The Ingredients of Essentially Plural Predicates

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1. Tree Kinds of "Plural" Predicates

Predicates that, informally speaking, range over collections of individuals can be grouped into three kinds: "genuine collective" predicates, "pluralized individual" predicates and "essentially plural" predicates (e.g. Dowty(1986), Brisson(1998), Winter(1998) among others). Genuine collective predicates as exemplified in (1) range over collections of individuals due to their lexical/encyclopedic meaning. I.e. a single individual cannot (typically) be a team, a couple, a nation, etc. just as much as a single individual (typically) cannot elect a president, constitute a majority or be numerous.

(1) **Genuine Collective Predicates**[2]

a. team, committee, group, herd, pack, ensemble, nation, couple, ...

b. outnumber, elect a president, constituted a majority, vote to accept the proposal$_1$,...

c. be numerous, be outnumbered, ...

While genuine collective predicates range inherently over collections of individuals, pluralized individual predicates exemplified in (2), as the name suggests, can do so only because they are pluralized.

[1] I would like to thank Diana Cresti, Dave Embick, Elena Guerzoni, Irene Heim, Norbert Hornstein, Winnie Lechner and the audience of the seminar in formal semantics (Fall 2001) at Georgetown for helpful discussion. All mistakes are mine.

[2] These predicate types exist in all three major lexical categories, nouns, verbs and adjectives/ adverbials and morpho-syntactically simplex as well as complex. This paper focuses for the most part on nominal predicates because they display the distinctions I am interested in the clearest way.

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(2) **Pluralized Individual Predicates**
a. students, professors, ...
b. have blue eyes, have/speak with a French accent, vote to accept the proposal$_2$, make fun of themselves, ...
c. are blue-eyed, are fond of themselves, ...

Predicates like *student, professor, have blue eyes, be fond of oneself,* inherently are true of individuals only. Pluralization of these predicates however enlarges their range so that they can be true of collections of students, professors, etc. as well as of individuals who are students, professors etc. A simple argument to support this claim comes from the felicity of discourses like (3) which contrasts markedly with the infelicity of parallel discourses employing genuine collective predicates as in (4).

(3) A: No students/critics/fans/uncles/fathers etc. came.
B: False. John did.

(4) A: No couple(s)/trio(s)/etc. came.
B: #False. John did.

The fact that one can reject A's claim in (3) by pointing out that John came suggests that single individuals can be in the denotation of *students/critics/fans* etc. The infelicity in (4) on the other hand confirms the intuition that genuine collective predicates inherently range over collections of individuals but not over single individuals. Pluralized individual predicates therefore differ from genuine collective predicates not only in their form and origin (they are derived via pluralization) but also in their range. The third class of predicates, often referred to as essentially plural predicates is exemplified in (5).

(5) **Essentially Plural Predicates**
a. friends, neighbors, (twin-)brothers, 2nd-degree cousins, critics of each other, advisors of each other, fans of each other,...
b. meet, gather, disperse, collide, separate, mix, like each other, hate each other, ...
c. be similar, be different, be identical, be congruent, be familiar with each other, be used to each other, ...

Essentially plural predicates are peculiar because they seem to have properties in common with genuine collective predicates as well as pluralized individual predicates. On the one hand, essentially plural predicates cannot be true of individuals – just like genuine collective predicates. After all it seems equally impossible for a single individual to be a couple, elect a president, be numerous, etc. as it seems for a single individual to be a twin-brother/sister, to meet, or to be similar, etc. This intuition is supported by the infelicity of discourses as in (6) which is parallel to the discourses in (3) and (4).

(6) A: No twin-brothers/siblings/next-door neighbors etc. came.

B: #False. John did.[3]

On the other hand, essentially plural predicates are plural marked just like pluralized individual predicates and need to be so to be essentially plural.[4] This seems to suggest that they are derived from a basic predicate via pluralization just like pluralized individual predicates, although it is at first sight not clear what the basic predicate could be that is pluralized to produce an essentially plural predicate. A second fundamental similarity is that essentially plural predicates like pluralized individual predicates support cumulative inferences – one of the hallmarks of plural predicates – as shown in (7) for the former and in (8) for the latter class.

(7) a. John is a student/parent/critic etc.
b. Mary is student/parent/critic etc. Sue is a student/parent/critic etc.
c. =>John, Mary (and Sue) are students/parents/critics etc.

(8) a. John and Mary are next-door neighbors/2nd-degree cousins/...
b. John and Sue are next-door neighbors/2nd-degree cousins /...
c. =>John, Mary and Sue are next-door neighbors/2nd-degree cousins /...

Clearly, if it is true that John is a student, Mary is a student and Sue is a student then one can infer that John, Mary and Sue are students. Likewise if it is true that John and Mary are next-door neighbors/2nd-degree cousins/etc. and John and Sue are next-door neighbors/2nd-degree cousins/etc. it seems fair to describe the same state of affairs by pointing out that John, Mary and Sue are next-door neighbors/2nd-degree cousins/etc. Genuine collective predicates differ markedly in this respect as the data in (9) show.

(9) a. John and Mary are a couple/team/committee/etc.
b. John (Bill) and Sue are a couple/team/committee/etc.
c. =/>John, (Bill), Mary and Sue are a couple/team/committee/etc.
d. =>John and Mary and John (Bill) and Sue are a couple/team/committee/etc.

Even if it is true that John and Mary are a couple/team/committee etc. and John and Sue are a couple/team/committee etc. (John being part of two couples/teams/

[3] There is also a reading of (6)A under which (6)B is felicitous. In this case, the predicate is understood as pluralized relational noun whose internal argument is either provided by the discourse or existentially quantified. A more explicit paraphrase of B's response under this reading would be *No. John who is a sibling of pro/twin-brother of somebody/etc. did.* Under this construal, the predicate behaves just like a pluralized individual predicate which explains the felicity of the response. Although it seems intuitively clear that these are two different construals of *twin-brothers, siblings,* etc. it is difficult to keep them separate. One strategy is to contrast essentially plural predicates with pluralized relational predicates like *fans, uncles,* etc. which require discourse support as well if their internal argument is phonologically not realized. The diagnostic is then that if there is difference in discourse requirements between nouns like *twin-brothers* and *uncles* the former is construed as essentially plural predicate.

[4] If they are in the singular then they have to be construed relationally as described in footnote 3.

committees etc.) one cannot describe the same situation by stating that John, Mary and Sue are (a) couple(s)/team(s)/committee(s) etc. Instead, it is required to mention John twice as in the claim that John and Mary and John and Sue are (a) couple(s)/team(s)/ committee(s) etc. In other words, cumulative inferences for genuine collective predicates are valid not for regular individuals but for couples/teams/committees etc.

The final piece of data – equally elementary as and parallel to the cumulative inferences discussed above – comes from different counting inferences illustrated in (10) and (11) and shows again that essentially plural predicates behave like pluralized individual rather than genuine collective predicates.

(10) a. At least two couples came.
b. =>At least **four** people came (assuming that there are no overlapping couples).

(11) a. At least two twin-brothers/next-door neighbors/fans of each other/... came.
b. =/>At least **four** people came.
c. =>At least **two** people came.

The fact that we can infer from the truth of the claim that at least two couples came, that there are at least 4 people that came (assuming that there are no overlapping couples) is expected and shows once more that there are couples in the extension of genuine collective nouns. These couples are counted by counting quantifiers such as *at least n, more than n,* etc. Since every couple consists of exactly 2 different people, we can infer that twice as many people came. The same reasoning should prima facie apply to counting of twin-brothers since there are only pairs of individuals in the extension of *twin-brother* just like in the extension of *couple.* It is quite unexpected then, than we are not counting pairs or more generally collections of individuals when essentially plural nouns provide the restrictor of counting quantifiers. Instead, we are counting regular individuals just like we do, when pluralized individual predicates are employed.

These elementary observations can be summarized as follows: 1. **Pluralized individual** predicates are derived via pluralization from basic individual predicate. They range over regular individuals and pluralities thereof. Following Link(1983) the denotation of a pluralized individual predicate P-Pl can be modeled as the closure of P under the i(ndividual)-sum formation symbolized by $\oplus$ and executed by the *-operator given in (12). This explains on the one hand why P-Pl (i.e. *P) ranges both over single individuals as well as collections of them, and on the other, why cumulative and counting inferences are based on regular individuals.

(12) $[\![*]\!] = \lambda f \in D_{(e,t)} . \lambda x \in D_e . f(x)=1 \text{ or } \exists x_1,x_2 [x_1 \oplus x_2 = x \ \& \ *f(x_1) = *f(x_2) = 1]$

2. **Genuine collective predicates** range inherently over collections of individuals. They do not need pluralization (i.e. the *-operator) to do so. Since regular individuals

cannot (typically) be groups, couples, teams, etc. genuine collective predicates are not defined for them. Likewise, cumulative and counting inferences are based on groups rather than regular individuals. 3. **Essentially plural predicates** are puzzling because they have properties that are defined over regular individuals (cumulative and counting inferences) even though essentially plural predicates themselves are not defined for regular individuals. Furthermore, they need to be plural, hence seem to be derived via pluralization even though there is no obvious candidate for a basic (1-place) predicate that they could be derived from.

2. Essentially Plural Predicates and (Covert) Reciprocity

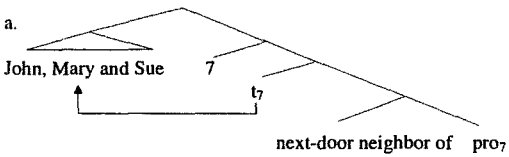
2.1 Deriving Essentially Plural Predicates from their Relational Counterpart

I propose to account for the properties of essentially plural predicates like *twin-brothers, next-door neighbors, colleagues,* etc.[5] by deriving them from their corresponding relational nouns *twin-brother of, next-door neighbor of, colleague of,* etc. via pluralization of the relational predicate followed by reflexivization which are processes that are independently needed. To get started, observe that relations like *next-door neighbor of, twin-brother of,* etc. seem to come with a condition of non-identity on their arguments. After all, one cannot be his/her own twin-brother/2nd-degree cousin/next-door neighbor etc. The lexical entries in (13) take notice of this fact in terms of a presupposition that demands non-identity of the two arguments of the relation.

(13) a. [[*next-door neighbor of*]] = $\lambda x.\lambda y: y \neq x.$ y is a next-door neighbor of x[6]
b. [[*twin-brother of*]] = $\lambda x.\lambda y: y \neq x.$ y is a twin-brother of x

Next, consider what happens if such relation is reflexived. For concreteness, assume that a silent pronoun is inserted into the internal argument position and this pronoun is co-indexed with the external argument of the relation as sketched in (14).

(14) a.



b. $\lambda x.$[[*next-door neighbor*]](x)(x) = ∅

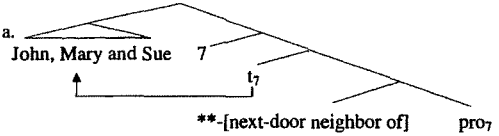
[5] The proposal is intended to cover all essentially plural predicates, even though the discussion focuses on nominal predicates. Future work has to show how verbal and adjectival essentially plural predicates can be covered by the proposal.

[6] Next-door neighbor can of course be understood as predicate of property owners. Under this reading, nothing prevents one to be his or her own next-door neighbor because nothing prevents the same person to own adjacent properties.

The result is a reflexive predicate *λx. x is a next-door neighbor of x* that no individual can satisfy because of the non-identity condition inherent to *next-door neighbor of*. The situation can be rescued however if the relation *next-door neighbor of* is pluralized using the **-operator of Krifka(1986) given in (15) (cf. also Sternefeld(1998), Beck (1999,2001) among others) before its two arguments are co-indexed.

(15) $**R(x)(y)=1$ iff $R(x)(y)=1$ or $\exists x_1x_2y_1y_2$: $x_1 \oplus x_2=x$ & $y_1 \oplus y_2=y$ & $**R(x_1)(y_1)=1$ & $**R(x_2)(y_2)=1$

(16) a.



b. $\lambda x.[[**\textit{-next-door neighbor}]](x)(x) = \{J \oplus M, M \oplus S, J \oplus M \oplus S\}$

Pluralization of the relation resolves the conflict because it allows for a plural individual to satisfy the reflexivized predicate if the plural individual contains at least two non-identical individual parts that stand in the *next-door neighbor of* relation to each other. For instance, the plurality described by *John and Mary* is in the extension of *next-door neighbors* if each of John and Mary is a next-door neighbor of the other in John and Mary. The same is true for the plurality denoted by *Mary and Sue*. By cumulativity, the plurality described by *John, Mary and Sue* is in the extension of *next-door neighbors* because for each of John, Mary and Sue there is at least one other of John, Mary and Sue who is a next-door neighbor of him or her. Deriving essentially plural nouns in this manner explains therefore immediately 1. why they need to be plural, if they weren't their extension would be necessarily empty, 2. why their denotation contains either no individuals or pluralities that have at least two non-identical i-parts (a single individual cannot be his own next-door neighbor) and 3. why cumulative inferences are valid for regular individuals that stand in the basic relation to each other.

The proposal sketched above is strongly reminiscent of Sternefeld's(1998) and Beck's(1999,20001) treatment of weak reciprocity exemplified in (17)a. The truth-conditions are given in (17)b and are comparable to the ones characteristic of essentially plural nouns like *next-door neighbors*.

(17) a. The children are touching each other.

b. $\forall x[child(x) \rightarrow \exists y[child(y)$ & $x \neq y$ & x touched y]] & $\forall y[child(y) \rightarrow \exists x[child(x)$ & $x \neq y$ & x touched y]]

Just as it is not required for each child to touch each other child for (17)a to be true, it is not required for John, Mary and Sue to be next-door neighbors that each of John, Mary and Sue is a next-door neighbor of every other of John, Mary and Sue (a

situation that could only be satisfied in a triangular arrangement).[7] The salient difference between essentially plural nouns and reciprocated predicates is that non-identity condition is introduced through the *other*-part of the reciprocal anaphor in the latter case while it is lexically given with essentially plural nouns. From this perspective it comes as no surprise that essentially plural nouns can take reciprocal anaphors as internal arguments and if they do so, there is no apparent change in meaning.

(18) a. John, Mary and Sue are next-door neighbors/2nd-degree cousins (of each other).
b. John, Mary and Sue are critics/fans/ etc. #(of each other).

This is quite unlike relational nouns like *fan of, critic of,* etc. whose meaning clearly changes if they are reciprocated. In fact, they acquire just the properties of essentially plural predicates. If there is no reciprocal anaphor, the internal argument needs to be supplied by the discourse or is existentially quantified, giving the relational predicate *fan* and its pluralized derivative *fans* the semantics of a (pluralized) individual predicate..What is the difference between relational nouns like *next-door neighbor of* and *fan of* so that the latter require an overt reciprocal to become essentially plural while the former don't? One difference already noted above is that essentially plural nouns lexically have a presupposition of non-identity on their arguments while the other relations clearly do not. This difference alone is however not sufficient to delimit the two classes. Relations like *uncle of, father of,* etc. do not allow their arguments to be identified just like *twin-brother* of. Nevertheless they do not generate essentially plural predicates. This is as expected if essentially plural predicates are inherently reciprocal because relational nouns like *father of* cannot be reciprocated (**unclesfathers* etc. *of each other*). The reason is clear enough: these relations are necessarily asymmetric while reciprocated relations are symmetric. Following this line of thought, I propose the generalization in (19) as characterization of those relations that can generate essentially plural predicates without the help of a reciprocal anaphor.

(19) **Generalization**
Inherently symmetric relations that have a presupposition of non-identity have inherently reciprocal essentially plural predicate counterparts.

Note that nothing in the derivation sketched in (16) – in particular nothing in the definition of the **-operator – makes direct reference to symmetry. It is therefore not

[7] Of course, there are other essentially plural nouns that seem to have stronger requirements. For instance, for many speakers *colleagues, friends, 2nd-cousins* are strongly reciprocal. I.e. for John, Mary and Sue to be colleagues/friends/2nd-degree cousins of each other each has to be a colleague/friend/2nd-degree cousin of every other. I assume provisionally that we should take the weak truth-conditions of *next-door neighbors* to be indicative of the truth-conditions provided by the semantics of the essentially plural predicate alone and attribute the stronger requirements of *2nd-degree cousins* to a process of pragmatic strengthening. Should that be not sufficient, one could alternatively derive essentially plural predicates as covertly strongly reciprocal predicates. Such a modification would not alter the main point of the paper namely that essentially plural predicates are covertly, inherently reciprocal, however.

immediately obvious why inherent symmetry is important. However, the following rationale ca be given: turning a relation, i.e. a set of ordered pairs, into a predicate of pluralities, the set of plural individuals whose parts stand in the basic relation to each other, entails a "loss of information" unless the original relation is symmetric. Since i-sum formation is symmetric, a set of plural individuals {a⊕b, c⊕d, ...} can represent a set of ordered pairs faithfully only if the set of ordered pairs contains both ⟨a,b⟩, ⟨c,d⟩, ... and ⟨b,a⟩, ⟨d,c⟩, ..., if the relation is symmetric. In other words, a symmetric relation R with a non-identity condition supports the same entailments that its essentially plural counterpart **R supports over the individual parts of the pluralities in its extension. Or more casually: to know that Jon and Mary are next-door neighbors is to know that John is a next-door neighbor of Mary and Mary is a next-door neighbor of John. If the relation is not inherently symmetrical a reciprocal is required to signal that the original relation happens to be symmetric and irreflexive and therefore recoverable from an essentially plural predicate.[8]

2.2 Is the Derivation Lexical or Syntactic?

I would like to end this section by pointing out a puzzle concerning the issue whether the relationship between essentially plural predicates and their relational source should be located in the lexicon or viewed as syntactic process. Even though the proposal was framed in terms of syntactic operations of co-indexation and pluralization, it is not impossible to describe the same relationship in terms of lexical generalizations. An argument in favor of a syntactic account comes from predicates like *separate, compare, exchange,* etc. which are essentially plural on their internal arguments. The relational sources from which these predicates are derived are *separate from, compare with, exchange with,* etc.

(20) a. John separated/compared/exchanged/ etc. Mary from/with/with Sue.
b. John separated/compared/exchanged/ etc. Mary and Sue.

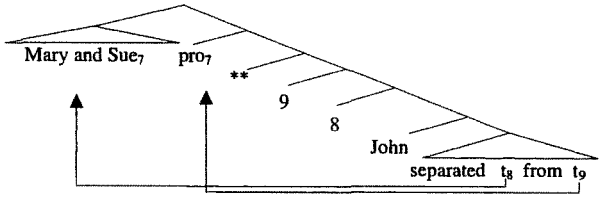
These predicates are inherently symmetric on their two internal arguments and require of these two arguments that they are not identical. They obey therefore a suitably generalized statement of the generalization in (19). The important observation is however, that the **-operator cannot directly apply to the lexical item *separate* because it is a 3-place relation. Instead, the **-operator needs to apply to a derived predicate whose

[8] For a plural predicate to represent a symmetric and reflexive relation, it has to contain single individuals as well since ⟨a,a⟩ would be represented by a⊕a = a. At first sight, predicates like *be similar, look alike,* etc. seem promising candidates because they appear to be both inherently symmetric and reflexive. Interestingly, these relations generate essentially plural predicates. One possibility to account for that is to assume that predicates of identity and similarity take individual concepts/guises as arguments and demand of those individual concepts/guises that they are not identical. Reflexivization would again result in a predicate that no individual concept could directly satisfy. A plurality of concepts however could, if it consists of two non-identical concepts that are similar to each other.

subject position is saturated and whose internal argument positions are abstracted over before they are co-indexed as sketched in (21).

(21) a. [[*separate*]]= λx.λy: y≠x.λz. z separates x from y

b.



c. [[***-separate-Refl*]]= λx.λz.**[λy$_1$.λy$_2$.[[*separate*]] (y$_1$)(y$_2$)(z) = 1](x)(x) = 1

Clearly then, the derivation of essentially plural *separate* from its source *separate from* has to happen in the syntax.[9] The situation however is more complicated because there seems to be an equally strong argument against this conclusion coming from the i-within-i generalization. According to the i-within-i filter, the subject of an NP cannot bind a variable. This is illustrated by the ungrammaticality of sentences as in (22).

(22) a. *[No next-door neighbors/critics/fans/admirers/etc. of each other$_7$]$_7$ came.
b. *[No next-door neighbors/critics/fans/admirers/etc. of their$_7$ parents]$_7$ came.

Nevertheless there are NPs that denote essentially plural predicates as shown in (23)b. Interestingly, it is the same class of nominal predicates that can be essentially plural without an overt reciprocal pronoun. Relational nouns like *fans, critics*, etc. on the other hand cannot be construed as essentially plural predicates in this environment and require a discourse supported or existentially quantified internal argument. This asymmetry strongly suggests that inherently reciprocal predicates have a derivation that does not rely on anaphor/variable binding.

(23) a. No critics/fans/admirers/etc. ⟨of pro$_8$⟩ came.
b. No 2nd-degree cousins/next-door neighbors/etc. came.

There are two possibilities of addressing this puzzle. On the one hand, we could allow both lexical and syntactic derivations of essentially plural predicates. This would however be redundant and therefore prima facie unattractive.[10] Alternatively, one could

[9] See eg. Sauerland(1989) and Beck(1999,2001) for parallel observations.

[10] It is also conceivable to have a purely lexical process employing a ***-operator that pluralizes vacuously over the subject to account for the *separate* class. A fully general statement could employ Generalized Reflexivization (argument identification) and Cumulation as given below.

insist on a purely syntactic account taking on the obligation to find an independent reason why NP-subjects can bind only covert pronouns.[11] I cannot settle this issue here.

3. A Note on the Counting Inferences

Finally, let me briefly comment on the counting inferences mentioned in (10) and (11). Recall the puzzling contrast between genuine collective nouns such as *couple* and essentially plural nouns like *twin-brothers* when they provide the restrictor of counting quantifiers such as *at least/at most/more than/* etc. *n* NP. Even though both types of predicates range only over collections of individuals, pairs in the two cases above, we count pairs of individuals, couples, in one case but individuals in the other.

(24) a. At least two students/members of duos were meeting. => 2 people met
b. At least two couples were meeting. => 4 people met
c. At least two twin-brothers were meeting. => 2 people met

This simple fact shows that plural quantifiers like *at least n, more than n,* etc. cannot simply count the smallest parts/individuals in the extension of the plural predicate, as one would naturally assume. If that were so, *twin-brothers* would be counted like *couples* in terms of pairs of individuals. Plural quantification therefore needs to be sensitive to the kinds of individuals that are in the extension of the plural noun. More specifically, we need a procedure that counts students, couples and individuals that are twin-brothers of somebody in the respective cases. Such a treatment in line with a decompositional analysis of comparative plural quantifiers defended in Hackl(2000) can be sketched as follows[12]: Let's assume with Hackl(2000) that comparative quantifiers are degree constructions based on a (sometimes phonetically) empty gradable determiner *many* defined in (25)b which projects a structure sketched in (25)c. Roughly, *many* is claimed to take a degree of cardinality as its innermost argument and yields an existential determiner quantifier whose arguments are *-predicates and yields true iff there is a plural individual that satisfies both predicates and consists on d-many atomic parts.

(i) For any n-place relation R^n, there is a related if R^{n-1} st. $R^{n+1} = \lambda x_1 \ldots \lambda y \ldots \lambda x_{n-1}.R(x_1)\ldots(y)(y)\ldots(x_n)$

(ii) ${}^{n}*R^n(x_1)\ldots(x_n)=1$ iff $R^n(x_1)\ldots(x_n)=1$ or $\exists x_{11}x_{12},\ldots,x_{n1}x_{n2}: x_1 \oplus_1 x_{12}=x_1,\ldots,x_{n1}\oplus x_{n2}=x_n$ & ${}^{n}*R^n(x_{11})\ldots(x_{n1}) = 1$ & ... & ${}^{n}*R^n(x_{12})\ldots(x_{n2}) = 1$

(iii) If R^n is inherently symmetric and has a non-identity presupposition for the 2 identified positions, R^n has a inherently reciprocal R^{n-1}.

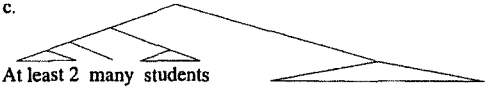
Although such a treatment covers the ground, it is suspicious because n-place pluralization would have to be effectively vacuous except for the two identified argument positions.

[11] Note that it is not feasible to blame solely the reciprocal anaphor because nominal predicates like *separation of* can be overtly reciprocated.

(i) a. The comparison of the 1st year students with the second year students
b. The comparison of the 1st year students with each other

[12] See e.g. Chierchia(1998), van der Does(1994) or Winter(1998) for possible alternatives.

(25) a. More than/at least/no fewer than 2-⟨many⟩ students are meeting in the hallway.
b. $[\![many]\!]=\lambda d.\lambda^* f\in D_{\langle e,t\rangle}.\lambda^* g\in D_{\langle e,t\rangle}.\exists x^* f(x)=^* g(x)=1 \& x$ has d-many atomic parts.
c.



This proposal by itself cannot account for the different counting inferences yet because no distinction is drawn between the atomic parts in *couples* and *twin-brothers*. To draw the distinction, I would like to propose a minimal amendment according to which degrees are always overtly or covertly specified for the units of measurement to be applied by the degree function. In the case of degrees of cardinality, the unit of measurement is – unless specified otherwise – given by the blandest form of the nominal predicate as indicated in (26).

(26) a. [[At least [2 student]] many] students] were meeting.
b. [[At least [2 couple]] many] couples] were meeting.
c. [[At least [2 twin-brother of someone] many] twin-brothers] were meeting.

I.e. *students* will be counted in terms of how many atomic student-parts there are that satisfy the VP, *couples* will be counted in terms of how many atomic couple-parts there are and *twin-brothers* will be counted in terms of how many individuals that are twin-brothers of someone – arguably the blandest predicate derivable from *twin-brother of* – there are that satisfy the VP as twin-brothers.[13] If this suggestion is on the right track, plural quantification would be structurally parallel to overt measure phrase quantification such as *at least 2 pairs of students, 2 dozen students, 2 baskets full of apples*, etc. and indeed quantification over mass terms as in *2 liters of milk, 2 cases of jewelry*, etc. Much work needs to done, to see whether such a uniform treatment is feasible.

4. Summary

This paper suggests, based on an analysis of nouns like *twin-brothers, next-door neighbors*, etc. that essentially plural predicates are derived from relational counterparts *twin-brother of, next-door neighbor of*, etc. via the independently needed operations of reflexivization and pluralization. This provides a principled account of the properties of essentially plural nouns as well as a characterization of relational predicates that have essentially plural predicative counterparts. Future research has to show whether the treatment of essentially plural nouns can be extended to essentially plural verbal and

[13] Note that we cannot simply use $*\lambda x.\exists y$ y is a twin-brother of x as the NP restrictor of *many* to derive the relevant reading because we would be counting individuals who have a twin-brother without demanding that each twin-brother pair has to meet.

adjectival/adverbial predicates.[14] Furthermore, it was argued that essentially plural nouns provide a window into (comparative) plural quantification suggesting that plural quantification and mass term quantification employ fundamentally identical structures.

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[14] One difficulty is to identify the relational source of predicates like *gather, disperse, swarm*, etc.