What Natural Classes of (Weak) Islands?

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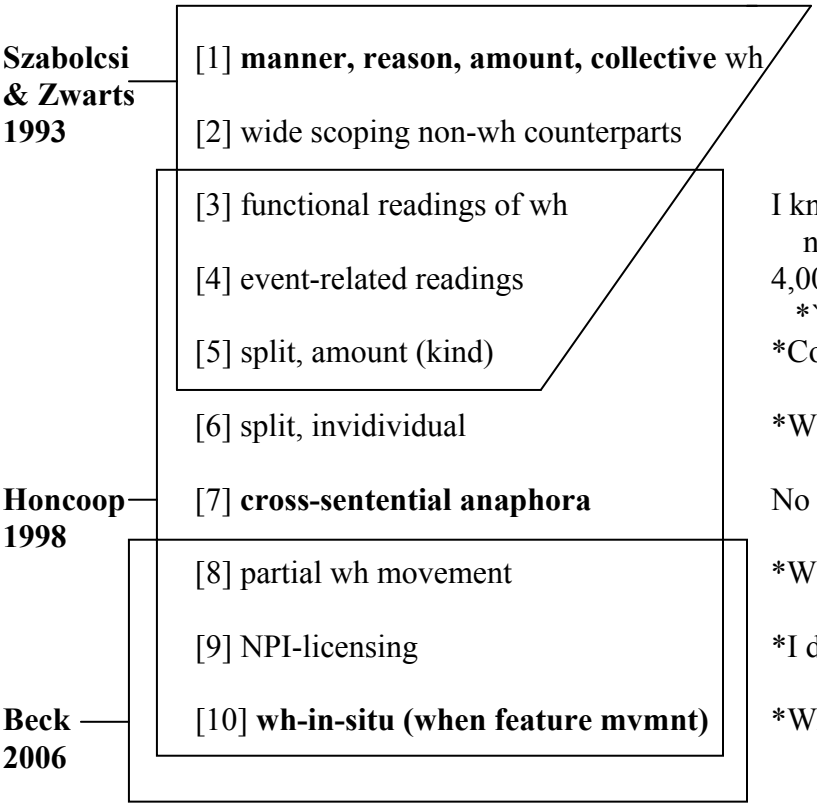
- **Weak island (intervention) sensitive constructions and the coverage of some theories:**



*How/why/how much did no dog suffer?
*Which soldier(s) didn't kill this man?
*He didn't appreciate it somewhat.

I know which book you wonder whether no/any student read, i.e. * his own mother's book.
4,000 ships passed through no/at most two locks.
*`there were 4,000 events of a ship traversing *n* locks'
*Combien as-tu beaucoup consulté de livres?

*Wat vroeg jij je af of Jan aan boeken heeft gelezen?

No one/Everyone has a coat. *It is warm.

*Was glaubst du nicht, mit wem ...?

*I don't think that everyone read anything.

*Which dog did no one introduce which cat to?

- **Interveners that induce weak islands:**

Wh-phrases, *only, no, every, each, less/more than five, more students than teachers*, etc. that scope between two terms of the Weak Island sensitive construction.

Some operators only take scope in situ; their mere intervention at spell-out is bad enough (wh, decreasing op, modified numeral). Some others may scope out, or scope independently, so interpretation must be attended to:

Which book did every student read?
`Tell me about every student which book he read'
`After all that fuss, do you know which book every student read?'
`Which book was in the intersection of the students' reading lists?'

How much pain did every patient endure?
`Tell me ab't every patient how much pain he endured'
`After all that fuss, do you know how much pain every patient endured?'
*** `How much pain did the patient who endured the least pain endure?'**

- **Similarities between expressions that escape from weak and strong islands:** individual denoting DPs

Which boy(s) / *About which boy(s) / *How much didn't you ask?
Which boy(s) / *About which boy(s) / *How much did you file the report without asking?

1 Szabolcsi—Zwarts (Weak islands and an algebraic semantics of scope taking, NLS 1, 1993)

The contribution of operators is cashed out as Boolean operations (complement, intersection, union):

what	Mary read _	{x: M read x}
	Mary did **not** read _	−{x: M read x}
	every girl read _	{x: M read x}∩{x: K read x}∩{x: S read x}
	two or more girls read _	{{x: M read x}∩{x: K read x}}∪{ {x: K read x}∩{x: S read x}} ∪ ...

Intervention effects arise when the denotation of a stretch of the sentence (scope, extraction domain) cannot be computed; specifically, when that scope does not denote a set and thus does not lend itself to all Boolean operations. This is to a large extent determined by the nature of the gap in that scope. [caveat below]

Interveners are those operators that want to perform Boolean operations that cannot be performed on (the relevant part of) the denotation of this scope.

how	Mary behaved _	ιx[M behaved x-ly]
	*Mary did not behave _	# −ιx[M behaved x-ly]
	*every girl behaved _	# ιx[M behaved x-ly] ∩ ιx[K bhvd x-ly] ∩ ιx[S bhvd x-ly]
	*two or more girls behaved _	# [ιx[M behaved x-ly] ∩ ιx[K behaved x-ly]] ∪ …

Caveat: multiple-event readings may have set denotations and be therefore immune:

*Yesterday at 5:00pm she solved this problem only elegantly. *(one whole manner; not a set)*
In all her life, she solved problems only elegantly. *(a set of whole manners)*
*How didn't you behave last night? *(one whole manner; not a set)*
How did you never behave? *(a set of whole manners)*

2 Honcoop (Dynamic Excursions on Weak Islands, PhD, Leiden U., 1998)

Weak island inducers are exactly those that create inaccessibility in non-c-command anaphora:

I have a new coat. It is grey.	dynamic binding (Groenendijk & Stokhof)
I don't have a new coat. *It is grey.	
Every boy has a new coat. *It is grey.	
Two or more boys have a new coat. *It is grey.	
$ (…indefinite…) …*pronoun …	dynamic binding blocked by operator $

Dekker 1993 (L&P): Existential Disclosure, ED:

(a) ∃x[M arrived from(x)] => ED, involving dynamic binding
(b) {y: ∃x[M arrived from(x)] & y = x} =
(c) {y: M arrived from(y)}

Intervention sensitive constructions are those whose interpretation necessitates the removal of an existential quantifier and thus the use of Existential Disclosure.

Interveners are those operators $ that create inaccessible domains for non-c-command anaphora and thus block Existential Disclosure.

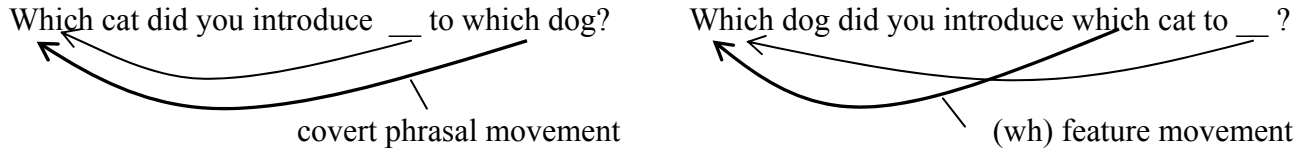
*combien …($… de camions)…	(split, amount; ∃ *de camions*)
*wat … ($ … aan boeken)…	(split, individuals; ∃ *boeken*)
*kyaa … ($… kahaaN …)…	(partial wh-movement, Dayal; ∃ *kahaaN*)
*no one …($ … anything) …	(compute scalar alt's; ∃ *anything*: no split but ED needed)

2.1 Extensions of Honcoop:

- Szabolcsi 2004 (NLLT 42): Resumptive quantifier analysis of NPI licensing: operator/restrictor split

  *No one gave every beggar anything: *no<x,y>[person x ... $ … thing y]

- Pesetsky 2000 (MITPress): Feature movement is operator/restrictor split



Feature movement, though not overt or covert phrasal movement, superficially appears to violate superiority and is blocked by intervention:

Which cat did {only you / every boy} introduce to which dog? *Which dog did {only you / every boy} introduce which cat to?

If Pesetsky is correct, this provides a new set of weak island sensitive relations that Honcoop but not Szabolcsi--Zwarts account for.

- Butler—Mathieu 2004 (Palgrave): Adjuncts reconstruct (Williams), hence operator/restrictor split

$[_{CP}$ how…] => $[_{CP}$ Q … $[_{TP}$...how...]]

Problems: *in which of these ways* and D-linked-*how* are adjuncts but immune to intervention;
direct object *what/how much* and collective arguments are not adjuncts but intervention sensitive.

3 Szabolcsi—Zwarts vs. Honcoop:
Purely denotational semantics vs. a particular logico-syntax of anaphora & split in syntax proper.
Predict different intervention sensitive relations.
Predict essentially the same interveners.

4 Beck (Intervention effects follow from focus interpretation, NLS 14, 2006)

Background: Rooth's theory of focus: Mary only $[_{VP}$ introduced Bill_F to Sue].
Focus semantic value of VP (alternatives induced by focus on *Bill*):
C = {^introduced Bill to Sue, ^introduced Mary to Sue, ...}

only(C)(~C(VP))(mary) : $\forall P[(P \in C \ \& \ P(\text{mary})) \rightarrow P=VP']$
`for every property P, where P comes from the set C and holds of Mary, P is VP'
where ~C(VP) is the ordinary semantic value of VP and C is a contextually relevant subset of the focus semantic value of VP, i.e., $C \subseteq \{P: Ey[P= ^\{x: \text{introduce}(x,y,s)\}]\}$

Rooth, relevant to Beck: The ~ operator, which fixes the value of C that restricts *only*, resets the focus semantic value of its own mother node to the ordinary semantic value of VP, so that the alternatives induced by this focus cannot be used by another operator beyond *only*.

Specific assumptions added by Beck:

"Distinguished variables" induce alternatives.
Variables that replace focussed expressions, wh-hrases, and scalar NPIs are distinguished variables.
Traces are not.
Wh-phrase wants to be directly bound by Q operator, NPI by affective operator.
The ~ operator unselectively binds all distinguished variables in its scope.

Ergo, if ~ intervenes between Q/Aff and wh-phrase/NPI, it unselectively binds the distinguished variable of the wh-phrase/NPI. The wh-phrase/NPI will never get bound by Q/Aff.

Intervention sensitive expressions are those that induce alternatives (i.e. distinguished variables).
Interveners are those operators that have the unselective binder ~ appended to their scope.

What operators (may) have ~ appended to their scope?
All and only those operators that may have focus affected readings, even if in the given sentence there is no focus affected reading. In the latter case the C in ~C and the C in the restriction are just not coindexed. But Beck allows for flexibility in whether ~ is present then (!).

Everyone saw BILL. possible focus affected reading: every(human ∩ saw someone)(saw Bill)

Therefore: *Which dog did **every** man introduce which cat to?
every(man ∩ C_2)(~ C_1 (introduced *which cat* *x* to y))

*I don't think that **every** boy lost any weight.

*Wen hat **nur** der Dick wo gesehen?
who has only the Dick where seen

*minsu-**man** nuku-lul po-ass-ni *versus* √ nuku-lul minsu-**man** po-ass-ni
Minsu-only who-acc see-past-Q who-acc Minsu-only see-past-Q

5 Comments on Beck

Picking what variables are distinguished, the unselectivity of the ~ operator, and postulating ~ even in the absence of focus affected readings seem stipulative (and not "semantic" / "minimalist").

Do all scope-bearing operators have potentially focus-affected readings? Intersective quantificational determiners are one relevant case in point.

Many weak island sensitive constructions remain unaccounted for; does the proposal single out a natural class?