6.4.s. Summary

Logical forms (without free variables) may be given semantic values by assigning values to the non-logical vocabulary they contain; that is, they can be given extensions (or intensions) by an extensional (or intensional) *interpretation* of this vocabulary. The extensions of predicates and functors are functions that take as input reference values from a referential range **R** that must be specified along with an extensional interpretation; the range and the interpretations of non-logical vocabulary together constitute a structure for any expressions formed using only the non-logical vocabulary that is interpreted in the structure. We assume each value of the range is labeled by an ID .

A referential range may be depicted by points in a plane labeled by their IDs, and further labeling and other devices can depict extensions of non-logical vocabulary on this range. Terms may be used to label the points that represent their reference values, and one-place predicates may label the points they are true of . Alternatively a one-place predicate may label a line enclosing the set of all points it is true of; this set is one way of representing its extension. If the extension of a predicate of more than one place is thought of as a set, it must be a set of ordered pairs , triples, or other *n-tuples*; these may be represented by arrows (perhaps with legs) that indicate the order of values in the *n*-tuple. The reference functions that are extensions of functors are not easily depicted in this way, but they may be displayed in tables analogous to mathematical tables. We may calculate the extensions that structures give to expressions by using a table analogous to a truth table, with all the information in a structure providing the basis for the calculation of a single row.

Structures are now the appropriate counterexamples to claims of validity. To build a structure that divides a dead-end gap, we take the alias sets of the gap and choose a range that contains a value corresponding to each alias set. Then we assign extensions to unanalyzed terms and functors so that the reference value each compound term will be the value corresponding to the term's alias set. Finally, we assign extensions to predicates by seeing what terms the resources affirm or deny these predicates of. Our new rules for closing gaps ensure that these instructions are consistent and that a structure built in this way will divide the dead-end gap. Such a structure can also be found as at least a part of a possible world.