

Assignment I

Using predicate logic, write the truth-conditional semantic representations of the following sentences.

- London Tube drivers to strike over pay
- We don't want to go on strike
- Aslef is seeking a pay agreement with London Underground.
- No trade union can accept any pay proposal
- about 10,000 of its members were involved in the dispute.
- The cost of living is always important to our finances.
- the rise is likely to be £10.50 to £628 a month
- Someone receiving attendance allowance will see an increase of about £1.85 a week in April.
- Why the benefit rise could have been higher
- Many people face higher monthly repayments

London Tube drivers to strike over pay

- $\forall x(\text{driver_LT}(x) \rightarrow \text{strike_over_pay}(x))$
- $\forall x(\text{driver_LT}(x) \rightarrow \exists y(\text{payment}(y) \wedge \text{strike}(x, y)))$
- $\forall x(\text{driver}(x) \wedge \text{LT_Union}(x) \rightarrow \exists y(\text{payment}(y) \wedge \text{strike}(x, y)))$

We don't want to go on strike

- $\forall x(\text{we}(x) \rightarrow \neg \text{strike}(x))$. ☹
- Better: $\forall x(\text{we}(x) \rightarrow (\neg \text{want}(x, e) \wedge \text{strike}(e)))$
- Better: $\forall x(\text{we}(x) \rightarrow (\neg \text{want}(x, e_1) \wedge \text{continue}(e_1, e_2) \wedge \text{strike}(e_2)))$

How should we analyse *we*?

- Expressions like *we*, *here*, and *now* are often analyzed as indexicals or deictic expressions.
- The meaning of such expressions depends on the context.
- We need a way to formalise contextual parameters like Speaker, Addressee, Location and Time.

Aslef is seeking a pay agreement with London Underground.

- `seek(aslef, pay_agreement(e, aslef, LU))`
- $\exists x \dots \text{aslef}(x) \dots$ ☹ Proper names

No trade union can accept any pay proposal

- key structure: $\forall x(\text{pay_proposal}(x) \dots \rightarrow \neg \text{accept}(\dots x \dots))$

about 10,000 of its members were involved in the dispute.

- $\text{about_10,000}(x, \text{member}(x), \iota y(\text{dispute}(y) \wedge \text{involve}(x, y)))$
- Generalised quantifier is a standard way to analyse numbers.
- We don't cover ι . You get full mark if you use \exists instead.

The cost of living is always important to our finances.

- $\forall x \forall y (\text{cost_of_living}(x) \wedge \text{finance}(y) \rightarrow \text{important}(x, y))$
- We don't cover modification over events, so the above analysis is OK.

the rise is likely to be £10.50 to £628 a month

- *likely* is similar to *always*.