

# Semantics: The Analysis of Meaning

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# Meaning

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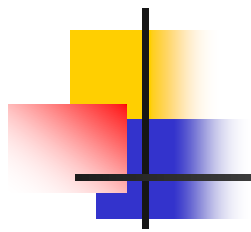
- To understand language
  - the meaning of words and of the morphemes that compose them
  - Words into phrases and sentences
  - Context which determines the meaning (Pragmatics)



# What is Semantics?

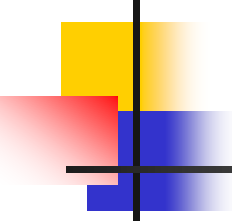
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- The study of meaning of words, phrases, and sentences.
  - Lexical semantics (words and meaning relationship among words)
  - Phrasal/ sentential semantics (syntactic units larger than a word)
- What a speaker conventionally means (objective or general meaning)- *not what he is trying to say* (subjective or local meaning)



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# The meaning of Sentences (Sentential Semantics)



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We comprehend sentences because we know the meaning of individual words and we know the rules for combining their meanings." But just because a sentence is well formed and has a meaning doesn't necessarily make it true.

Ex: Linguistics class meets on Tuesdays.

Linguistics class meets on Sundays.

Both have meaning, only the first is true. Knowledge outside of the semantics of the words is required to determine the truth value.

# TRUTH VALUE



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## **Truth-conditional semantics**

knowing the truth value of sentences by considering the context or conditions

## **Compositional semantics**

Knowing the meaning of a sentences by putting the meaning of its components together



**Tautologies/analytic sentences** can be recognized as true by virtue of linguistic knowledge alone.

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Circles are round.

Dogs are animals.

**Contradictions** are always false.

My single brother divorced his wife.

Adults are children.

**Paradoxes**

The barber shaves himself.



# Entailment

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The elephant is pregnant.

The elephant is female.

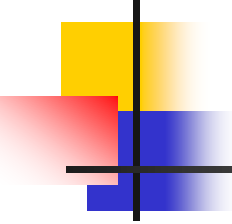
## Paraphrase

Sentences are PARAPHRASES if they have the same meaning (except possibly for minor differences in emphasis).

Ex: I'll be glad to come./I'll be happy to come.

**(Lexical paraphrase)**





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Ex: It seems that Dolores is very kind to animals.  
Dolores seems to be very kind to animals. (**structural paraphrase**)

Ex: She has been dieting and he has been dieting too.  
She has been dieting and he has been too./  
She has been dieting and he has too.

### **Contradictory Sentences**

P: Aristotle is a man

Q: Aristotle is a woman.



# AMBIGUITIES

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"A word or sentence is **AMBIGUOUS** if it can be understood or interpreted in more than one way."

three different kinds of ambiguity: lexical, metaphorical, and structural.

## **LEXICAL AMBIGUITY**

when a sentence is ambiguous because it contains one or more ambiguous words.

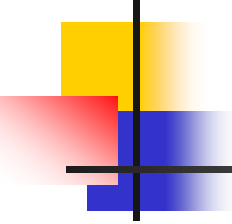
One way to get lexical ambiguity is to use homophones. Homophones are words have different meanings but sound the same.

Ex- She cannot bear children.

Endings which disambiguate: ...if they are noisy.

...because she is sterile.

# METAPHOR



a figure of speech in which a word or phrase literally denoting one kind of object or idea is used in place of another to suggest a likeness or analogy between them (as in drowning in money)

"Some sentences are ambiguous because they have both a literal meaning and a nonliteral or metaphorical meaning."

Ex: John is a snake in the grass.

Time is money.

My new car is a lemon.



# STRUCTURAL AMBIGUITY

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**when the structure of the sentence permits more than one interpretation, rather than the words in the sentence.**

Sometimes, sentences have multiple meanings, and these meanings can be described in terms of different groupings of words, or different trees. For example, the sentence

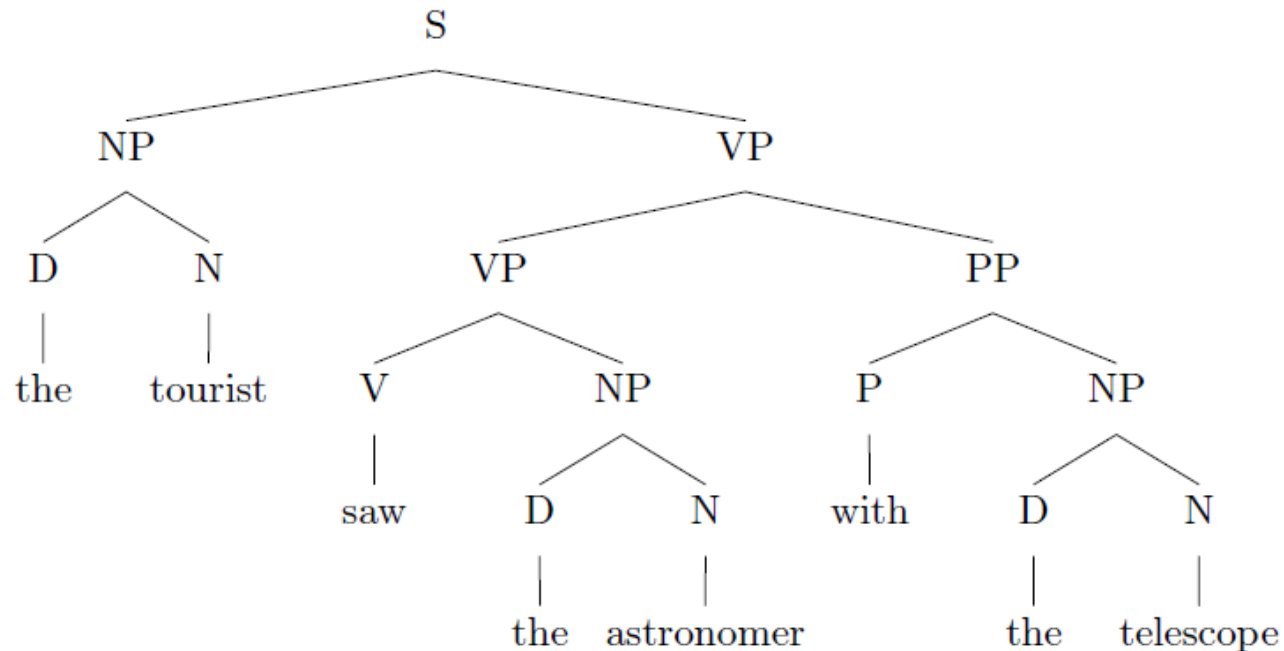
**The tourist saw the astronomer with the telescope.**

could mean either of the following things:

1. The tourist used the telescope to see the astronomer.
2. The astronomer that the tourist saw had a telescope.

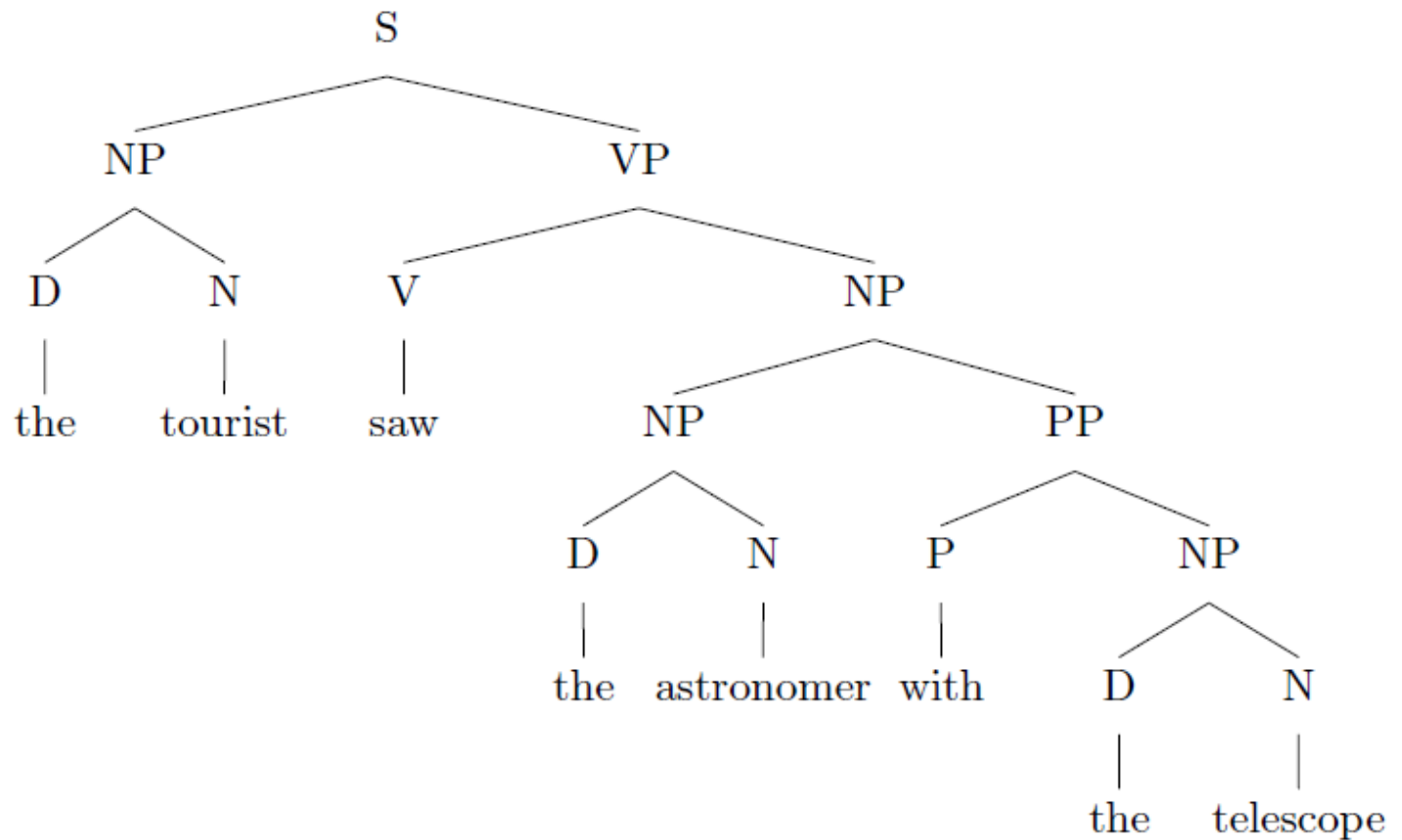
# STRUCTURAL AMBIGUITY

The difference is whether the prepositional phrase (PP) *with the telescope* is grouped with *saw the astronomer* or just *the astronomer*. We can use tree diagrams to show this difference. (Note that these trees require building blocks beyond the set given above.)



‘The tourist used the telescope to see the astronomer.’

# STRUCTURAL AMBIGUITY



‘The astronomer that the tourist saw had a telescope.’



## Anomaly: No Sense and Nonsense

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F&R next discuss phrases which are syntactically correct but don't quite make sense. The semantics of the component words don't fit together.

Ex: That bachelor is pregnant.

Colorless green ideas sleep furiously.

"There are other sentences that sound like English sentences but make no sense at all because they include words that have no meaning: they are UNINTERPRETABLE"

Ex: 'Twas brillig, and the slithy toves

Did gyre and gimble in the wabe;

All mimsy were the borogoves,

And the mome raths outgabe.



## Idioms

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an expression in the usage of a language that is peculiar to itself in having a meaning that cannot be derived from the conjoined meanings of its elements

EX: eat one's hat

let one's hair down

put one's foot in one's mouth

Idioms cannot usually be grammatically changed.

Ex: She put her foot in her mouth. cannot usually be changed to Her foot was put in her mouth by her.

Also they often break the rules on combining semantic properties. Ex: the object of 'eat' usually must have the semantic property[+ edible]

eat your heart out and

he ate his hat disobey this





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# The meaning of Words (Lexical Semantics)

# Semantic Properties



**The assassin was stopped before he got to the president.**

They then say that the meaning of the word assassin includes information such as the fact that the subject is a human, that he/she is a murderer and that he/she kills important people.

"The meaning of all nouns, verbs, adjectives, adverbs - the "content words" - and even some of the "function words" such as 'with' or 'over' can at least partially be defined by such properties, or **SEMANTIC FEATURES**."



# How can we describe the meaning of different words?

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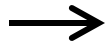
- Three types of semantic analysis:
  - Words as ‘containers’ → *Semantic features*
  - ‘roles’ they fulfill → *Semantic roles*
  - ‘relationship’ with other words → *lexical relation*



# Semantic features

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- Syntactically correct sentences but semantically odd.
  - *The hamburger ate the man.*
  - *My cat studies linguistics.*
  - *The table listens to the radio*
- This relates to the conceptual components of the words ‘hamburger, cat & table’ *not human.*





# Semantic Features

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- Semantic properties: The components of meaning of a word.
- Meaning as collection of properties/features typically with two possible values (+ / -)
- Example of componential analysis:  
*baby* is [+ young], [+ human], [+animate]



## Semantic Features

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	<i>table</i>	<i>horse</i>	<i>boy</i>	<i>man</i>	<i>girl</i>	<i>woman</i>
<i>animate</i>	−	+	+	+	+	+
<i>human</i>	−	−	+	+	+	+
<i>female</i>	−	−	−	−	+	+
<i>adult</i>	−	+	−	+	−	+

# Identify the features



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1. (a) widow, mother, sister, aunt, maid

(b) widower, father, brother, uncle

→ The (a) and (b) words are [+ human]

→ The (a) words are [+ female]

→ The (b) words are [+ male]

2. (a) bachelor, paperboy, pope, chief

(b) bull, rooster, drake, ram

→ The (a) and (b) words are [+ male]

→ The (a) words are [+ human]

→ The (b) words are [+ animal]

Meanings of words can be thought of as lists of semantic properties:

actress baby girl bachelor courage

+human +human +human +human .....

+female ..... +female -female .....

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. +young +young -young .....

. . . . +abstract

Some useful properties which help describe the meaning of verbs:

Semantic Properties Verbs

+motion bring, fall, plod ...

+contact hit, kiss, touch ...

+creation build, imagine, make ...

+sense see, hear, feel ...

slips of the tongue errors in which the speaker says a mixture of two words with similar semantic features are some evidence for the existence of semantic properties.





# Semantic roles

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- Words are described according to the roles they fulfill with the situation described in a sentence.
  - The boy *kicked* the ball
    - verb indicates action
    - Boy → performs the action= **agent**
    - Ball→ undergoes the action= **theme**
- The NPs describe the role of entities (people or things) involved in the action, i.e. they have certain semantic (or thematic) roles.



# Semantic Roles

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- *Agent*= the entity that performs the action
- *Theme*= the entity that undergoes the action
- *Experiencer*= one who perceives something
- *Instrument*= an entity used to perform an action
- *Location*= the place where the action happens
- *Source*= the place from which an action originates
- *Goal*= the place where the action is directed





# Lexical relations

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- What is the meaning of ‘big’?
  - ‘Large’ or the opposite of ‘small’
- What is the meaning of ‘daffodil’?
  - A kind of flower
- Analysis in terms of lexical relations- *explain the meaning in terms of the relationship with other words*
  - Synonymy
  - Antonymy
  - Hyponymy
  - Prototype
  - Homophones and Homonyms
  - Polysemy



# Synonymy

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- **Synonymy**: words that have the same meanings or that are closely related in meaning
- E.g. answer/reply – almost/nearly – broad/wide – buy/purchase – freedom/ liberty
- ‘sameness’ is not ‘total sameness’- only one word would be appropriate in a sentence.
  - E.g. *Sandy only had one answer correct on the test.* (but NOT reply)
- Synonyms differ in formality
  - E.g buy/purchase – automobile/car



# Antonymy

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- **Antonymy**: words that are opposites in meaning, e.g. hot & cold.
- Types
- *Gradable*= not absolute, question of degree
  - Hot & cold – small & big
- *Non-gradable*:
  - Dead & alive – asleep & awake

E.g.            happy/sad                                    married/single  
                  present/absent                            fast/slow



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## **Relational Antonyms**

Spend/earn

Employer/employee

## **Reverse**

Pack/unpack

Dress/undress



# Synonymy & Antonymy

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## Synonymy or Antonymy

- |                        |            |
|------------------------|------------|
| ■ Flourish – thrive    | a. synonym |
| ■ Intelligent – stupid | b. antonym |
| ■ Casual – informal    | c. synonym |
| ■ deep-profound        | d. synonym |
| ■ Buy-sell             | e. antonym |
| ■ Sofa – couch         | f. Synonym |
| ■ Hide – conceal       | g. Synonym |
| ■ Tie-untie            | h. Antonym |
| ■ Rich - wealthy       | i. Synonym |





# Hyponymy

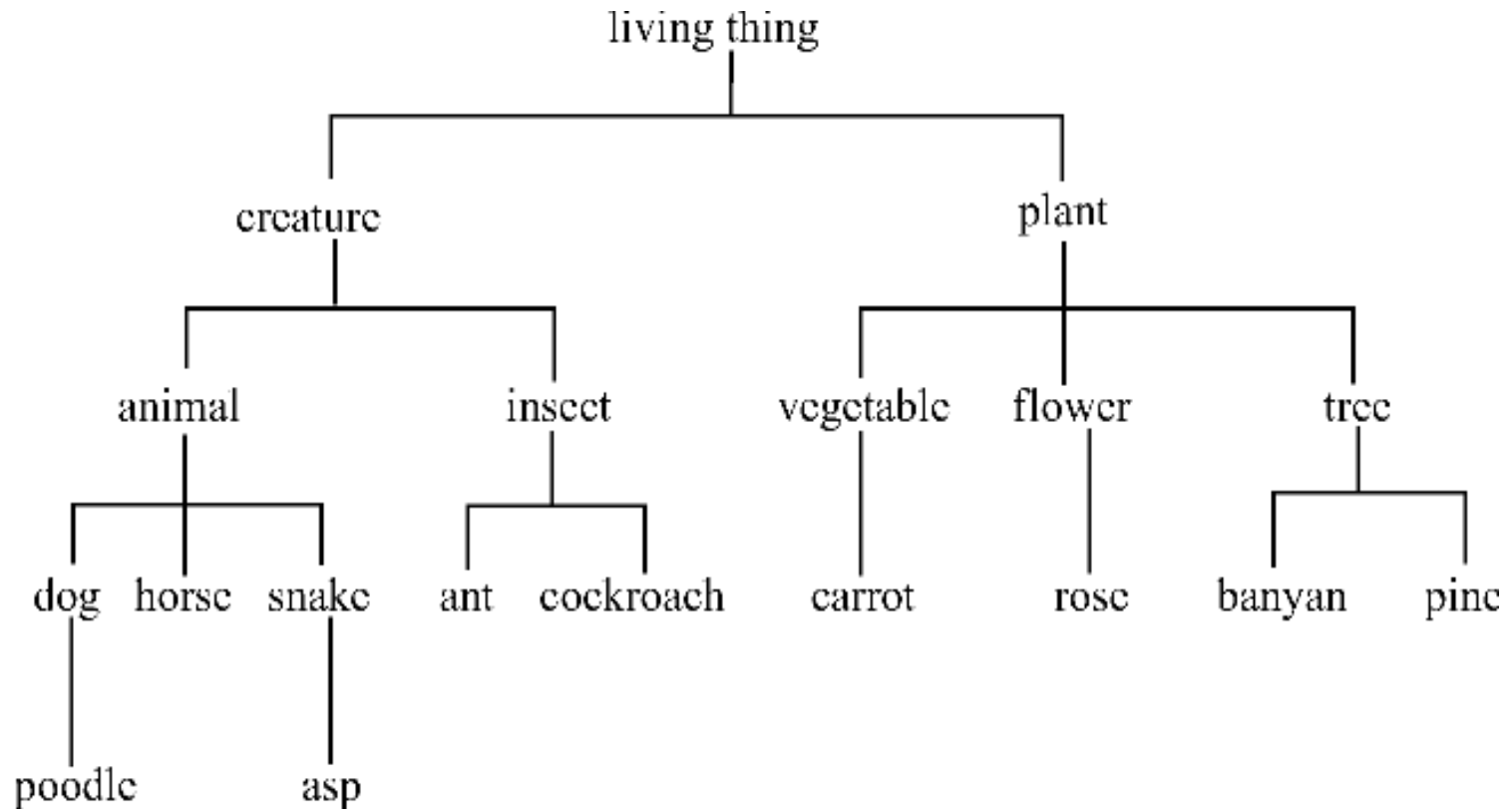
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- **Hyponymy**: Words whose meanings are specific instances of a more general word, i.e. *one thing is included (kind of) in another thing*.
  - e.g. cats and dogs are hyponyms of the word animal.
- In this case cats and dogs are co-hyponyms share the same ‘superordinate’
- Other e.g. daffodil & flower / carrot & vegetable / ant & insect



# Hyponymy

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# Homophones and Homonyms

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- **Homonymy:** A word which has two or more entirely distinct (unrelated) meanings,
  - e.g. **bank:** ‘financial institution’ ; ‘of a river’.
  - **Race:** ‘contest of speed’ or ‘ethnic group’
- **Homophony:** Different words pronounced the same but spelled differently,
  - e.g. *two, to* and *too*.
  - *Meat* and *meet*
  - *Right* and *write*



# Polysemy

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- **Polysemy:** A word which has multiple meanings *related by extension*,
  - e.g. *bright*: ‘shining’ ; ‘intelligent’
  - ‘*Head*’ of the body and the person at the top of a company.
  - ‘Foot’ of a body and of a mountain and of the bed or chair.
  - ‘Run’ a person runs, the water runs



# Metonymy and heteronymy

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**Metonymy** is "a figure of speech in which an attribute or commonly associated feature is used to name or designate something." A short definition is "part for whole."

Wall street —————> stock market

Tehran —————> the government of Iran

**Heteronyms** are words with the same meaning but different pronunciations.

Dove /dʌv/ : a kind of bird

/dəʊv/ : pp of dive

Wind /wɪnd/

/waɪnd/



# Collocation

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- Words tend to occur with other words.
- E.g. table/chair
- Butter/bread
- Salt/pepper
- Hammer/ nail



# Sense and Reference

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"Words other than proper names both have a meaning and can be used to refer to objects. The German philosopher and mathematician Gottlob Frege proposed a distinction between the REFERENCE of a word, which is the object designated, and the SENSE of a word, which is the additional meaning.

(Presumably semantic properties fall under the sense of a word.)

These phrases usually have the same reference but different sense.

Ex: The man who is my father / The man who married my mother

Also phrases may have no reference yet still have sense.

Ex: The present King of France is bald.

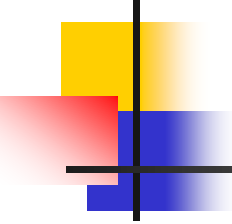
(there is no present king of France)



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# Pragmatics





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**Pragmatics** is the study of language in communication, particularly the relationship between sentences and the context and situations in which they are used.

**Context**

Linguistic

Discourse

Situational →



## Cooperative Principle

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H. P. Grice said that we should be communicative, relevant, brief, and truthful.

**QUANTITY:** Say neither more nor less than the discourse requires.

**RELEVANCE:** Be relevant.

**MANNER:** Be brief and orderly; avoid ambiguity and obscurity.

**QUALITY:** Do not lie; do not make unsupported claims.

**NOTE:** The characters we remember both from literature and from real life are the ones who violate these principles.



# DEIXIS

Deictic words get their meanings from the time, the place, or the persons in the context:

**TIME:** after, before, last week, next April, now, seven days ago, then, that time, this time, tomorrow, two weeks from now...

**PLACE:** back, before, behind, front, here, left, right, that place, there, these parks, this city, those towers over there, yonder mountains...

**PERSON:** he, her, hers, him, his, I, it, me, mine, our, ours, she, their, they, them, us, we, you, your, yours...



# Speech acts

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An utterance as a functional unit in communication

## **Types of meaning in Speech Act Theory**

Locutionary/propositional meaning

Illocutionary meaning

Perlocutionary meaning

Commissives (Affect Speaker, Subjective)

TYPES: Oath, Offer, Promise

Declaratives (Change the Macrocosmic Social World)

TYPES: Baptism, Marriage

Directives (Change the Microcosmic Social World)

TYPES: Command, Request

Expressives (Feelings of Speaker)

Apology, Thanks      TYPES:

Interrogatives (Hearer Knows Best)

TYPES: Closed (yes-no), Loaded, Open

Imperatives (Directives) (Affect Hearer)

TYPES: Request, Requirement, Threat, Warning

Performatives (Affect world)

TYPES: Agreement, Appointment, Baptism, Declaration of Independence, Dedication, Marriage

Representatives (Objective Descriptive Statements)

TYPES: Statement that is either True or False