

Semantic Theory SS 08 Exercise Lexical Semantics

- 1 Consider the following fragment of the dolphin text:

Dolphins are mammals, not fish. They are warm blooded like man, and give birth to one baby called a calf (at a time). They are (highly) sociable animals, living in pods which are (fairly) fluid, (with dolphins from other pods interacting with each other from time to time).

Try to write down Description Logic axioms that (approximately) represent the information contained in the sentences (do not care about the parenthesized parts). Use the following atomic predicates and roles:

Dolphin, Mammal, Fish, Warm_blooded, Man, Baby, Calf, Sociable, Animal, Pod, Fluid, Give_birth_to, Live_in

Difficulties? Comment, please!

- 2 The notion of a thematic role as such is highly useful. The problem is: How many different roles are there? Describe briefly the answers proposed by (1) Fillmore's original theory of thematic roles, (2) by PropBank, and (3) by FrameNet, and point out advantages and disadvantages.
- 3 According to Davidson's event-semantic analysis, intransitive verbs have an underlying representation as two-place predicates, e.g., *John walks* translates to $\exists e \text{ walk}'(j^*)(e)$. Since NPs in their type-theoretic standard analysis have type $\langle\langle e, t \rangle, t \rangle$, and the straightforward type-theoretic analysis of two-place predicates is $\langle e, \langle e, t \rangle \rangle$, a type conflict arises. Change the type of the intransitive verb in a way that makes function application between subject and verb possible. Hint: Look at the treatment of transitive verbs in type-theoretic semantics!