The idea

Three options from Kamp & Reyle (1993, 468–9):

a. the largest set A of club members such that for any two distinct elements a and b of A, a knows b and b knows a, consists of more than half of the members of the club.

b. the set of club members a for which there is some other member b such that a knows b and b knows a consists of more than half of the members of the club.

c. the set of pairs of distinct club members a and b such that a knows b and b knows a consists of more than half of the total number of pairs of distinct club members.

Problems:

too strong. (1) is "arguably true" in a situation where there is one cluster of members such that each pair of them have spoken.

too weak. But hard to tell.

too strong. Assume there are ten members and that a subset of six all know each other but there is otherwise no knowing. Then there are 30 pairs in the know relation and 60 pairs not in the know relation. But the sentence is (definitely) true.

Conclusion:

"It is not certain that the matter could ever be settled, no matter how many sentences and scenarios we look at. It may well be that sentences of the type exemplified in (4.293) [–(1)] do not have well-defined truth conditions, which apply to all situations in which the sentence can be used - that all that can be ascertained of them is that they are true in some situations and false in certain others, but that there are many other situations in which their truth values are not determined." (Kamp & Reyle, 1993, 469)

This is surprising because (1) is made up from well-understood components:

(2). a. The members of this club know each other.

b. More than half of the members of this club know the chairman.

c. More than half of the members of this club know each other.

Downward entailling quantifiers

(3) Its members are so class conscious that few have spoken to each other, lest they accidentally commit a social faux pas.

As Dykmytle et al. (1998) observe, this sentence “claims that few members have spoken to another one; it is clearly not a statement about the size of the largest group of members such that each pair of them have spoken.”

Global Strongest Meaning Hypothesis? But not replicated in other downward entailment contexts (Sauréland, 2012):

(4). If the team members know each other in advance, they won.

(5). No team whose members knew each other in advance lost.

(6). Most farmers who own a donkey beat it a. True iff a majority of donkey-owning farmers beat all their donkeys b. False iff a majority of donkey-owning farmers beat none of their donkeys c. Neither otherwise.

Neither "counts as true" in worlds that resolve the current question under discussion in the same way as in a world in which the sentence is true.

The ambiguity

In plural dynamic semantics, generalized quantifiers introduce two discourse referents for anaphoric uptake (Nouwen, 2003):

- the maximal set (the whole restrictor set)
- the reference set (the intersection of the restrictor and the scope)

(7) Few senators admire Kennedy. Most of them prefer Carter. (they = reference set)
(8) Few senators admire Kennedy and they are very junior. (they = maximal set)

Similar ambiguity with reciprocals:

(9) Most club members know each other.
(10) Contribution of people know each other.
(11) People know each other.
(12) Contributions of people know each other.

Reciprocals with quantified antecedents

(13) Most farmers who own a donkey beat it.

(14) Some people know each other.
(15) Some people know each other.

For independent reasons, predicates like know require strong reciprocity, i.e.

\[
\text{\textup{Maximal set binding}}\quad \lambda x, y, z (x \text{knows} y \land y \text{knows} z \rightarrow (x \text{knows} z \land z \text{knows} x))
\]

Reference set binding

\[
\text{Reference set binding} = \lambda x, y, z (x \text{knows} y \land y \text{knows} z \rightarrow (x \text{knows} z \land z \text{knows} y))
\]

The framework

Plural CDRT (Brasovouu, 2007, following van den Dleeg 1996):

(10). a. Two cats ate three mice.

b. atomic(x, [x, 1, 2, 3])
c. know-each-other(x, y, z)

c. Maximal set binding: \(\lambda x, y, z \land x \text{knows} y \rightarrow (x \text{knows} z \land z \text{knows} y))

(11) Contribution of people know each other.

(12) Contributions of people know each other.

(13) Contribution of people know each other.

(14) Contribution of people know each other.

Reciprocity in plural CDRT

(15) Contribution of people know each other.

Generalized (Non-Distributive) Quantification in plural CDRT

(16) \(\max \{P(x), \max \{x = \text{Q}(x), \text{DET}(x, y)\}\}\)

Quantiﬁers are externally dynamic and introduce two drefs for a maximal set (following Brasovouu, 2007)

(17) Contribution of people know each other.
(18) Contributions of people know each other.

Combining reciprocals and quantifiers

Combining (11) and (12) we get (14) where the antecedent "\(x\) can be either \(x\) or \(y\)

(19) Contribution of people know each other.

Reciprocity + quantification

(20) Contribution of people know each other.

(21) Contributions of people know each other.

(22) Contributions of people know each other.

The reference set contains everyone who knows some other person.