Brisson (2003)
"Plurals, *All*, and the Nonuniformity of Collective Predication"

1. Introduction: Some Reflections on the Meaning of "All"

(1) **Overarching Question** What the heck does "all" mean?

(2) **Naïve Answer** Doesn't it just mean the same thing as "every"?

a. Every boy smokes ~
b. All boys smoke.

(3) **An Initial Problem for the Naïve Answer**
In episodic contexts, "all" cannot combine with a bare NP, but only with a definite DP.

a. Every boy was dancing.
b. All *(the) boys were dancing.

Thus, for simple type-theoretic reasons, "all" cannot have *exactly* the same meaning as "every".

(4) **A Deeper Problem for the Naïve Answer**

As has long been observed, "every" forces a distributive reading of the sentence, while "all" (sometimes) allows for a collective reading.

a. Every boy built a raft.
   (i) different raft for each boy
   (ii) * built single raft as a team

b. All the boys built a raft.
   (i) different raft for each boy
   (ii) built single raft as a team

Consequently – unlike a DP headed by "every" – a DP modified by "all" can be argument to (some) essentially collective (*a.k.a* 'plurality seeking') predicates.

c. * Every boy gathered outside.

d. All the boys gathered outside.

(5) **Observation**
"All" is never syntactically obligatory. Dropping "all" never leads to ill-formedness.

a. *(Every) boy smokes.
b. (All) the boys smoke.
c. (All) the boys built a raft.
d. (All) the boys danced.
e. (All) the boys gathered outside.

(6) **Question This Raises**

- What the heck does "all" contribute to the sentences in (5b-e)?
- What is the semantic difference – if any – between (5b-e) with "all" and without?

(7) **A Classic Observation (Fiengo & Lasnik 1973; Langedoen 1978; Williams 1991)**

- The sentences in (5) without "all" are more *vague* than the ones with "all".

- **The sentences lacking "all" tolerate a certain number of 'exceptions', whereas the sentences containing "all" tolerate *no* exceptions.**

The Paradigm of (Alleged) Judgmeents

a.	People from Massachusetts are liberal.	(true, even though Scott Brown isn't)
b.	All people from Massachusetts are liberal.	(*false*, because of Scott Brown)
c.	The 201 students did well on the exam.	(true, even if a few didn't)
d.	All the 201 students did well on the xam.	(*false* if a few didn't)
e.	My neighbors are talking outside.	(true, even if a few aren't there)
f.	All my neighbors are talking outside.	(*false* if a few aren't there)

(8) **A Classic Conclusion (Lasersohn 1999)**

- Unlike what we're taught in logic 101, "all" in English is not quantificational.

- In fact, it doesn't even contribute any truth-conditional content at all.

- Rather, what it does is 'remove imprecision' from cases of plural predication, so that:

    - 'minor exceptions' are no longer tolerated
    - and the predication must be over the *totality* of the plural DP's extension

- This general line of attack is rather thoroughly worked out by Lasersohn (1999)

As appealing as this is, though, there is one significant challenge….

(9) **Challenge to the 'Classic Conclusion'**

The idea in (8) would suggest that sentences containing "all" are always truth-conditionally equivalent to sentences without "all" (Lasersohn 1999).

While this does seem to be the case for the sentences in (5)… *it is not always so!*

The following generalizations are sometimes referred to as 'Taub's Generalization' (Taub 1989).

(10) **Interactions Between "All" and Aktionsart, Part 1 (Taub 1989)**

When "all DP" is argument to an achievement, a *distributive reading* is obligatory.

a. The students won.
   (i) *The students won as a group / team.*
   (ii) *Each of the students individually won.*

b. All the students won.
   (i) *Each of the students individually won.*
   (ii) * *The students won as a group / team.*

(11) **Interactions Between "All" and Aktionsart, Part 2 (Taub 1989)**

When "all DP" is argument to a stative predicate, a *distributive reading* is obligatory.

a. The vegetables are heavy.
   (i) *The vegetables together are heavy.*
   (ii) *Each of the vegetables is individually heavy.*

b. All the vegetables are heavy.
   (i) *Each of the vegetables is individually heavy.*
   (ii) * *The vegetables together are heavy.*

(12) **Interaction Between "All" and Aktionsart, Part 3 (Taub 1989)**

When "all DP" is argument to an accomplishment or an activity, either a collective or a distributive reading is possible.

a. <u>Activity</u> All the students carried the piano around.
   (i) *The students carried the piano together as a team.*
   (ii) *Each of the students carried the piano individually.*

b. <u>Accomplishment</u> All the students built a raft.
   (i) *The students built a single raft together.*
   (ii) *Each student built a different raft.*

(13) **Key Consequence of (10) and (11)**

If a stative or achievement predicate is *inherently* collective, then it cannot take as argument a DP modified by "all".

a. (*All) the students elected Mike president.
b. (*All) the students are a big group.

(14) **Conclusion** There is much more to the meaning of "all" than just the notion that it 'precludes exceptions'.
(See Brisson's (2003) criticisms of Lasersohn (1999))

(15) **Brisson's (2003) Proposal**

The obligatory distributive readings in (10) and (11) reveal the true nature of "all".

a. "All" is (essentially) a modifier of the distributive operator *DIST*.
Thus, if "all" is in the sentence, so must be *DIST*.

b. The semantic contribution of "all" is that it removes a kind of 'imprecision' from the semantics of the distributive operator.

The apparent possibility of collective readings in (12) is due to the special nature of activity and accomplishment verbs.

c. Such verbs project an additional level of verbal structure, a separate event predicate which Brisson labels 'DO'.

"The boys built the raft" = [The boys [DO [built the raft]]]

d. The distributive operator associated with "all" can merge low, as sister to this DO predicate. When it does so, the resulting T-conditions are still basically collective.

"All the boys built the raft" = [The boys [[*DIST* DO] [built the raft]…]

e. Achievements and states do not have a 'DO' projection. Thus, if "all" appears in the sentence, its associated *DIST* must take the entire VP as argument. This results in a classic distributive reading.

"All the boys are heavy" = [The boys [*DIST* [are heavy]]]

(16) **The Two Main Ingredients of Brisson's (2003) Analysis**

a. A theory of "all" as a modifier of the distributive operator *DIST*, whereby it 'removes exceptions'.

b. A theory of the syntax and semantics of the various Aktionsart categories.

Brisson (2003) also discusses a variety of other interesting issues, but we'll focus on the main ingredients here…

2. Imprecision and Covers

Brisson's theory makes crucial use of the concept of 'covers' in the semantics of plural predication…

Thus, we'll take a few minutes to review the key ideas behind covers…

2.1 Some Background on Covers

(17) **The Classic Theory of Distributive Readings (Link 1983)**

The distributive reading of a sentence like (17a) – whereby it is true in a scenario like (17b) – is derived from the LF in (17c), which contains a phonologically null distributive operator *DIST* with the semantics in (17d). The resulting T-conditions are in (17e).

a. Sentence: The boys built a raft.

b. Distributive Scenario: Dave built raft1. Tom built raft2. John built raft3.

c. LF Syntax: [The boys [*DIST* [built a raft]]]

d. Semantics of *DIST*: $[\lambda P : \lambda x : \forall y . y \leq x \ \& \ atom(y) \rightarrow P(y)]$

e. Truth-Conditions of the Distributive LF (17c):

$\forall y . y \leq Dave+Tom+John \ \& \ atom(y) \rightarrow \exists z . raft(z) \ \& \ y \text{ built } z$

(18) **Classic Problem for the Classic Theory**

The sentence in (18a) allows a distributive reading where it is true in scenario (18b). However, the T-conditions we derive for the distributive LF (18c) are those in (18d), which are actually incoherent (because individuals can't 'gather').

a. Sentence: The boys and the girls gathered in a field.

b. Distributive Scenario: The boys gathered in field1. The girls in field2.

c. Distributive LF: [The boys and the girls [*DIST* [gathered in a field]]]

d. Predicted T-Conditions:

$\forall y . y \leq the.boys+the.girls \ \& \ atom(y) \rightarrow \exists z . field(z) \ \& \ y \text{ gathered in } z$

(19) **The Acute Problem**
Contrary to our semantics in (18d), *DIST* doesn't always quantify over *atoms*.
So… what *does* it quantify over?

(20) **Enter the Cover (Schwarzschild 1996)**

a. The General Intuition:
Within a given context, there are various salient ways of grouping the domain of discourse *D*.

- In one context, grouping kids according to gender might be salient.
- In another, grouping kids according to grade level might be salient.

The distributive operator *DIST* is sensitive to these contextually given 'methods' for grouping *D*

b. The Formalization, Part 1:
A *cover* of *D* is a set of pluralities COV with the following key property:
For every atomic x in *D*, there is some plurality y in COV such that $x \leq y$

Illustration:
Suppose that *D* = {Dave, Tom, Mary, Sue, Dave+Tom, Dave+Mary, Dave+Sue, Tom+Mary, Tom+Sue, … , Dave+Tom+Mary+Sue}

The following are all covers of *D*:
{ Dave, Tom, Mary, Sue }
{ Dave +Tom, Mary+Sue }
{ Dave+Tom, Mary, Sue }
{ Dave+Tom+Mary, Sue }
{ Dave+Tom+Mary+Sue }

c The Formalization, Part 2
The context makes available (at least) one salient cover of D. We can model this, in the usual way, with a superscript *cov*: $[[\, . \,]]^{cov}$

d. The Formalization, Part 3
The meaning of the distributive operator *DIST* is sensitive to the *cov* parameter.

$[[\textit{DIST}]]^{cov} = [\lambda P : \lambda x : \forall y \, . \, y \leq x \, \& \, y \in \textit{cov} \rightarrow P(y)]$

(21) **Illustration**
Let *cov* = { Dave+Tom, Mary+Sue }. We now predict that (21a) will be true in (21b).

a. Sentence: The boys and the girls gathered in a field.
b. Distributive Scenario: The boys gathered in field1. The girls in field2.
c. Distributive LF: [The boys and the girls [*DIST* [gathered in a field]]]

d. Predicted T-Conditions:
$\forall y \, . \, y \leq$ the.boys+the.girls & $y \in$ {Dave+Tom, Mary+Sue} $\rightarrow$
$\exists z \, . \,$ field(z) & y gathered in z

2.2 Covers, Imprecision and "All"

(22) **Brisson's Key Insight**

With a judicious selection of covers, we can capture the ability for plural predication to (sometimes) be 'imprecise'; *i.e.*, we predict that (22a) can be true in a scenario like (22b).

a. The boys built a raft.

b. Bill, Tom and Dave together built a raft.
John just stood to the side and watched.

c. <u>How It's Done</u>
Suppose that we interpret LF (i) relative to the cover in (ii). The resulting T-conditions are as in (iii), which are equivalent to the statement in (iv).

(i) [The boys [*DIST* [built a raft]]]

(ii) *cov* = { Bill+Tom+Dave, John+Sue }

(iii) $\forall y . y \leq \text{the.boys} \ \& \ y \in \{ \text{Bill+Tom+Dave, John+Sue} \} \rightarrow \exists z . \text{raft}(z) \ \& \ y \text{ built } z$

(iv) $\exists z . \text{raft}(z) \ \& \ \text{Bill+Tom+Dave built } z$

(23) **Definition of 'Good Fit' for a Cover**

Let *cov* be a cover of the domain of discourse *D*, and DP be some plural definite. *Cov* is a 'good fit' with respect to DP *iff*

$\forall y . y \leq [[DP]] \ \& \ \text{atom}(y) \rightarrow \exists z . z \in \textit{cov}$ and $y \leq z$ and $z \leq [[DP]]$

Illustration: Let [[the boys]] = Bill+Tom+Dave+John. T

The following covers are a 'good fit' with respect to "the boys":

{ Bill, Tom, Dave, John, Sue }
{ Bill+Tom, Dave+John, Sue }
{ Bill,+Tom,+Dave, John, Sue }
{ Bill+Tom+Dave+John, Sue }

The following covers are not 'good fit' (are an 'ill fit') with respect to "the boys".

{ Bill, Tom, Dave, John+Sue }
{ Bill+Tom, Dave+John+Sue }
{ Bill,+Tom,+Dave, John+Sue }
{ Bill+Tom+Dave+John+Sue }

(24) **Brisson's Core Claim Regarding 'Imprecision'**

A structure of the form [… DP [D …] can be interpreted relative to a cover that is an *ill fit* with respect to DP. When this occurs, we obtain the 'imprecision' / 'non-maximality' often observed in plural predication.

(25) **Obvious Consequence**

- If the 'imprecision' / 'non-maximality' found in plural predication is due a *DIST* operator being interpreted relative to an 'ill fitting' cover…
- And, if the presence of "all" elminates such 'imprecision' / 'non-maximality…
- Then, *the semantic contribution of "all" must be that the contextually supplied cover is a* ***good*** *fit with respect to the DP modified by "all."*

(26) **A Formalization of this Notion (Not Exactly Brisson's, But Close)**

$[\![\text{ all }]\!]^{cov} = [\lambda x : \text{good-fit}(\textit{cov} , x) . x]$

- $[\![\text{ all }]\!]^{cov}$ is a type *e* identity function restricted to those entities for which the contextually supplied cover is a 'good fit'.
- Thus, a sentence containing "all" will only be defined if the contextually supplied cover is a 'good fit' with respect to the DP it modifies.

(27) **Key Consequence of (26)**

Suppose that $[\![$ all the boys built a raft $]\!]^{cov} = T$. It follows that:

a. $\forall y . y \leq \text{the.boys} \ \& \ y \in \textit{cov} \rightarrow \exists z . \text{raft}(z) \ \& \ y \text{ built } z$, and

b. *cov* is a 'good fit' with respect to the.boys, and so

c. Every atomic child x was part of some group z such that z built a raft.

- Let x be an arbitrary atomic child.
- Since *cov* is a good fit with respect to the.children, there must be a plurality z such that z in *cov* and $x \leq z$ and $z \leq$ the.boys.
- Since z in *cov* and $z \leq$ the.boys, by (27a), it follows that z built a raft.
- Thus, x is part of a plurality (z) that built a raft.

Thus, from (27c) above, we see how Brisson's semantics in (26) captures the way in which the presence of "all" removes the tolerance of 'exceptions' from cases of plural predication!

(28) **Question: Does This Over-Generate?**

Suppose we interpret sentence (28a) relative to the cover in (28b). We derive the T-conditions in (28c), which would actually hold in scenario (28d). *But (28a) seems to necessarily be false in such a scenario.*

a. [The boys [*DIST* [built a raft]]]

b. *cov* = { Dave, John+Sue, Billl+Mary , Frank+Jen }

c. $\forall y . y \leq \text{the.boys} \ \& \ y \in \{ \text{Dave, John+Sue, Billl+Mary , Frank+Jen} \} \rightarrow \exists z . \text{raft}(z) \ \& \ y \text{ built } z$

d. Dave alone built a raft. No other boy did.

The Presumed Response: "Covers like the one above are 'pathological', and would never be contextually salient."

My Response: "Wouldn't they? What if we make boyfriend-girlfriend pairings salient. Does a true interpretation of (28a) relative (28d) improve?

(29) **The Relation Between "All" and *DIST***

- In what follows, it's important for the account that the presence of "all" entails the presence of *DIST*….
- However, that doesn't obviously follow from the semantics in (26) [nor Brisson's exact version of it]
- Brisson herself never explicitly spells out why "all" entails *DIST*, but here's an imaginable pragmatic story…
    - Given the semantics of "all" in (26), if there were nothing in the sentence that was sensitive to *cov*, then the presence of "all" in that sentence would be vacuous.
    - However, the only natural language element sensitive to the *cov* parameter is the distributive operator *DIST*.
    - Thus, if "all" is in the sentence, *DIST* must be too …
      … otherwise a general kind of 'economy' condition might be violated…

3. Distributivity and Aktionsart

(30) **What We Have So Far**

a. A theory of how the 'imprecision' / 'non-maximality' found with plural predication arises.

DIST operator in the sentence is interpreted relative to a cover that is ill-fitting with respect to the plural argument.

b. A theory of how "all" serves to rule out such 'imprecision' / 'non-maximality' from the sentences it appears in.

introduces a presupposition that the contextually supplied cover is a good fit with respect to the DP "all" modifies.

Note: As a theory of 'imprecision' / 'non-maximality' in plural prediction, this isn't obviously better than the theory developed by Lasersohn (1991), which takes a more general, cognitive/philosophical approach to the phenomenon…

The real strengths of Brisson's proposal lie in how it captures the interactions between "all" and the Aktionsart of the predicate.

(31) **Key Syntactic Hypothesis Regarding Aktionsart Classes**

Accomplishment and activity verbs project a more complex clausal syntax than achievement and state verbs (Dowty 1979, Mittwoch 1982).

a. Accomplishments and activities project a special 'DO' verb

(i) *Sentence:* "The boys built a raft."
Syntax: [The boys [DO [built a raft]]]

(ii) *Sentence:* "The boys carried the piano (around)"
Syntax: [The boys [DO [carried the piano]]]

b. Achievements and states do not project such a verb.

(i) *Sentence:* "The vegetables are heavy."
Syntax: [The vegetables [heavy]]

(ii) *Sentence:* "The boys won"
Syntax: [The boys [won]]

(32) **Key Lexical Semantic Hypotheses Regarding Aktionsart Classes**

a. Regarding This Auxiliary 'DO'
According to Brisson (2003), 'DO' is a kind of semantically bleached activity predicate. The general notion is that with activities and accomplishments, there is a special distinct 'activity' portion of the event described. This 'activity' portion of the event does not exist with statives and achievements.

[[DO]] = [λx : λe : DO(e) & Agent(e,x)]

b. Regarding Activity and Accomplishment Verbs
The lexical core of activity and accomplishment verbs is a relation between themes and resulting states.

(i) [[build]] = [λx : λe : build(e) & Theme(e,x)]
(ii) [[carry]] = [λx : λe : carry(e) & Theme(e,x)]

Note:
Following Kratzer (1998), Brisson makes no ontological distinction between events and states.

c. Regarding State and Achievement Verbs
The lexical core of state and achievement verbs is a relation between events and (all) their participants.

(i) [[heavy]] = [λx : λe : heavy(e) & Theme(e,x)]
(ii) [[win]] = [λx : λe : win(e) & Agent(e,x)]

Note:
This isn't exactly Brisson's proposal, a point we'll return to in Section 4.

(33) **A New Semantic Interprtation Rule: Event Composition**

Brisson explicitly rejects Kratzer's 'Event Identification' rule, and replaces it with the following rule of 'Event Composition'

"If X has daughters Y and Z, and [[Z]] is type <ε,t> while [[Y]] is type <e,εt>, then

[[X]] = [λx : λe : [[Z]](e) & ∃e' . e' ≤ e & [[Y]](x)(e')] "

(34) **An Illustrative Derivation**

a. [[The boys [DO [carried the piano]…]]] =
b. [[DO [carried the piano]]](the.boys) = (by event composition)
c. [λx : λe : [[carried the piano]](e) & ∃e' . e' ≤ e & [[DO]](x)(e')](the.boys) =
d. [λe : carry(e) & Th(e,the.piano) & ∃e' . e' ≤ e & [[DO]](the.boys)(e')] =
e. [λe : carry(e) & Th(e,the.piano) & ∃e' . e' ≤ e & DO(e') & Ag(e',the.boys)]

∃e : carry(e) & Th(e,the.piano) & ∃e' . e' ≤ e & DO(e') & Ag(e',the.boys)

There is an event e of carrying the piano, and there is a subevent e' of e which is an event of 'DOing' that the boys are agent of.

The boys did some stuff, and a carrying of the table resulted…

Question: What, exactly, does any of this buy us?

Answer (Brisson's Insight): If the *DIST* operator is merged 'low' in the structure of an accomplishment/activity – as a modifier of the DO verb – what results is not a classical 'distributive' reading…
…rather, the resulting reading is still collective!

(35) **A New Semantics for the *DIST* Operator**
Since we're now explicitly using events, we have to slightly augment our *DIST* operator.

$[[\ DIST\ ]]^{cov} = [\ \lambda P_{<e,\varepsilon t>} : \lambda x : \lambda e : \forall y\ .\ y \leq x\ \&\ y \in cov \rightarrow \exists e'\ .\ e' \leq e\ \&\ P(y)(e')\ ]$

(36) **Derivation of a (Classic) Distributive Reading**

a. [[The boys [*DIST* [DO [carried the piano]…]]]^{cov} =

b. [[*DIST*]]^{cov} ([[DO [carried the piano]]]^{cov}) (the.boys) =

c. [$\lambda P_{<e,\varepsilon t>}$: λx : λe : ∀y . y ≤ x & y ∈ *cov* → ∃e' . e' ≤ e & P(y)(e')]
([[DO [carried the piano]]]^{cov}) (the.boys) =

d. λe : ∀y . y ≤ the.boys & y ∈ *cov* → ∃e' . e' ≤ e & [[DO carried the piano]](y)(e')

e. λe : ∀y . y ≤ the.boys & y ∈ *cov* → ∃e' . e' ≤ e &
[[carried the piano]](e') & ∃e'' . e'' ≤ e' & [[DO]](y)(e'')

∃e : ∀y . y ≤ the.boys & y ∈ *cov* → ∃e' . e' ≤ e &
carry(e') & Thm(e',the.piano) & ∃e'' . e'' ≤ e' & DO(e'') & Ag(e'',y)
For each boy, there is an event e of carrying the piano, that they DID some subevent e'' of...

(37) **The Key Observation, Part 1**

- Our new *DIST* operator is type <<e,εt>,<e,εt>>.
- The 'DO' verb projected by accomplishments and activities of type <e,εt>
- *Thus, this DIST operator could merge as sister to our DO verb…*
- *Let's see what happens…*

(37) **Interpreting *DIST* as a Modifier of 'DO'**

a. [[The boys [[*DIST* DO] [carried the piano]…]]]^{cov} = (event composition)

b. [λx : λe : [[carried the piano]](e) & ∃e' . e' ≤ e
& [[*DIST* DO]]^{cov} (x)(e')](the.boys) =

c. [λe : carry(e) & Thm(e,the.piano) & ∃e' . e' ≤ e &
[[*DIST* DO]]^{cov} (the.boys)(e') =

d. [λe : carry(e) & Thm(e,the.piano) & ∃e' . e' ≤ e &
[λP$_{<e,εt>}$: λx : λe'' : ∀y . y ≤ x & y ∈ *cov* → ∃e''' . e''' ≤ e'' & P(y)(e''')]
([λz : λe'''' : DO(e'''') & Agent(e'''', z)])(the.boys)(e') =

e. [λe : carry(e) & Thm(e,the.piano) & ∃e' . e' ≤ e &
∀y . y ≤ the.boys & y ∈ *cov* → ∃e''' . e''' ≤ e' &
[λz : λe'''' : DO(e'''') & Agent(e'''', z)](y)(e''')] =

f. [λe : carry(e) & Thm(e,the.piano) & ∃e' . e' ≤ e &
∀y . y ≤ the.boys & y ∈ *cov* → ∃e''' . e''' ≤ e' & DO(e''') & Agent(e''', y)]

∃e : carry(e) & Thm(e,the.piano) & ∃e' . e' ≤ e &
∀y . y ≤ the.boys & y ∈ *cov* → ∃e''' . e''' ≤ e' & DO(e''') & Agent(e''', y)

There is a (single) event e of carrying the piano, and for every boy y,
there is a subevent e''' of e that is an event of y 'DOing'

There is a (single) event e of carrying the piano, and every boy y did something that contributed to that event…

(38) **The Key Observation, Part 2**

The T-conditions derived in (37) are actually a kind of *collective* reading of the sentence.

- There is a *single* event of carrying the piano.
- Each boy participated in that event by 'DOing' some sub-event (*e.g.* lifting up his part of the piano…)

(39) **Core Conclusion**

In structures where a 'DO' head is present, the presence of a *DIST* operator needn't lead to a (classic) distributive reading…

- The *DIST* operator could attach 'low' – as sister to the 'DO' head – leading to a (kind of) collective reading.

With this result, we now have enough to explain the central facts in (10)-(12)…

(41) **Taub's Generalization, Part 1**

When "all DP" is argument to an achievement or a state, a *distributive reading* is obligatory.

a. All the students won.
   (i) *Each of the students individually won.*
   (ii) * *The students won as a group / team.*

b. All the vegetables are heavy.
   (i) *Each of the vegetables is individually heavy.*
   (ii) * *The vegetables together are heavy.*

(42) **Explanation of (41)**

- Due to the presence of "all" in (41a,b), the operator *DIST* must also be present (29)
- With achievements and states, there is no 'DO' head. And so, the only location for the *DIST* operator is as sister to the entire VP (42a,b)
- The T-conditions we derive from those structures are classic distributive readings.

a. *Syntactic Structure:* [The vegetables [*DIST* [heavy]]]

Truth Conditions:
$\exists e : \forall y . y \leq \text{the.vegetables} \ \& \ y \in cov \rightarrow \exists e' . e' \leq e \ \& \ \text{heavy}(e') \ \& \ \text{Thm}(e',y)$

For every vegetable y, there is a heavy state e' that y is theme of.

b. *Syntactic Structure:* [The students [*DIST* [won]]]

Truth Conditions:
$\exists e : \forall y . y \leq \text{the.boys} \ \& \ y \in cov \rightarrow \exists e' . e' \leq e \ \& \ \text{win}(e') \ \& \ \text{Ag}(e',y)$

For every boy y, there is a winning event e' that y is agent of.

(43) **Taub's Generalization, Part 2**
When "all DP" is argument to an accomplishment or an activity, either a collective or a distributive reading is possible.

a. Activity All the students carried the piano around.
(i) *The students carried the piano together as a team.*
(ii) *Each of the students carried the piano individually.*

b. Accomplishment All the students built a raft.
(i) *The students built a single raft together.*
(ii) *Each student built a different raft.*

(44) **Explanation of (43)**

- Due to the presence of "all" in (43a,b), the operator *DIST* must also be present (29)

- With activities and accomplishments, a 'DO' head accompanies the lexical verb. The *DIST* operator may thus merge 'low' as a sister to this 'DO' head. The T-conditions we derive from those structures are a kind of collective reading.

a. *Syntactic Structure* [The students [[*DIST* DO] [carried the piano] …]

b. *Truth Conditions*
$\exists e : carry(e) \ \& \ Thm(e,the.piano) \ \& \ \exists e' \ . \ e' \leq e \ \&$
$\forall y \ . \ y \leq the.boys \ \& \ y \in cov \rightarrow \exists e''' \ . \ e''' \leq e' \ \& \ DO(e''') \ \& \ Agent(e''', y)$

There is a (single) event e of carrying the piano, and every boy y DID something that contributed to that event…

- Of course, the *DIST* operator could also merge 'high' as sister to the entire VP. The resulting reading is a 'classic' distributive reading.

c. *Syntactic Structure* [The students [*DIST* [DO [carried the piano] …]

d. *Truth Conditions*
$\exists e : \forall y \ . \ y \leq the.boys \ \& \ y \in cov \rightarrow \exists e' \ . \ e' \leq e \ \&$
$carry(e') \ \& \ Thm(e',the.piano) \ \& \ \exists e'' \ . \ e'' \leq e' \ \& \ DO(e'') \ \& \ Ag(e'',y)$

For each boy, there is an event e of carrying the piano, that they DID some subevent e'' of…

4. Some Issues for the Analysis

(45) A Potential Problem: Little-*v* Heads for States and Achievements

- The explanation in (42) crucially rests on the assumption that states and achievements are syntactically simple, and not bi-partite like accomplishments and activities.

- However, there seems to be evidence that *all* VPs are (at least) bi-partite, consisting (at minimum) of a (big) VP and a little *v*P.

- Brisson briefly considers the problematic consequences such an assumption poses for her hypothesis. In particular, a sentence like (45a) could have the syntax in (45b), and thus the T-conditions in (45c).

a. All the students elected Mike.

b. [the students [[*DIST v*] [elected Mike] …]

c. $\exists e : \text{elect}(e) \,\&\, \text{Thm}(e, \text{Mike}) \,\&\, \exists e' \,.\, e' \leq e \,\&$
$\forall y \,.\, y \leq \text{the.students} \,\&\, y \in \textit{cov} \rightarrow \exists e'' \,.\, e'' \leq e' \,\&\, \text{Agent}(e'', y)$

There is an event e of electing Mike, and every student y is agent of some sub-event e'' of e.

- However, like the T-conditions in (44b), those in (45c) represent a *collective* reading (since there is a single event of electing Mike that every student contributed to)

(46) Brisson's Response (p. 170)

- Brisson claims that the T-conditions in (45c) are pathological, because "thematic roles are not events in and of themselves."

- Her remarks here are cryptic, but the idea seems to be that you shouldn't be able to predicate a thematic role of an event without saying what *kind* of an event it is (e.g. an event of 'DOing')…

- *I'm not sure I understand this assumption, however…*

(47) **Distributivity Down to Sub-Groups**

- Recall the anomaly of sentences like (47a,b).

- Intuitively, this anomaly is due to (i) the obligatory distributive reading that "all" induces, and (ii) the fact that the predicates in question cannot hold of individuals.

a. * All the students elected Mike.
b. * All the students are a big group.

- This analysis, however, clearly assumes that in a distributive reading, distribution must be down to the atoms (see Brisson 2003: 170)

- In our semantics for *DIST*, however, this isn't so. Because of the *cov* variable, we also allow distribution to subgroups. Such quantification, then, wouldn't necessarily lead to anomaly.

c. $\exists e : \forall y \, . \, y \leq \text{the.students} \; \& \; y \in cov \rightarrow$
$\exists e' \, . \, e' \leq e \; \& \; \text{elect}(e') \; \& \; \text{Ag}(e',y) \; \& \; \text{Thm}(e', \text{Mike})$

d. d. $\exists e : \forall y \, . \, y \leq \text{the.students} \; \& \; y \in cov \rightarrow$
$\exists e' \, . \, e' \leq e \; \& \; \text{be-big-group}(e') \; \& \; \text{Thm}(e', y)$

(48) **Brisson's Response (p. 173)**

- This is actually a correct prediction! If the context is one that makes salient a cover containing subgroups of the plural argument, then sentences like (47a) are indeed acceptable…

a. *Context:* There are a number of student elections going on. All the classes are electing their own president: the first graders, the second graders, *etc.*

b. *Sentence:* All the students elected a president.

c. *Judgment:* (48b) is acceptable in (48a).

- *However, I'm not so sure how well this extends to sentences like (48d,e).*

d. * All the students are a big group.

e. * All the students are a great team.

(49) **"All", Exceptives and Aktionsart**

- Brisson makes the following fascinating observation: *the facts concerning the interactions between "all" and Aktionsart type (10)-(12) also seem to hold for exceptive phrases like "except John" and "without exception".*

a. When co-occurring with states and achievements, exceptive phrases seem to force a distributive reading.

(i) The boys, except John / excepting no one / without exception, won a prize.
(distributive reading only)

(ii) * The boys, except John/excepting no one/without exception, elected Mike

(iii) The boys, except John / excepting no one / without exception, are heavy.
(distributive reading only)

(iv) * The boys, except John/excepting no one/without exception, are a great team.

b. When co-occurring with activities and accomplishments, exceptive phrases allow either a collective or a distributive reading.

(i) The boys, except John / excepting no one / without exception, carried the piano around.
(collective or distributive reading possible)

(ii) The boys, except John / excepting no one / without exception, built a raft.

- Conclusion 1: Clearly a unified analysis is called for. *But how?*

- Conclusion 2: Could the meaning of "all" really just be 'without exception'?
Since exceptive phrases independently exhibit the properties in (10)-(12), those needn't be an argument against such an anlysis!

(50) **Brisson's Solution (174)**

- Exceptive phrases are operators over the domain of quantification (von Fintel 1994)

- Thus, the presence of an exceptive phrase requires presence of some quantificational element.

- In sentences like those in (49), the only possible quantifier is the *DIST* operator.

- Thus, like "all", presence of an exceptive forces presence of *DIST*, and the facts in (49) receive the same explanation as those in (10)-(12)...