmises that the event specification may license a temporal and locative index that accounts for the reduced WI-sensitivity of *temporal* and *locative* phrases.

(19) a. *What did <no imitation pearls touch _>?*
b. **What did <no imitation pearls cost _>?*

Noting the problem that his earlier approach in terms of referential indices runs up against in the face of Chomsky's (1995) inclusiveness condition, Rizzi (2000) updates the account in terms of the copy theory of traces. Drawing on work by Kroch (1989), Comorovski (1989) and especially Cinque (1990), the account makes a finer distinction that involves *pragmatics*: a referential *wh*-phrase, in addition to having a referential theta-role, needs to be *D(iscourse)-linked* (B3), i.e. drawn from a pre-established set. For Rizzi, what it means for a *wh*-phrase to be D-linked is that the lexical restriction of its *wh*-operator is "topic-like," hence independently licensed in the left-periphery of the clause, and thereby immune to the Preference Principle of Chomsky (1995), which wants the lexical restriction in the operator position to be minimal. For non-D-linked *wh*-phrases, the Preference Principle leads to the elimination at LF of the lexical restriction in the operator position, and concomitantly (given a representational definition of traces, which says that a trace is a portion of structure c-commanded by an identical substructure in a certain representation) to a "shrinking" of the trace at LF to just the *wh*-operator: *How much milk can you drink <how much milk>* "shrinks" at LF into *How much can you drink <how much> milk* (where angled brackets delineate trace-copies). As a result, A′-dependencies in cases of extraction of non-D-linked *wh*-phrases are reduced at LF to cases of overt-syntactic *sub*extraction of just the operator, like (14a), with the familiar weak island effects ensuing. For D-linked *wh*-phrases, by contrast, the lexical restriction of the operator is independently licensed as a topic, which means that the trace in this case will not be "shrunk" but will retain its DP-status. The generalization that then suggests itself is that, just as in the case of strong islands, it is only DPs that can form A′-dependencies across weak islands. (On PP-extraction from weak islands on Rizzi's approach, see section 5, below.)

But let us go back to the origins of the *D-linking* account of weak island immunity (Kroch 1989, Comorovski 1989, Cinque 1990), and evaluate the general viability of that approach. The most persuasive examples advanced to underpin the role played by D-linking involve *how many*-phrases. The good examples below involve a contextually established set of books or a specific range of points that figure skating jurors conventionally assign to mistakes in the program.

(20) a. **How many books are you wondering <whether to write _ next year>?*
b. *How many books on the list are they wondering <whether to publish _ next year>?*
c. **How many points are you wondering <whether to earn _>?*
d. *How many points are the jurors debating <whether to take off _>?*

The proposals reviewed immediately above define WI-sensitivity in terms that combine syntax with pragmatics. The pragmatic argument is very powerful: indeed, almost any *wh*-phrase (save for *why*, perhaps) can be made immune to WIs by D-linking. But "aggressively non-D-linked" *wh*-phrases such as *wh-the-hell* (Pesetsky 1987) should be systematically unextractable from weak islands. The deviance of (21a) seems to go along with this prediction of the pragmatic account. But as Szabolcsi & Zwarts (1993) point out, (21b) is felicitously used when seeing someone rifling through a dictionary. In a context such as this, we have unquestionable evidence that there exists a referent of the object of the embedded verb, and we can ask a *wh-the-hell* question in order to identify that object.

(21) a. ??*Who the hell are you wondering <whether to invite _>?*
b. *What the hell do you still <not know <how to spell _>>?*

Szabolcsi & Zwarts (1993) argue that the moral of "salient checklist" examples such as (20) is that D-linking is not the discriminating factor when it comes to WI-sensitivity; instead the checklist turns elements of a *non-individuated* domain into discrete *individuals* (B4). D-linking may play an important role in transforming a domain but, Szabolcsi & Zwarts claim, it is not D-linking itself but the emergent set of individuals that is decisive.

Perhaps the clearest example demonstrating the significance of individuals, in contra-distinction to D-linking, comes from Dobrovie-Sorin (1994). Clitic doubling in Romanian signals D-linking, and indeed, it enables a *how many*-phrase to extract from a factive island:

(22) *Pe cîte femei regreți <că le ai iubit _>?*
prep how-many women regret-you that them have loved
'how many (of the) women are such that you regret having loved them'

On the other hand, *cîte femei* 'how many women' can be extracted even if it is not doubled by *le* and, consequently, is not D-linked. It turns out that the critical factor is whether it is interpreted as quantifying over numbers of women (case (a), which is bad) or over individual women (case (b), which is okay):

(23) *Cîte femei regreți <că ai iubit _>?*
how-many women regret-you that have loved
a. *'for what number, you regret having loved that number of women'
b. 'how many women are such that you regret having loved them'

These data lead to the conclusion that *semantics*, rather than pragmatics, plays the real role in the characterization of WI-sensitivity — in particular, the *individual/non-individual distinction* (B4) is what sets apart WI-escaping *which/what*-phrases from manners, reasons, amounts, and other WI-sensitive expressions (when the latter are not individuated by contextual brute force); see also Aoun (1986), Frampton (1990), Rullman (1993), Szabolcsi & Zwarts (1990, 1993) and Cresti (1995). This conclusion is further confirmed by Cresti's observation that *wh*-phrases on their *functional readings* (B5) are also WI-sensitive:

(24) a. *I know which book you wonder whether no/any student read*
b. **I know that you wonder whether no/any student$_i$ read her$_i$ mother's book*
c. *I know that you wonder whether no/any student read War and Peace*

This fact would be impossible to explain on the earlier, syntactic or pragmatic, theories. Cresti argues that on the functional reading, the trace of *which book* must be of a higher order, functional type, as opposed to the individual type. Functional readings neatly fall under the individual versus higher order generalization.

Both Cresti (1995) and Rullman (1993) propose a *filter* that requires elements that extract from out of an island to be of type *e*, the type of individuals. But they do not offer an explanation for why this should be the case. It is here that the primary contribution of Szabolcsi & Zwarts' (1993) work lies — as will be seen in 4.2.5, they present a general theory of *scope* from which an *explanation* for why certain expressions (the WI-sensitive ones) are unable to scope above certain others (the WI-inducers) follows as a theorem.

4.2.4. Scope islands (A5)

The weak islands we reviewed so far are all cases of *intervention* islands: the WI is induced by the intervention of a certain element between the final locus of the extracted phrase and its extraction site. As we have seen, Relativized Minimality generally accommodates these with ease (see Szabolcsi & Zwarts 1990 for a recasting of these results in semantic terms, taking *monotonicity* to be the key to the identification of harmful interveners). But despite the impressive coverage of this approach, it seems unlikely in the final analysis that the entire class of WI-inducers can be identified as intervening A′-specifiers. The discovery of a body of *scope islands* (A5) eventually carried this conclusion home.

At first sight, it would seem that, while *wh*-, negative (or downward entailing/ affective) and VP-adverbial intervention induces a weak island, that of other operators is harmless — a sentence like *How did every boy behave?* is grammatical. But the scope of the *every* QP is essential here. *Every boy* is three-ways scopally ambiguous — it may scope either below or above a *wh*-phrase, or be scopally independent of it. Let us illustrate the three possibilities with an example where the *wh*-phrase is immune to WIs:

(25) *Which book did every boy read _?*
a. *every > wh*
'For every boy, which book did he read?'
b. *wh > every*
'Which book is such that every boy read it?'
c. independent scope (uniformity presupposition)
'Taking for granted that every boy read the same book, what was this book?'

Reading (25a) is often called a pair-list reading, as it is answered by a list of pairs: 'Bill read *Magic Mountain*, Jim read *The Russia House*, ...'. Readings (25b) and (25c) both ask for a single book that was read by every boy, but differ as to the possibility of what else each boy may have read. For instance, if Bill read *Jurassic Park* and *Tom Jones*, Jim read *Jurassic Park* and *Airframe*, and so on, reading (25b) is felicitous and the answer is '*Jurassic Park*.'

Reading (25c) is not felicitous in the same situation: it presupposes that each boy read just one book, and moreover, the same one, and merely asks to identify the book. The question is whether these three readings are equally possible when *every boy* interacts with a WI-sensitive expression.

É. Kiss (1993) and de Swart (1992) make the fundamental observation that universals are harmless only when they scope above or independently of the sensitive *wh*-phrase. When they scope below it, they induce a WI. Thus, É. Kiss observes that the example in (26) is grammatical on two of its three readings only.

(26) *How did every boy behave _?*

a. *every > wh*
'For every boy, how did he behave?'

b. **wh > every*
*'What was the common element in the boys' non-uniform behavior?'

c. independent scope (uniformity presupposition)
'Taking for granted that every boy behaved the same way, what was it like?'

Szabolcsi (1997) also shows that non-affective QPs that cannot take wide or independent scope invariably induce WIs.

The *Scope Generalization* emanating from these observations can be stated in either of the following ways:

(27) a. If Op_i has scope over Op_j and binds a variable in the scope of Op_j, Op_i must be specific. (É. Kiss 1993)

b. A quantifier Q_1 can only separate a quantifier Q_2 from its restrictive clause if Q_1 has wide scope over Q_2 (or is scopally independent of it). (de Swart 1992)

The Scope Generalization puts the whole WI phenomenon in an entirely new light (see also Frampton 1991). Just as Relativized Minimality was based on the observation that the range of WI-inducers is much wider than Subjacency can account for, the Scope Generalization expresses the observation that both the range and the nature of WI-inducers is different from what Relativized Minimality (in its original form or in its monotonicity reincarnation) can take care of.

Tying everything in the domain of WI-inducers to the property of "being scopal" does not make the desired cut, however. After all, there are expressions that some well-established theories classify as scope-bearing operators but which nevertheless do not induce WIs. Such are indefinite DPs and intensional verbs like *want*:

(28) a. *How did a boy behave _?*

b. *How do you want me to behave _?*

Confronted with such cases, one may either embrace an analysis according to which indefinites and intensional operators are not scopal, or draw some principled demarcation line

between scopal expressions, predicting some of them to be innocuous. Szabolcsi & Zwarts (1993) and Honcoop (1998), who both seek to explain the Scope Generalization stemming from É. Kiss (1993) and de Swart (1992) in formal semantic terms, follow the latter strategy.

4.2.5. Scope Theory (C3) — The Algebraic Semantics version

Szabolcsi & Zwarts 1993 (reprinted, with a handful of new notes, as Szabolcsi & Zwarts 1997) is an instantiation of the *Scope Theory* (C3) embedded in the theory of *Algebraic Semantics*. It is proposed that WI-violations are semantically incoherent, in much the same way as **six airs* is, where a numeral is applied to a mass term. In both cases, the source of incoherence is the fact that an operator wants to perform an operation which cannot be performed in the denotation domain of the rest of the expression.

It is well-known that the semantic contribution of many operators can be defined in terms of set-theoretic (Boolean) operations. *Not* is definable in terms of complement formation, *every* in terms of intersection, *some* in terms of union, and many other operators as combinations of these (and perhaps further non-Boolean ingredients). Szabolcsi & Zwarts propose to make this explicit in the interpretation of sentences and thereby use it to explain why certain expressions can, and others cannot, scope over certain operators.

When an expression E scopes over some operator O, the operations that define O need to be performed in E's denotation domain. For instance, in calculating the denotation of *Who didn't you see?* we take the complement of the set of those whom you saw, and in calculating the denotation of *Who did every girl see?(*on the *wh>every* reading*)* we intersect the sets of those seen by individual girls. This is possible precisely because *who* ranges over individuals, and individuals form sets, on which complementation and intersection (as well as union) can be performed. On the other hand, Szabolcsi & Zwarts argue that the denotation domain of WI-sensitive amounts, manners, etc. does not lend itself to complementation and/or intersection (they form join semi-lattices). Therefore, these cannot scope over negation, universal quantifiers, or other operators whose definition involves similar operations. They can scope over existentials (whose definition is in terms of union) or intensional verbs (whose semantic contribution is not Boolean in nature).

This proposal straightforwardly accounts for the WI-inducing effect of affective operators (A3) and (non-existential) quantifiers (A5). It is claimed, albeit somewhat programmatically, that the same analysis carries over to *wh*-expressions (A1), quantificational adverbs (A2) and response stance and non-stance predicates (A4). Szabolcsi & Zwarts also explain the absence of WI-effects in (28), with the aid of the observation that plain indefinites like *a boy* only rely on union (the operation that even join semi-lattices have), and *want* and *should*, while scopal, do not make a Boolean contribution. Hence the intervention of plain indefinites and intensionals is correctly predicted to be harmless.

Szabolcsi & Zwarts' algebraic Scope Theory has the additional advantage of accounting for an original observation of theirs which seems problematic for all other approaches to what expressions are immune to WIs. They observe that extraction of arguments and adjuncts of non-iterable or *"one time only" predicates* (B4), which, by virtue of the very nature of the predicate, must be interpreted as collectives, is sensitive to weak islands. The extraction from a negative island in (29b) is acceptable only on the assumption that the same house can be destroyed more than once; i.e., it is unacceptable on the verb's natural "one time only" interpretation:

(29) a. *Which soldier(s) didn't _ visit this house?*
b. ??*Which soldier(s) <didn't _ destroy this house>?*

Which N(s) in non-iterative contexts does not come under any of the umbrellas for WI-sensitive expressions canvassed in the preceding sections. It is clearly an argument, not an adjunct. It is also an event-participant. And it is in all probability D-linked. Finally, the fact that it ranges over collectives does not correspond to having a logical type that is distinct from the one it has in iterative contexts. Szabolcsi & Zwarts' algebraic Scope Theory, on the other hand, does capture the WI-sensitivity of *which soldier(s)* in (29): on one standard analysis (Link 1983), collectives form join semi-lattices, the same kind of poor algebraic structure that was attributed to manners and amounts.

4.2.6. Scope Theory (C3) — The Dynamic Semantics version

Szabolcsi & Zwarts' approach to the Scope Generalization emerging from the work of É. Kiss and de Swart can be thought of as providing a formal implementation of É. Kiss' line, in terms of what can scope over what. De Swart (1992) arrived at a different version of the Scope Generalization, from the angle of *split constructions* (B6), another type of WI-sensitive expressions (cf. Obenauer's 1984/1985 QAD cases in (14), and also *wat voor* split in Dutch). Honcoop (1998) (see also Honcoop 1996a,b) picks up on de Swart's line, presenting a version of the *Scope Theory* (C3) rooted in the framework of *Dynamic Semantics* (cf. Groenendijk & Stokhof 1990).

A fundamental novelty of Honcoop's (1998) *Dynamic excursions on weak islands* is that it lays bare an uncanny similarity between the expressions that create weak islands and those that block *cross-sentential anaphora* (B8) when they take scope over the indefinite. In (30), we see that negation creates an inaccessible domain for cross-sentential anaphora, and Honcoop demonstrates that the same holds for all the WI-inducers (A1 through A5) when their scope includes the indefinite but excludes the pronoun.

(30) a. *I saw a man$_i$ in the park. He$_i$ was tall*
b. **I didn't see a man$_i$ in the park. He$_i$ was tall*

Honcoop's proposal is to reduce the explanation of weak island effects to that of the anaphora facts.

The basic desideratum of Dynamic Semantics is to account for the ability of indefinites to antecede non-c-commanded pronouns. It maintains that indefinites are

existentially quantified noun phrases that effectively bind the pronoun even in these non-c-command contexts, although they do so in a logically novel (*dynamic*) fashion. The fact that (31a) can be interpreted as (31b) is a problem for this assumption:

(31) a. *Usually, a new coat is expensive*
b. *Most new coats are expensive*

We see that an indefinite can apparently act as a variable bound by an adverb of quantification. If indefinites are existentially quantified, such binding is possible only if the existential quantifier can be removed. So what is needed, on the assumptions of Dynamic Semantics, is an operation that removes the existential quantifier and turns *a new coat* into an expression denoting the property of being a new coat, a property that *usually* in (31a) can then take as its restriction much like *most* in (31b) does. The operation in question was invented by Dekker (1993) and is called Existential Disclosure (ED). ED maps (32a) to (32b), the set of *x*'s such that each *x* is identical to some new coat or other. In turn, (32b) is equivalent to (32c), the set of new coats:

(32) EXISTENTIAL DISCLOSURE (ED):
a. there exists a new coat $\Rightarrow_{ED}$
b. {x: there exists a new $coat_i$ and it_i is identical to x}
c. {x: x is a new coat}

In (32b), *a new coat* does not c-command *it*. Hence *a new coat* can only bind *it* in a dynamic fashion. Consequently, the application of ED is well-formed only in contexts that allow *cross-sentential anaphora*. But if the indefinite is inside an inaccessible domain created by some operator, and the pronoun is outside that domain (as depicted in (33)), binding, and ED, are not possible.

(33) *{x: ... OP [...$indefinite_i$...] and it_i is identical to x}
where OP creates an inaccessible domain for anaphora

Honcoop now makes two crucial predictions. First, he predicts that scopal operators that create inaccessible domains for anaphora will make splitting impossible, on the assumption that the operator in split constructions is related to the indefinite in the same way as an adverb of quantification (like *usually* in (31a)) is related to the indefinite it binds and that, hence, ED is required in both cases.

(34) ***Wat*** *heeft hij (*niet/*twee keer) gezegd dat hij voor boeken heeft gelezen?*
what has he not/two times said that he for books has read

This prediction is borne out, as the discussion of B6 has shown.

Secondly, Honcoop predicts that any other phenomenon whose treatment necessitates an application of ED for some other reason will, similarly, be sensitive to WI-inducers, viz. inaccessible domain creators. An interesting novel domain that bears the second prediction out is that of NPI-licensing. Linebarger (1987) observed that the licensing relation between *negative polarity items* (B7) and their triggers is blocked by a variety of interveners. Picking up on this observation, Honcoop makes the novel argument that these are precisely the same interveners that create weak islands/inaccessible domains. Conclusive evidence for the WI-sensitivity of NPIs comes from *scope islands* (A5).

(35) a. *John didn't give the beggar a red cent*
trigger: <u>not</u>; NPI: <u>a red cent</u>
b. **John didn't give <{every beggar/at most three beggars/exactly three beggars} a red cent>*

To account for NPI licensing (B7), Honcoop — rather than relating this directly to splitting, which would be impossible since not all NPI-licensors can be analyzed as unselectively binding them — points out that all NPIs are associated with a scalar implicature. This requires computing entailment relations between alternative propositions, and the formation of these alternatives in turn requires an application of ED.

Honcoop also notes that his Scope Theory provides for an explanation of the WI-sensitivity of Krifka's (1990) *event-related readings* (B5):

(36) *Four thousand ships passed through the lock last year*
a. object-related: 'there were 4,000 distinct ships that passed through the lock'
b. event-related: 'there were 4,000 lock traversals by ships'

(37) *How many ships <_ didn't pass through the lock>?*
a. object-related: ✓
b. event-related: *

Doetjes & Honcoop (1997), who discovered their WI-sensitivity, analyze event-related readings as quantification over <event, object> pairs. Both event arguments and indefinites come with their own existential quantifiers. These need to be removed in order for the pair to be formed. Removal, in Dynamic Semantics, is by Existential Disclosure — and this is why event-related readings are WI-sensitive.

5. Evaluation

In the above, we presented a bird's eye view of the data in the domains of strong and weak islands, and the theoretical approaches to them in the extant literature. The original account of both types of islands was purely syntactic, and, in the weak islands domain, was confined to what we now know — thanks to first Relativized Minimality and then the Scope Theory — to

be the tip of an immensely larger iceberg of facts. A unified explanation is called for, but no fully unified theory is currently at our disposal: as Chomsky puts it in a recent interview (see Belletti & Rizzi 2000), 'there is no really principled account of many island conditions.'

What does seem clear, though, is that a very substantial portion of this large phenomenon is genuinely semantic in nature. This is true not just because we have found that there are semantic approaches on the market to date which cover substantially more ground than the extant syntactic theories, but also because the prospects for a revision of the syntactic approach embodied by Relativized Minimality such that it can accommodate the Scope Generalization look dim. In order to capture the Scope Generalization, LF ought to disambiguate scope; but Rizzi (1990) relies on May's (1985) theory of scope, in which this is precisely not the case, and in which, moreover, QR'ed categories are not in specifier positions but in adjunction positions instead and hence should not induce Relativized Minimality effects. We could of course espouse a different theory of scope, such as for instance the feature-checking approach of Beghelli & Stowell (1997). But that theory does not yield the desired result for Relativized Minimality either, since it has good reasons not to unite universal quantifiers and modified numerals, both WI-inducers, under a single heading. The long and the short of it is that the Scope Generalization has shed light on a set of WI-*inducers* that looks far too broad to capture under a single *syntactic* umbrella. Besides, it is not even clear that all WI-*sensitive* expressions fit one single syntactic recipe: alongside non-individual *wh*-phrases, WI-sensitive elements include the amount and event-related readings of numerical QPs, functionally interpreted *which*-phrases, definite dependents of "one time only" predicates, and NPIs. How syntax can unite them all is unclear; semantics, on the other hand, is much better equipped to accomplish the desired unification.

The semantic approaches that seem most promising at this time are the algebraic and dynamic versions of the Scope Theory, due to Szabolcsi & Zwarts (1993, 1997) and Honcoop (1996a,b, 1998), respectively. There are a variety of data sets that both theories can account for more or less equally well, but there are also data that only one or the other can accommodate. As regards WI-inducers, the observation that a set of quantifiers and other operators induce WIs is at the heart of both theories. Naturally, both account for it equally well. Islands caused by a *wh*-XP can in principle be accounted for by both theories but, as Honcoop points out, the tentative analysis in Szabolcsi & Zwarts (1997) does not extend to *whether*-islands. Both proposals account in principle for the fact that response stance and non-stance, but not volunteered stance predicates induce WIs; but Szabolcsi & Zwarts only offer suggestions regarding the analysis, while Honcoop offers a detailed analysis that also accounts for the fact that these expressions do not affect extraction and cross-sentential anaphora in the same way.

In the domain of WI-sensitive expressions, Honcoop himself shows that the two theories score equally well on event-related readings. But the algebraic approach can explain the WI-sensitivity of collective arguments, and *how* (and probably, of *why* and other comparable expressions), while there seems to be no reason to assimilate them to split constructions under the ED approach. Conversely, the fact that split constructions are systematically WI-sensitive even when they receive an individual interpretation can be accounted for by the ED theory but not by the algebraic approach of Szabolcsi & Zwarts; the same is true for the fact that NPI-licensing is blocked by WI-inducers

A further intriguing connection has been pointed out very recently in Pesetsky (2000). Pesetsky argues that *wh-in-situ* can be linked to a [+wh] complementizer in two distinct ways: by covert movement and by feature movement. He observes that the cases that he classifies as feature movement are vulnerable to intervention effects of the sort described in Beck (1996). Pesetsky construes feature movement as an instance of an operator getting separated from its restriction, and refers to Honcoop (1998) as a theory that predicts that such a constellation will be sensitive to intervention. Since on Honcoop's theory, split constructions are sensitive to weak islands irrespective of whether they receive non-individual interpretations, if Pesetsky is correct, his book adds a whole new set of data to support this feature of Honcoop's theory.

Why is it that precisely those expressions whose algebraic semantic definition involves intersection and/or complement-formation create inaccessible domains for cross-sentential anaphora? Honcoop addresses this question and proposes, albeit in a preliminary fashion, that the algebraic properties can be used to explain the relevant Dynamic Semantic properties. If this line of reasoning is correct, the two theories may be viewed, to some extent, as two sides of the same coin.

There are, however, intriguing syntactic residues. On the one hand, even though in a recent interview (see Belletti & Rizzi 2000) Chomsky has said that 'the difference between weak and strong islands looks stable,' in retrospect it does not seem entirely clear whether the presupposed demarcation line between weak and strong islands is as solid as one might want it to be. The reason is that the DP/PP distinction is not entirely clear-cut throughout the domain. Many speakers of English do not accept PP-extraction even out of weak islands. Furthermore, the DPs that are capable of binding a variable in weak islands and of being linked to a resumptive pronoun in strong ones are rather strikingly similar — an observation that emerges from, but is not addressed in, Cinque (1990). (Rizzi 2000 makes the specific assumption that in successful PP-extraction from weak islands, P is deleted from the copy in the operator position and concomitantly "ousted" from the copy in the trace position, so that such apparent PP-dependencies will reduce to DP-dependencies at LF as well. But it remains unclear why, on this approach, PPs should typically fail to extract from strong islands; Rizzi's paper does not address strong islands.)

On the other hand, at least some of the extraposition islands and some of the anti-pronominal context data of Postal (1998) do not fall under either of the Scope Theories. There is no inherent conflict between the existence of syntactic residues and the Scope Theories. This is because the Scope Theories both reduce the WI effect to independent semantic facts. Provided that the proposals are internally logically correct, the semantic facts they point out will constrain the range of expressible meanings, irrespective of whether their consequences overlap with those of other syntactic or semantic considerations. Nevertheless, the issue of exactly what island phenomena form a single natural class remains an intriguing one and calls for further research.

Acknowledgement

The present text is based on Szabolcsi (1999), to which the interested reader is referred for details which space restrictions do not allow us to discuss at length here. We thank Martin Everaert and Henk van Riemsdijk for their kind permission to reproduce parts of Szabolcsi (1999) herein.

An Islands Bibliography

Authier, J.-M. (1991) V-governed *pro,* Case theory, and the Projection Principle. *Linguistic Inquiry* **22**, 721–740.

Aoun, Joseph (1986) *Generalized Binding.* Dordrecht: Foris.

Baltin, Mark (1992) On the characterization and effects of D-linking: Comments on Cinque. *Current issues in comparative grammar*, edited by R. Freidin, 249-256. Dordrecht: Kluwer.

Bayer, Jospeh (1984) COMP in Bavarian. *Linguistic Review* **3**, 209–274.

Bayer, Jospeh (1996) *Directionality and Logical Form: On the scope of focussing particles and wh-in-situ.* Dordrecht: Kluwer.

Beck, Sigrid (1996) Quantified structures as barriers for LF movement. *Natural Language Semantics* 4, 1-56.

Beermann, Dorothee (1997) *Syntactic discontinuity and predicate formation*. Doctoral dissertation, Tilburg University.

Beghelli, Filippo & Tim Stowell (1997) Distributivity and negation: The syntax of *each* and *every. Ways of scope taking*, edited by A. Szabolcsi, 71–107. Dordrecht: Kluwer.

Belletti, Adriana & Luigi Rizzi (2000) An interview on minimalism, with Noam Chomsky. Conducted at the University of Siena, November 8-9, 1999; revised March 16, 2000; available at: http://www.media.unisi.it/ciscl/pubblicazioni.htm

Bouma, Gosse (1987) A unification-based analysis of unbounded dependencies in Categorial grammar. *Proceedings of the Sixth Amsterdam Colloquium*, edited by J. Groenendijk, M. Stokhof & F. Veltman, 1–21.

Cattell, Ray (1978) On the source of interrogative adverbs. *Language* **54**, 61–77.

Chierchia, Gennaro (1995) *Dynamics of meaning.* Chicago: The University of Chicago Press.

Chomsky, Noam (1973) Conditions on transformations. *Festschrift for Morris Halle*, edited by S. Anderson & P. Kiparsky, 232–286. New York: Holt, Reinhart & Winston.

Chomsky, Noam (1977) On wh-movement. *Formal syntax*, edited by P. Culicover, T. Wasow & A. Akmajian**,** 71–132. New York: Academic Press.

Chomsky, Noam (1982) *Some concepts and consequences of the Theory of Government and Binding.* Cambridge, Mass.: MIT Press.

Chomsky, Noam (1986) *Barriers*. Cambridge, Mass.: MIT Press.

Chomsky, Noam (1995) *The Minimalist Program.* Cambridge, Mass.: MIT Press.

Chomsky, Noam (1999) Derivation by phase. *MIT Occasional Papers in Linguistics* 18. Published in *Ken Hale: A life in linguistics*, edited by M. Kenstowicz. Cambridge, Mass.: MIT Press (2001).

Cinque, Guglielmo (1990) *Types of A'-Dependencies.* Cambridge, Mass.: MIT Press.

Comorovski, Ileana (1989) *Discourse and the syntax of multiple constituent questions*. Doctoral dissertation, Cornell University.

Corver, Norbert (1990) *The syntax of left branch extractions*. Doctoral dissertation, Tilburg University.

Cresti, Diana (1995) Extraction and reconstruction. *Natural Language Semantics* **3**, 79–122.

Dayal, Veneeta (1994) Scope marking as indirect wh-dependency. *Natural Language Semantics* **2**, 137–170.

Dekker, Paul (1993) Existential disclosure. *Linguistics and Philosophy* **16**, 561–587.

Dobrovie-Sorin, Carmen (1994) What does QR raise? *The syntax of Romanian: Comparative studies in Romance.* Berlin: de Gruyter.

Doetjes, Jenny (1997) *Quantifiers and selection: On the distribution of quantifying expressions in French, Dutch and English*. The Hague: Holland Academic Graphics.

Doetjes, Jenny & Martin Honcoop (1997) The semantics of event-related readings: A case for pair-quantification. *Ways of scope taking*, edited by A. Szabolcsi, 263–310. Dordrecht: Kluwer.

Enç, Mürvet (1991) The semantics of specificity. *Linguistic Inquiry* **22**, 1–25.

Engdahl, Elisabet (1983) Parasitic gaps. *Linguistics and Philosophy* **6**, 5–34.

Engdahl, Elisabet & Eva Ejerhed (eds.) (1982) *Readings on unbounded dependencies in Scandinavian languages.* Stockholm: Almqvist & Wiksell.

Fiengo, Robert & James Higginbotham (1981) Opacity in NP. *Linguistic Analysis* **7**, 395–421.

Frampton, John (1990) Parasitic gaps and the theory of wh-chains. *Linguistics and Philosophy* **5**, 355–398.

Frampton, John (1991) Review of Relativized Minimality. *The Linguistic Review* **8**, 1–46.

Groenendijk, Jeroen & Martin Stokhof (1990) Dynamic Montague Grammar. *Papers from the Second Symposium on Logic and Language*, edited by L. Kálmán & L. Pólos. Budapest: Akadémiai Kaidó.

Hegarty, Michael (1992) Adjunct extraction without traces. *The Proceedings of the Tenth West Coast Conference on Formal Linguistics*, edited by D. Bates, 209–222. Stanford, CSLI.

Honcoop, Martin (1996a) Towards a dynamic semantics account of weak islands.*The Proceedings of Semantics and Linguistic Theory VI*, edited by T. Galloway and J. Spence, 93–110. Stanford, CSLI.

Honcoop, Martin (1996b) A dynamic binding approach to intervention effects on negative polarity licensing. *Linguistics in the Netherlands 1996*, edited by C.Cremers and M. den Dikken, 85–96. Amsterdam: John Benjamins.

Honcoop, Martin (1997) Connectivity at the interface: Scope, binding and weak islands. *The Proceedings of the Interface Strategies Colloquium.* Dordrecht: Kluwer.

Honcoop, Martin (1998) *Dynamic excursions on weak islands*. Doctoral dissertation, Leiden University. The Hague: Holland Academic Graphics.

Huang, C.T.James (1982) *Logical relations in Chinese and the theory of grammar*. Doctoral dissertation, Massachusetts Institute of Technology.

Jacobson, Pauline (1996) *Coordination, binding, and extraction*. Paper presented at the Symposium on Coordination, European Summer School in Language, Logic and Information, Prague.

Kayne, Richard (1983) Connectedness. *Linguistic Inquiry* **24**, 223–249.

Kiss, Katalin.É. (1993) Wh-movement and specificity. *Natural Language and Linguistic Theory* **11**, 85–120.

Klima, Edward (1964) Negation in English. *The structure of language*, edited by J. Katz & J. Fodor. Englewood Cliffs, N.J.: Prentice-Hall.

Koster, Jan (1978a) *Locality principles in syntax*. Dordrecht: Foris.

Koster, Jan (1978b) Why subject sentences don't exist. *Recent transformational studies in European languages*, edited by S.J. Keyser, 53–64. Cambridge, Mass.: MIT Press.

Krifka, Manfred (1990) Four thousand ships passed through the lock. *Linguistics and Philosophy* **13**, 487–520.

Kroch, Anthony (1989) *Amount quantification, referentiality, and long wh-movement*. Manuscript, University of Pennsylvania.

Kuno, Susumo. & Ken-ichi Takami (1993) Negation and extraction. *Chicago Linguistic Society* **28(1)**, 298–317. Chicago: University of Chicago.

Kuno, Susumo & Ken-ichi Takami (1997) Remarks on negative islands. *Linguistic Inquiry* **28**, 553–576.

Ladusaw, William (1980) *Polarity sensitivity as inherent scope relations.* New York: Garland.

Lasnik, Howard & Mamoru Saito (1984) On the nature of proper government. *Linguistic Inquiry* **15**, 235–289.

Lasnik, Howard & Mamoru Saito (1992) *Move α: Conditions on its application and output.* Cambridge, Mass.: MIT Press.

Linebarger, Marcia (1987) Negative polarity and grammatical representation. *Linguistics and Philosophy* **10**, 325–387.

Link, Godehard (1983) The logical analysis of plurals and mass terms: A Lattice-Theoretical approach**.** *Meaning, use, and interpretation of language*, edited by R. Bauerle & C. Schwarze, 302–323. Berlin: de Gruyter.

Longobardi, Giuseppe (1987) Extraction from NP and the proper notion of head government. *The syntax of noun phrases*, edited by A. Giorgi & G. Longobardi, 57–112. Cambridge: Cambridge University Press.

Manzini, M. Rita (1992) *Locality: A theory and some of its empirical consequences*. Cambridge, Mass.: MIT Press.

Manzini, M. Rita (1998) A minimalist theory of weak islands. *Syntax and Semantics 29: The limits of syntax*, edited by P. Culicover & L. McNally**,** 185–209. San Diego, Calif.: Academic Press.

May, Robert (1985) *Logical Form.* Cambridge, Mass.: MIT Press.

McCloskey, James (2000)*Resumption, successive cyclicity, and the locality of operations*. Ms., University of California, Santa Cruz.

Meinunger, André (1996) *Discourse dependent (DP-) displacement*. *Groninger Arbeiten zur Germanistischen Linguistik* 39.

Melvold, Janice (1991) Factivity and definiteness. *More papers on wh-movement* [MITWPL 15], edited by L. Cheng & H. Demirdache, 97–117. Cambridge, Mass.: MIT Press.

Nanni, Debbie & Justine Stillings (1978) Three remarks on pied piping. *Linguistic Inquiry* **9**, 310–318.

Obenauer, Hans-Georg (1984/1985) On the identification of empty categories. *The Linguistic Review* **4**, 153–202.

Perlmutter, David (1972) Evidence for shadow pronouns in French relativization. *The Chicago Which Hunt*, edited by P. Peranteau, J. Levi & G. Phares. Chicago, Ill.: The Chicago Linguistic Society.

Pesetsky, David (1982) *Paths and categories*. Doctoral dissertation, Massachusetts Institute of Technology.

Pesetsky, David (1987) Wh-in-Situ: Movement and unselective binding. *The representation of (in)definiteness,* edited by E. Reuland & A. ter Meulen, 98–129. Cambridge, Mass.: MIT Press.

Pesetsky, David (2000) *Phrasal movement and its kin*. Cambridge: M.I.T. Press.

Pollard, Carl & Ivan Sag (1994) *Head-driven phrase structure grammar.* Chicago: University of Chicago Press.

Postal, Paul M. (1993) Parasitic gaps and across-the-board phenomenon. *Linguistic Inquiry* **24**, 735–754.

Postal, Paul M. (1994) Parasitic and pseudo-parasitic gaps. *Linguistic Inquiry* **25**, 63–117.

Postal, Paul M. (1997) *Islands*. Manuscript, New York University.

Postal, Paul M. (1998) *Three investigations of extraction.* Cambridge, Mass.: MIT Press.

Progovac, Ljiljana (1988) *A binding approach to polarity sensitivity*. Doctoral dissertation, University of Southern California.

Progovac, Ljiljana (1998) Structure for coordination (part I). *Glot International* **3.7**, 3–10.

Richards, Norvin (1997) *What moves where when in which language?* Diss., MIT.

Rizzi, Luigi (1978) Violations of the wh-island constraint in Italian and the Subjacency Condition. *Montreal Working Papers in Linguistics* **11**, 155–190. Recherches Linguistiques a Montreal. Reprinted in Rizzi (1982), 49–77.

Rizzi, Luigi (1982) *Issues in Italian syntax*. Dordrecht: Foris.

Rizzi, Luigi (1990) *Relativized Minimality.* Cambridge, Mass.: MIT Press.

Rizzi, Luigi (1992) Argument/adjunct asymmetries. *Proceedings of NELS* **22**, 365–381.

Rizzi, Luigi (2000) *Reconstruction, weak island sensitivity, and agreement*. Ms., Università di Siena; available at: http://www.media.unisi.it/ciscl/pubblicazioni.htm

Roberts, Ian (1987) *Predicative AP's*. Ms., Université de Genève.

Roberts, Ian (1997) *Comparative syntax.* London: Edward Arnold.

Ross, John R. **(**1967) *Constraints on variables in syntax*. Doctoral dissertation, Massachusetts Institute of Technology. Published as *Infinite syntax* (1986). Norwood, N.J.: Ablex.

Ross, John R. (1984) Inner islands. *Proceedings of BLS 10.* Berkeley Linguistic Society, University of California, Berkeley.

Rothstein, Susan (1988) Subjacency, the ECP and the formation of chains. *Glow Newsletter* **20**, 60–61. Dordrecht: Foris.

Rullman, Hotze (1993) *Scope ambiguities in 'how many'-questions*. Presented at LSA 1993, Los Angeles.

Rullman, Hotze (1994) *Negative islands aren't islands*. Presented at the Sixty Eighth Annual Meeting of the Linguistic Society of America.

Rullman, Hotze (1995) *Maximality in the semantics of wh-constructions*. Doctoral dissertation, University of Massachusetts.

Scha, Remko (1981) Distributive, collective, and cumulative quantification. *Formal methods in the study of language,* edited by J. Groenendijk et al., 483–512. Amsterdam: Mathematisch Centrum.

Starke, Michal (2001) *Move dissolves into Merge: A theory of locality*. Diss., Université de Genève; available at: http://theoling.auf.net/papers/starke_michal

Swart, Henriette de (1992) Intervention effects, monotonicity and scope. *SALT II: Proceedings of the Second Conference on Semantics and Linguistic Theory,* edited by C. Baker & D. Dowty, 387–406. Columbus: The Ohio State University.

Szabolcsi, Anna (1997) Quantifiers in pair-list readings. *Ways of scope taking*, edited by A. Szabolcsi, 311–347. Dordrecht: Kluwer.

Szabolcsi, Anna & Frans Zwarts (1990) Semantic properties of composed functions and the distribution of wh-phrases. *Proceedings of the Seventh Amsterdam Colloquium,* 529–555. Amsterdam: Institute for Language, Logic and Information.

Szabolcsi, Anna & Frans Zwarts (1993) Weak islands and an algebraic semantics of scope taking. *Natural Language Semantics* **1**, 235–284.

Szabolcsi, Anna & Frans Zwarts (1997) Weak islands and an algebraic semantics of scope taking. *Ways of Scope Taking*, edited by A. Szabolcsi, 217–262. Dordrecht: Kluwer.

Szabolcsi, Anna (1999) Strong and weak islands. To appear in *SynCom*, edited by M. Everaert & H. van Riemsdijk.

Williams, Edwin (1974) *Rule ordering in syntax*. Doctoral dissertation, Massachusetts Institute of Technology.