

## LECTURE 9: AUFBAU §10–20

### 1. *Carnap's thesis:* Scientific statements relate only to structural properties.

Why? Because if a statement is objective, then it must be about something shared.

§15 “The series of experiences is different for each subject. . . If we want to achieve agreement . . . this can be done only through the formal description of the structure of these entities.”

§13 “. . . any intersubjective, rational science presupposes this possibility” [of purely structural description]

§15 “For science wants to speak about what is objective, and whatever does not belong to the structure but to the material is, in the final analysis, subjective.”

§15 “It was not until Russell that the importance of structure for the achievement of objectivity was pointed out.”

### 2. Some ideas from formal logic

#### (a) Properties versus relations

#### (b) Formal properties of relations

- e.g. symmetric, transitive, reflexive
- equivalence relations & classes
- arrow diagrams

### 3. Science without objects

§10 “Relation descriptions form the starting-point of the whole constructional system and hence constitute the basis of unified science. Furthermore, it is the goal of each scientific theory to become, as far as its content is concerned, a pure relation description.”

§12 “Thus, our thesis, namely that scientific statements relate only to structural properties, amounts to the assertion that scientific statements speak only of forms without stating what the elements and the relations of these forms are.”

### 4. Structural definite descriptions

§15 “. . . a definite description through pure structure statements is generally possible to the extent in which scientific discrimination is possible at all.”

- the (scientific) identity of indiscernibles