

# Unit #1 Summary

LING 570

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Week 4: 10/19/09

# Recap: formal grammars and languages

- Formal language and formal grammar
  - Chomsky hierarchy
  - Other grammars and languages
- The following are equivalent:
  - Regular language
  - Regular grammar
  - Regular expression
  - FSA (DFA and NFA)

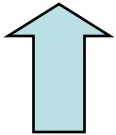
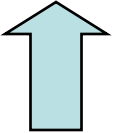
# Recap: FSA and FST

- FST and regular relation are equivalent
- Extension of FSA/FST
  - Probabilistic and weighted FSA
  - FST and weighted FST
- Packages: AT&T, Carmel, NLTK
- Applications of FSA / FST:
  - Morphological analyzer
  - ASR
  - ...

# Recap: morphological analysis

- Three components:
  - Lexicon: book is a “regular” noun, -s is a PL suffix
  - Morphotactic rules: PL follows nouns
  - Orthographic rules: e-insertion, e-deletion

# An example

- Task: foxes  $\rightarrow$  fox +N +PL
- Surface: foxes
  -  Orthographic rules
- Intermediate: fox s
  -  Lexicon + morphotactics
- Lexical: fox +N +pl