Distributive Numerals in Korean: The 'Ssik Construction' (Oh 2001, 2005)

1.   The Basic Empirical and Analytic Claims

(1)   **Key Proposals of Oh (2001, 2005)**

   a.   (Adnominal) distributive numerals in Korean (*aka* 'the Ssik Construction') are 'Distributive Polarity Items'.

   - They are indefinites subject to a syntactic licensing condition, requiring them to be in the scope of a distributive operator (*cf.* NPIs).

   b.   The 'pluractional reading' (*aka* 'event-related reading') of Korean (adnominal) distributive numerals is generated by an LF where the restrictor of the (covert) distributive operator is a plural event.

   - The Davidsonian event argument of the clause is syntactically projected.
   - Its sister can be marked by a covert *DIST* operator, which will ultimately lead to the observed pluractional ('event-related') reading.

(2)   **Unmarked Numerals in Korean**

   a.   John-kwa   Mary-ka   kabang   sey-kay-lul   wunpanhaessta.
         John-and   Mary-NOM   suitcase   three-CL-ACC   carried
         John and Mary carried three suitcases.   (Oh 2001: 326)

   b.   <u>Most Salient Reading: Cumulative / Collective</u>

   $\exists e . \exists x . |x| = 3$ & *suitcase(x) & *carry(e) & *Thm(e) = x & *Ag(e) = J+M

   There is a (possibly plural) event e of carrying, whose cumulative/collective Agent is John+Mary, and whose cumulative/collective theme is a triplet of suitcases.

   c.   <u>Less Salient (Marginal), but Still Possible Reading: Distributive</u>

   $\forall z . z < J+M$ & AT(z) $\rightarrow$
         $\exists e . \exists x . |x| = 3$ & *suitcase(x) & *carry(e) & *Thm(e) = x & *Ag(e) = z

   Each of John and Mary carried a triplet of suitcases.

(3)   **Distributive Numerals in Korean: The 'Ssik Construction'**

    a.   John-kwa   Mary-ka   kabang   sey-kay-**ssik**-lul   wunpanhaessta.
               John-and   Mary-NOM   suitcase   three-CL-**DIST**-ACC   carried
               John and Mary carried three suitcases.   (Oh 2001: 326)

    b.   <u>Most Salient Reading: 'Participant Distributive'</u>

               $\forall z . z < J+M$ & $AT(z) \rightarrow$
                         $\exists e . \exists x . |x| = 3$ & $*suitcase(x)$ & $*carry(e)$ & $*Thm(e) = x$ & $*Ag(e) = z$

               Each of John and Mary carried a triplet of suitcases.

    c.   <u>Less Salient, but Still Very Possible Reading: 'Event Distributive'</u>

               $\exists e . \forall e' . e' < e$ & $AT(e) \rightarrow$
                         $\exists x . |x| = 3$ & $*suitcase(x)$ & $*carry(e')$ & $*Thm(e') = x$ & $*Ag(e') = J+M$

               There is a plural event e, each of whose atomic subevents are an event of John and Mary carrying three suitcases.

    d.   <u>Not a Possible Reading: Cumulative / Collective</u>
               $\exists e . \exists x . |x| = 3$ & $*suitcase(x)$ & $*carry(e)$ & $*Thm(e) = x$ & $*Ag(e) = J+M$

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(4)   **Question**

- Oh (2001, 2005) speaks of the subevents e' in (3c) as if they involve *collective* carrying of three suitcases by John and Mary.

- **However, can a sentence like (3a) also describe multiple events of John and Mary *cumulatively carrying three suitcases?***
  Trip 1:   Mary carries two;   John carries one
  Trip 2:   Mary caries one;   John carries two
  Trip 3:   Mary carries two;   John carries one, *etc.*

(5)   **Question**
Oh (2001, 2005) speaks as if the unmarked sentence (2a) cannot get the 'Event Distributive' reading in (3c). *Is this so?*

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(6)   **Main, Overarching Questions**

    a.   How do we derive the interpretational differences between (2a) and (3a)?

    b.   How do we derive *both* the distributive readings in (3b,c)?

(7) **Morpho-Syntactic Detail: The Suffix *Ssik* Can Only Mark Numerals**

- Oh (2001, 2005) bases this generalization the fact that *ssik* cannot mark bare common nouns, nor conjoined names.

- However, she hedges just a bit (Oh 2001, Footnote 5):

  o "By 'numeral NPs' I mean numerals and some quantifiers which can be construed as *how many* (e.g. *several, a few*)"

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2. **The Semantic Effects of *Ssik* in Different Syntactic Configurations**

(9) **Distributive Numeral in Object; Unmarked Numeral in Subject**

  a. Saram twu-myeng-i   kabang   sey-kay-**ssik**-lul   wunpanhaessta.
      man   two-CL-NOM   suitcase   three-CL-**DIST**-ACC   carried

  b. <u>Most Salient Reading: 'Participant Distributive'</u>
      $\exists y. |y| = 2$ & *man(y) & $\forall z . z < y$ & AT(z) $\rightarrow$
          $\exists e . \exists x . |x| = 3$ & *suitcase(x) & *carry(e) & *Thm(e) = x & *Ag(e) = z

      There is a pair of men y, and every atomic member of y carried three (possibly different) suitcases.

  c. <u>Less Salient, but Still Very Possible Reading: 'Event Distributive'</u>
      $\exists e . \forall e' . e' < e$ & AT(e) $\rightarrow$
          $\exists y. |y| = 2$ & *man(y) & $\exists x . |x| = 3$ & *suitcase(x) &
                  *carry(e') & *Thm(e') = x & *Ag(e') = y

      There is an event e, and every atomic subevent e' of e is an event of two men (collectively/cumulatively) carrying three suitcases.

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(10) **Some Questions**

- As before, can the individual carrying events in the 'event distributive' (*aka* 'pluractional') reading be events of two men *cumulatively* carrying two suitcases?
    Trip 1: Dave carried two   Bill carried one.
    Trip 2: Dave carried one   Bill carried two, *etc.*

- The T-conditions in (9c) allow that it was *different* men / suitcases each time. Is that true for the Korean sentence in (9a)?

- The T-conditions in (9c) allow that its was the same two men / same three suitcases each time. Is that true for the Korean senetnce in (9a)?

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(11)   **Distributive Numeral in Subject; Unmarked Numeral in Object**

     a.   Saram twu-myeng-**ssik**-i   kabang   sey-kay-lul   wunpanhaessta.
           man   two-CL-**DIST**-NOM   suitcase   three-CL-ACC   carried

- Oh (2001, 2005) reports that some speakers find these sentences marginal.
- Jon Ander Mendia (p.c.) reports that similar sentences are ungrammatical in Basque

     b.   <u>Most Salient Reading: 'Participant Distributive'</u>

$\exists y. |y| = 3$ & *suitcase(y) & $\forall z . z < y$ & AT(z) $\rightarrow$
        $\exists e . \exists x . |x| = 2$ & *man(x) & *carry(e) & *Thm(e) = z & *Ag(e) = x

There is a triplet of suitcases y, and every member of y was carried by two (possible different) men.

     c.   <u>Less Salient, but Still Very Possible Reading: 'Event Distributive' (as in (9c))</u>
$\exists e . \forall e' . e' < e$ & AT(e) $\rightarrow$
        $\exists y. |y| = 2$ & *man(y) & $\exists x . |x| = 3$ & *suitcase(x) &
                    *carry(e') & *Thm(e') = x & *Ag(e') = y

(12)   **Some Questions**
- The T-conditions in (11c) allow that it was *different* men / suitcases each time. Is that true for the Korean sentence in (11a)?
- The T-conditions in (11c) allow that its was the same two men / same three suitcases each time. Is that true for the Korean senetnce in (11a)?

(13)   **Distributive Numeral in Subject *and* in Object**

     a.   Saram twu-myeng-**ssik**-i   kabang   sey-kay-**ssik**-lul   wunpanhaessta.
           man   two-CL-**DIST**-NOM   suitcase   three-CL-**DIST**-ACC   carried
           Men in twos carried suitcases in threes.

     b.   <u>Only Possible Reading: 'Event Distributive'</u>

$\exists e . \forall e' . e' < e$ & AT(e) $\rightarrow$
        $\exists y. |y| = 2$ & *man(y) & $\exists x . |x| = 3$ & *suitcase(x) &
                    *carry(e') & *Thm(e') = x & *Ag(e') = y

(14)   **Some Questions**
Again, does (13a) really allow each event of carrying to either have the same men / suitcases or different men / suitcases?

(15)   **Distributive Numeral in Object; *Singular* NP in Subject**

   a.   Ku   kyoswu-ka   haksaeng   twu-myeng-**ssik**-ul   mannaessta.
        the   professor-NOM   student   two-CL-**DIST**-ACC   met

   b.   Only Possible Reading: 'Event Distributive'
        $\exists$e . $\forall$e' . e' < e & AT(e) $\rightarrow$
                $\exists$y. |y| = 2 & *student(y) & *met(e') & *Thm(e') = y & *Ag(e') = the.prof

        There is an event e, and every atomic subevent e' of e is an event of the professor
        meeting with two students.

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(16)   **Questions:**
   •   Can each individual meeting be with same / different pairs of students?
   •   Can the professor meet with each student separately? Or does he need to be
       collectively meeting with pairs of students together?

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(17)   **Locality in the 'Ssik Construction'**

   a.   Chemwentuli   [aituli   phwungsen-hana-**ssik**-ul   saessta] malhaessta
        store.clerks   children   balloon-one-**DIST-ACC**   bought   said

   b.   Possible Interpretation: 'Narrow Scope Participant Distributive'
        said (the.clerks , [λw : $\forall$z . z < the.children & AT(z) $\rightarrow$
                                $\exists$y . balloon(y) & z bought y in w])

        The clerks said that the children each bought one balloon.

   c.   Impossible Interpretation: 'Wide Scope Participant Distributive'
        $\forall$z . z < the.clerks & AT(z) $\rightarrow$
                said (z , [λw : $\exists$y . balloon(y) & the.children bought y in w])

        Each of the clerks said that the children (collectively) bought one balloon.

(18)   **Question**

   •   Can sentence (17a) also get a 'Narrow Scope Eventive Reading', akin to "*The clerks*
       said that the students (collectively) bought balloons one by one"?

   •   Can sentence (17a) also fail to get a 'Wide Scope Eventive Reading', which could
       describe a scenario like the following:
           The clerks said that the kids (collectively) bought balloon 1.
           The clerks said that the kids (collectively) bought balloon 2.
           The clerks said that the kids (collectively) bought balloon 3.

(19)   **Central Questions**

    a.   What accounts for the interpretational differences between sentences with unmarked numerals (2a) and those with distributive numerals (3a)?

    b.   How do we capture the two kinds of 'distributive readings' that the sentences above allow for: the 'participant distributive' reading and the 'event distributive' reading (*aka* 'the pluractional reading', 'the event-related reading').

    c.   How do we capture the distribution of 'participant distributive' and 'event distributive' interpretations in (9)-(17)?

    d.   How do we capture the locality relation between the *ssik*-marked numeral (the distributive numeral) and the understood restrictor of the *DIST* operator?

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3.   **The Formal Analysis: Distributive Numerals as 'Distributive Polarity Items'**

(20)   **Key Observation**

In all the sentences above, the numeral marked with *ssik* (the distributive numeral) seems to lie within the *scope* of a distributive operator.

$$[[\text{ DIST }]] \, (QP) \, (YP) \quad = \quad \forall z . z < [[QP]] \rightarrow [[YP]](z)$$

Restirctor	Scope

Restirctor	Scope

    a.   <u>Illustration: Sentences Distributive Numeral in Direct Object</u>

        Saram twu-myeng-i   kabang   sey-kay-**ssik**-lul   wunpanhaessta.
        man   two-CL-NOM   suitcase   three-CL-**DIST**-ACC   carried

        (i)   *Possible Interpretation: Participant Distributive on Subject*
                $\exists y . |y| = 2$ & *man(y) & $\forall z . z < y$ & AT(z) $\rightarrow$
                    $\exists e . \mathbf{\exists x . |x| = 3}$ & ***suitcase(x)** & *carry(e) & *Thm(e) = x & *Ag(e) = z

        (ii)   *Possible Interpretation: Event Distributive*
                $\exists e . \forall e' . e' < e$ & AT(e) $\rightarrow$
                      $\exists y . |y| = 2$ & *man(y) & $\mathbf{\exists x . |x| = 3}$ & ***suitcase(x)** &
                                *carry(e') & *Thm(e') = x & *Ag(e') = y

        (iii)   *Not a Possible Interpretation: Participant Distributive on Object*
                $\mathbf{\exists y . |y| = 3}$ & ***suitcase(y)** & $\forall z . z < y$ & AT(z) $\rightarrow$
                    $\exists e . \exists x . |x| = 2$ & *man(x) & *carry(e) & *Thm(e) = z & *Ag(e) = x
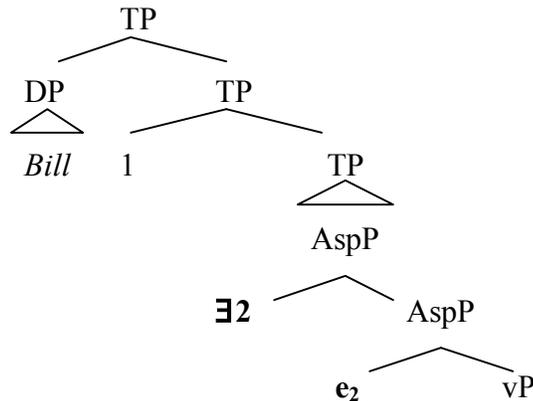
(21)   **Key Proposal**

Numerals marked with *ssik* (distributive numerals) are 'Distributive Polarity Items'.

- They are subject to a syntactic licensing condition that requires them to lie within the scope (c-command domain) of a distributive operator (at LF).

Note: The actual mechanism for this licensing is left unexplained (Oh 2001, 2005)

(22)   **Crucial Further Assumption: Projection of the Event Argument**

- The event argument is actually projected as an event pronoun in the syntax.
- This event argument is bound by a syntactically projected existential quantifier

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              TP
           ╱      ╲
        DP          TP
       ╱╲         ╱    ╲
     Bill   1   TP
              ╱   ╲
            AspP
         ╱    ╲
       ∃2      AspP
            ╱    ╲
          e₂      vP
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3.1   The Analysis at Work, Part 1

(23)   **Sentences with Distributive Numeral in Object, Unmarked Numeral in Subject**

Saram twu-myeng-i   kabang   sey-kay-**ssik**-lul   wunpanhaessta.
man   two-CL-NOM   suitcase   three-CL-**DIST**-ACC   carried
Two men each carried thre suitcases ; Two men carried suitcases in threes.

(24)   **Deriving the Participant Distributive Reading**

a.   LF-Structure
     [two men [**DIST** [1 [∃2 [e₂ [**three suitcases** [3 [*t₁* carried *t₃*] …]

b.   Predicted Truth-Conditions: Participant Distributive Reading (9b)

$\exists y. |y| = 2$ & *man(y) & $\forall z . z < y$ & AT(z) $\rightarrow$
      $\exists e . \exists x . |x| = 3$ & *suitcase(x) & *carry(e) & *Thm(e) = x & *Ag(e) = z

(25) **Deriving the Event Distributive Reading**

    a.   <u>LF-Structure</u>
        [∃2 [e_2 [**DIST** [two men [1 [**three suitcases** [3 [t_1 carried t_3] …]

    b.   <u>Predicted Truth-Conditions: Event Distributive Reading (9c)</u>

$$\exists e \,.\, \forall e' \,.\, e' < e \;\&\; AT(e) \rightarrow$$
$$\exists y \,.\, |y| = 2 \;\&\; {}^*man(y) \;\&\; \exists x \,.\, |x| = 3 \;\&\; {}^*suitcase(x) \;\&$$
$$ {}^*carry(e') \;\&\; {}^*Thm(e') = x \;\&\; {}^*Ag(e') = y$$

Note: Similar derivations can work to predict the observed readings for sentence (11a).

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(26) **A Potential Problem**

- Both the LFs in (26a) and (26b) seem derivable from the surface structure of (23). And, both would satisfy the 'DPI' licensing requirements on *ssik*.

- *But, are the truth-conditions they are mapped to possible readings for (23)?*

    a.   (i)   <u>The LF Structure:</u>
                [two men [1 [∃2 [e_2 [**DIST** [**three suitcases** [3 [t_1 carried t_3] …]

           (ii)   <u>The Truth Conditions:</u>
$$\exists y \,.\, |y| = 2 \;\&\; {}^*man(y) \;\&\; \exists e \,.\, \forall e' \,.\, e' < e \;\&\; AT(e) \rightarrow$$
$$\exists x \,.\, |x| = 3 \;\&\; {}^*suitcase(x) \;\&\; {}^*carry(e') \;\&\; {}^*Thm(e') = x \;\&\; {}^*Ag(e') = y$$

                There is a pair of men y who (cumulatively/collecticely) carried suitcases in threes.

    b.   (i)   <u>The LF Structure:</u>
                [two men [**DIST** [1 [∃2 [e_2 [**DIST** [**three suitcases** [3 [t_1 carried t_3]…]

           (ii)   <u>The Truth Conditions</u>

$$\exists y \,.\, |y| = 2 \;\&\; {}^*man(y) \;\&\; \forall z \,.\, z < y \;\&\; AT(z) \rightarrow$$
$$\exists e \,.\, \forall e' \,.\, e' < e \;\&\; AT(e) \rightarrow$$
$$\exists x \,.\, |x| = 3 \;\&\; {}^*suitcase(x) \;\&\; {}^*carry(e') \;\&\; {}^*Thm(e') = x \;\&\; {}^*Ag(e') = z$$

                There is a pair of men y, each of whom carried suitcases in threes.

(27)   **Some Discussion by Oh (2001)**

- Oh (2001, 2005) does not discuss the possibility of reading (26aii).

- However, Oh (2001) *does* discuss reading (26bii), and *claims that it is not possible.*

- Oh's (2001) Explanation:

  o   Phonologically null *DIST* operators cannot just be freely inserted in the syntax

  o   Rather, there needs to be exactly one *DIST* operator for every *ssik* suffix.

  o   Thus, the LF in (26b) would be ruled out; there are two *DIST* but only one *ssik*

  o   **Note, however, that nothing yet rules out the LF in (26a)**

3.2   The Analysis at Work, Part 2

(28)   **Sentences with Distributive Numeral in Object *and* Subject Position**

Saram twu-myeng-**ssik**-i   kabang   sey-kay-**ssik**-lul   wunpanhaessta.
man   two-CL-**DIST**-NOM   suitcase   three-CL-**DIST**-ACC   carried
Two men carried suitcases in threes.

(29)   **Deriving the Sole, Event-Distributive Reading**

- In sentences like (28), both the subject and object bear *ssik*.

- Thus, according to (21), both the subject and the object must be c-commanded by a *DIST* operator.

- Thus, there must be a *DIST* operator c-commanding both the subject and object. For this *DIST* operator, the only possible restrictor is the event argument (29a).

- Thus, we must derive an 'event distributive' reading for such sentences.

a.   LF-Structure
        [$\exists$2 [e$_2$ [**DIST** [**two men** [1 [**three suitcases** [3 [t_1 carried t_3] …]

b.   Predicted Truth-Conditions: Event Distributive Reading (13b)

        $\exists e . \forall e' . e' < e$ & AT(e) $\rightarrow$
                $\exists y. |y| = 2$ & *man(y) & $\exists x . |x| = 3$ & *suitcase(x) &
                                *carry(e') & *Thm(e') = x & *Ag(e') = y

(30)   **A Potential Problem**

- Both the LFs in (30a) and (30b) seem derivable from the surface structure of (28).
    - And, both would satisfy the 'DPI' licensing requirements on *ssik*.
    - And, both would satisfy the condition that there is only one *DIST* for each *ssik*

- *But, are the truth-conditions they are mapped to possible readings for (23)?*

a.   (i)   <u>The LF Structure:</u>
               [∃2 [e₂ [**DIST** [**two men** [**DIST** [1 [**three suitcases** [3 [t_1 carried t_3] …]

       (ii)   <u>The Truth Conditions</u>:

               ∃e . ∀e' . e' < e & AT(e) →
                 ∃y. |y| = 2 & *man(y) & ∀z . z < y & AT(z)
                   ∃x . |x| = 3 & *suitcase(x) & *carry(e') & *Thm(e') = x & *Ag(e') = z

               There are several events e' of two men each carrying three suitcases.

b.   (i)   <u>The LF Structure:</u>
               [∃2 [e₂ [**DIST** [**three suitcases** [**DIST** [3 [**two men** [1 [t_1 carried t_3] …]

       (ii)   <u>The Truth Conditions</u>:

               ∃e . ∀e' . e' < e & AT(e) →
                 ∃x . |x| = 3 & *suitcase(x) & ∀z . z < y & AT(z)
                   ∃y. |y| = 2 & *man(y) & *carry(e') & *Thm(e') = z & *Ag(e') = y

               There are several events e' of three suitcases each being carried by two men.

3.3   The Analysis at Work, Part 3

(31)   **Sentences with Distributive Numeral in Object and a *Singular* Subject**

Ku	kyoswu-ka	haksaeng	twu-myeng-**ssik**-ul	mannaessta.
the	professor-NOM	student	two-CL-**DIST**-ACC	met

The professor met students in twos.

(32)   **Deriving the Sole, Event-Distributive Reading**

- In sentences like (31), the direct object bears *ssik*, and so must be c-commanded by a *DIST* operator.

- Since the subject of the sentence is singular, the only possible restrictor for this *DIST* operator is the event argument.

- Thus, we must derive an 'event distributive' reading for such sentences.

    a.   <u>LF-Structure</u>
           [$\exists 2$ [e_2 [**DIST** [**two students** [3 [the professor met t_3] …]

    b.   <u>Predicted Truth-Conditions: Event Distributive Reading (15b)</u>
           $\exists e . \forall e' . e' < e \,\&\, AT(e) \rightarrow$
              $\exists y. |y| = 2 \,\&\, *student(y) \,\&\, *met(e') \,\&\, *Thm(e') = y \,\&\, *Ag(e') = the.prof$

(33)   **Interim Summary: Some Answers to Some Key Questions**

    a.   What accounts for the interpretational differences between sentences with unmarked numerals (2a) and those with distributive numerals (3a)?

        - Due to the syntactic condition in (21), sentences containing distributive numerals must contain a *DIST* operator, and so require some form of distributive reading.

    b.   How do we capture the two kinds of 'distributive readings' that the sentences above allow for: the 'participant distributive' reading and the 'event distributive' reading (*aka* 'the pluractional reading', 'the event-related reading').

        - In the 'participant distributive' reading, the restrictor of the required *DIST* operator is another plural argument in the sentence.

        - In the 'event distributive' reading, the restrictor is the (covert) event argument of the *v*P.

    c.   How do we capture the distribution of 'participant distributive' and 'event distributive' interpretations in (9)-(17)?

        - In every sentence thus far, there is an event argument, and so the 'event distributive' reading is always possible.

        - Certain features of other sentences effect what other kinds of restrictors are possible… (see preceding discussion)

3.4   Some Further Predictions: Sentences with I-Level Predicates

(34)   **First Prediction**

In sentences headed by I-level predicates (with plural arguments), an 'event distributive' reading will not be possible.

a.   <u>Sentence:</u>

John-kwa	Mary-ka	wekuko	twu-kaji-**ssik**-ul	anta.
John-and	Mary-NOM	foreign.lang	two-CL-**DIST**-ACC	know

John and Mary each know two foreign languages.

b.   <u>Only Possible Interpretation: Participant Distributive</u>

$\forall z . z < J+M$ & $AT(z) \rightarrow \exists y. |y| = 2$ & *foreign.language(y) & z knows y

c.   <u>Explanation</u>

- Given the presence of *ssik*, the direct object must be in the scope of a distributive operator.

- **Since the predicate is I-level, there is no Davidsonian event argument in the sentence.**

- Therefore, the only possible restrictor for the *DIST* is the plural argument *John and Mary*.

(35)   **Second Prediction**

In a transitive sentence with (i) an I-level predicate, and (ii) a distributive numeral marking one argument, the other argument *must* be plural.

a.   <u>Sentence:</u>

	* John-kwa	wekuko	twu-kaji-**ssik**-ul	anta.
	John-and	foreign.lang	two-CL-**DIST**-ACC	know

b.   <u>Explanation:</u>

- The distributive numeral requires that there be a *DIST* operator that c-commands it.

- However, there is no possible restrictor argument for this *DIST* operator in (35a). There is no other plural DP, and there is no event argument.

3.5   Explaining the Locality Conditions Governing Distributive Numerals

(36)   **An Outstanding Question**
How do we capture the locality relation between the *ssik*-marked numeral (the distributive numeral) and the understood restrictor of the *DIST* operator?

(37)   **Locality in the 'Ssik Construction'**

        a.   Chemwentuli   [aituli   phwungsen-hana-**ssik**-ul   saessta]   malhaessta
               store.clerks   children   balloon-one-**DIST-ACC**   bought   said

        b.   <u>Possible Interpretation: 'Narrow Scope Participant Distributive'</u>

            said (the.clerks , [λw : **∀z . z < the.children** & AT(z) →
                                            ∃y . balloon(y) & z bought y in w])

            *The clerks said that **each** child bought **one** balloon.*

        c.   <u>Impossible Interpretation: 'Wide Scope Participant Distributive'</u>

            ∀z . z < the.clerks & AT(z) →
                said (z , [λw : **∃y . balloon(y)** & the.children bought y in w])

            ***Each** clerk said that the children bought **one** balloon.*

(38)   **Analysis of the Locality Constraint in (37)**

        <u>LF Generating the Unavailable Reading:</u>
        [The clerks [***DIST*** [1 [said [$_{CP}$ **one balloon** [2 [the children bought t_2]

- In the LF above, the distributive numeral is separated from the licensing *DIST* operator by a finite clause boundary.

- We might, then, capture the impossibility of this LF – and the reading in (37c) – by supposing that the licensing relation between *DIST* and the distributive numeral is clause-bounded (like so many things are…)

(39)   **A Problem**

- Without a richer story about the licensing mechanism between *DIST* and *ssik*, it's not clear how plausible / predictive the story in (38) is.

- Note, too, that the licensing relationship holding between negation and NPIs is not clause bound:
                    "I **didn't** say that Bill bought **anything**."

(40)   **More Locality in the 'Ssik Construction'**

?? Kyoswu-two-myeng-**ssik**-i   John-i   wekuko   sey-kaji-lul
   professor-two-CL-**DIST**-NOM   John-NOM   foreign.lang   three-CL-ACC

paewuesstanunkes-ul   anta
knows-ACC   know

NOT: Three foreign languages are each such that two professors know John knows them.

(41)   **Explanation for the Anomaly of (40)**

*   The *ssik* on the matrix subject requires that it be c-commanded by a *DIST* operator in the matrix clause.

*   The matrix predicate is I-level, and so the restrictor of this matrix *DIST* could not be an event argument.

*   There is another plural DP in the sentence – *wekuko seykaji* 'three foreign languages' – but it's located in a subordinate clause.

    o   Thus, the only way it could act as the restrictor to the matrix *DIST* is if it underwent QR to the matrix clause.

    o   However, QR in Korean is clause bounded, as it is in English.

4.   One Final Interesting Fact: Licensing of *Ssik* by Overt Distributive Operators

(42)   **An Overt Distributive Operator in Korean: *Kakkak* (Oh 2005: 128)**

The particle *kakkak* 'each' in Korean seems to be a straightforward correlate of floated 'each' in English.

a.   <u>Sentence:</u>

Haksayng   twu-myeng-i   **kakkak**   sangca han-kay-lul wunpanhayssta.
student   two-CL-NOM   **each**   box   one-CL-ACC   carried
Two students each carried one box.

b.   <u>Truth-Conditions</u>

$\exists y. |y| = 2$ & *student(y) & $\forall z . z < y$ & AT(z) $\rightarrow$
        $\exists e . \exists x . |x| = 1$ & *box(x) & *carry(e) & *Thm(e) = x & *Ag(e) = z

(43)   **Key Fact: *Kakkak* Alone Licenses the Appearance of *Ssik***

   a.   <u>Sentence:</u>

   Haksayng   twu-myeng-i   **kakkak**   sangca han-kay-**SSIK**-lul   wunpanhayssta.
   student   two-CL-NOM   **each**   box   one-CL-**DIST**-ACC   carried
   Two students each carried one box.

   b.   <u>Most Salient Interpretation</u>

   $\exists$y. |y| = 2 & *student(y) & $\forall$z . z < y & AT(z) $\rightarrow$
                      $\exists$e . $\exists$x . |x| = 1 & *box(x) & *carry(e) & *Thm(e) = x & *Ag(e) = z

   •   Oh (2005) reports that there is no salient semantic difference between sentence (42a)
       – with *kakkak* alone – and sentence (43a) – with both *kakkak* and *ssik*.

(44)   **Analysis of Interaction Between *Kakkak* and *Ssik***

   •   Clearly, *kakkak* seems equivalent in its semantics to the covert *DIST* operator.

   •   Thus, it stands to reason that *kakkak* would have whatever feature it is that allows
       DIST to license *ssik*-marked numerals (distributive numerals)

   •   Thus, a *ssik*-marked numeral will be licensed when c-commanded by *kakkak*, and so
       no additional covert *DIST* operator need be inserted.

(45)   **Potential Problem**

   •   It seems possible to derive the LF in (45a) for the sentence in (43a). Nothing seems to
       block such a syntactic derivation.

   •   *But, are the predicted T-conditions in (45b) indeed a reading for (43a)?*

   a.   <u>Possible LF for Sentence (43):</u>
             [two students [*kakkak* [1 [$\exists$2 [e$_2$ [**DIST** [one box [3 [t_1 carried t_3]…]

   b.   <u>Truth-Conditions Predicted for LF (45a):</u>
             $\exists$y. |y| = 2 & *student(y) & $\forall$z . z < y & AT(z) $\rightarrow$
                $\exists$e . $\forall$e' . e' < e & AT(e') $\rightarrow$
                      $\exists$x . |x| = 1 & *box(x) & *carry(e') & *Thm(e') = x & *Ag(e') = z

   Two students each carried boxes one-by-one.

(46)   **Summary: Some Outstanding Issues for the 'DPI' Analysis of Oh (2001, 2005)**

- As is so often the case, the syntactic insertion of *DIST* operators is rather unconstrained.

    o   This weakens the predictive power of the analysis.

    o   Moreover, without placing such limits on the *DIST* operators, the account seems to predict additional LFs and readings that may or may not exist (and which Oh does not discuss).

- The licensing mechanism between the *DIST* operator and the distributive numeral is not concretely spelled out.

    o   Again, this weakens the predictive power of the analysis.

    o   Moreover, the kinds of licensing relationships that are being analogized here (*e.g.* NPIs) don't seem to be subject to the kind of locality conditions that we need to hold for *'Ssik'*-licensing.