Administrivia

• Reminders
  – **Homework 3**
    • due Thursday
    • *hope you all have attempted it*
    • email (midnight deadline)
  – **Thursday’s Class**
    • Computer Lab classroom confirmed
    • 3:30pm – 4:45pm
    • *come prepared with non-working Homework 3 grammars etc. so I can help you*
Today’s Class

• Back to theory today...

• [A course objective: to work on theory and practice with formal theories in parallel.]
Last Time

- Last time... actually two lectures ago...

• Chapter 4: Modifiers

• Adjectives
  - Intersective model (see also Homework 3)
    • view predicates as representing sets
    • (1) Ossie is a bird  \( \text{ossie} \in \{\text{set of all birds..} \} \)
    • (2) Ossie is tall  \( \text{ossie} \in \{\text{set of all tall things..} \} \)
    • (3) Ossie is a tall bird
      - \( \text{ossie} \in \{\text{set of all birds..} \} \cap \{\text{set of all tall things..} \} \)
Last Time

• **Adjectives**
  – **Problems with the intersective model**
    • *not every adjective falls neatly into this framework*
    • Ossie $\in \{\text{set of all birds..}\} \cap \{\text{set of all tall things..}\}$
    • “tall bird” perhaps more precisely means “tall for a bird”
    • Ossie is a bird & Ossie is taller\_than bird average

• cf. Ossie is a **dead** bird
• Ossie $\in \{\text{set of all birds..}\} \cap \{\text{set of all dead things..}\}$

• cf. **former** teacher
• does “former” have an intersective interpretation?
Chapter 4: Modifiers

• 4.4 Adverbs
  – traditionally
    • adjectives modify nouns
    • adverbs modify verbs
  – example:
    • (6) Shelby barked loudly  adverbial modification
      • event(e,barking), agent(e,shelby), loud(e).
    • (6’) Shelby is loud  adjectival modification
      • loud(shelby).
    • is there an “event” here?
Chapter 4: Modifiers

• **4.4 Adverbs**
  – further modification (e.g. time and place)
  – examples:
    • (7) *Yesterday, Shelby barked in the backyard*
      · event(e,barking), agent(e,shelby),
        place(e,backyard), time(e,yesterday).

    • (7′) *Yesterday, Shelby barked loudly in the backyard*
      · event(e,barking), agent(e,shelby), loud(e),
        place(e,backyard), time(e,yesterday).
Chapter 4: Modifiers

• **4.4 Adverbs**
  
  – **example**: *(subject oriented)*
    
    • (8a) John *intentionally* met Mary
      
      • event(e, meeting), participant(e, john),
        participant(e, mary), *intentional(e).*

    • more correctly?
      
      • event(e, meeting), participant(e, john),
        participant(e, mary), *intended/caused(e, john).*
Chapter 4: Modifiers

• 4.4 Adverbs
  – **example**: *(object oriented)*
    • (8b) John chopped the onion *finely*
      • event(e,chopping), agent(e,john),
        patient(e,onion), fine(e).

  • resultative interpretation
    • event(e,chopping), agent(e,john),
      patient(e,onion), transformed(e,onion,pieces),
      fine(pieces).
• **Another example** (*not in handout*):
  
  – John hammered the nail
  
  – John hammered the nail nude
  
  – John hammereded the nail flat

  *how would you express the conjunction of these two statements?*

  – ?John hammereded the nail flat nude
  
  – *John hammereded the nail nude flat*
Chapter 4: Modifiers

- **Another example** (*not in handout*):
  - John hammered the nail
  - event(e, hammering), agent(e, john), patient(e, nail).

  - John hammered the nail nude
  - event(e, hammering), agent(e, john), patient(e, nail), nude(john).
  - *(what's does this fail to capture?)*

  - John hammered the nail flat
  - event(e, hammering), agent(e, john), patient(e, nail), result(e, flat(nail)). *(informally)*
Chapter 4: Modifiers

• **Another example** *(not in handout)*:
  – John hammered the nail flat nude
  – event(e, hammering), agent(e, john), patient(e, nail), result(e, flat(nail)), nude(e, john).
Chapter 4: Modifiers

• 4.4 Adverbs
  – example: *(speaker oriented)*
    • (8c) Surprisingly, John cried
      • event(e,crying), agent(e,john), surprising(e,speaker).
Chapter 4: Modifiers

• **4.4.2 Adverbs without events**
  – *view them as properties of individuals*
  – *earlier example:*
    • (6) Shelby barked loudly

    • Phrase
    • bark
    • bark loudly

    **Set-theoretic view**
    {..individuals who bark..}
    **subset** of {..individuals who bark..}

**implementation idea:**
loudly could be a function that maps a property onto another property
Chapter 4: Modifiers

• 4.4.2 Adverbs without events
  – view them as relation mappers
  – earlier example:
    • (8b) John chopped the onions finely

• Phrase               Relational view
  • chop               chop(X,Y).
  • finely             takes a relation, picks out its 2nd argument,
                        adds result: (2nd argument) is in fine pieces
  • chop(X,Y).
  • chop(X,Y), become(Y,fine_pieces).
Chapter 4: Modifiers

• 4.4.2 Adverbs without events
  – view them as proposition mappers
  – earlier example:
    • (8) Surprisingly, John cried

    • Phrase       Propositional view
    • cry          cry(X).
    • John cried   cried(john).

    • surprisingly  takes a proposition, produces a complex proposition,
    •              adding a statement about the truth of the proposition
    •              cried(john).
    •              cried(john), surprising(cried(john),speaker).