

Word-order typology

LING 20: Introduction to Linguistic Analysis

UCLA · Winter 2022

Word-order variation

ENGLISH, SPANISH, MANDARIN, SWAHILI:

I ♡ LA

Word-order variation

ENGLISH, SPANISH, MANDARIN, SWAHILI:		♡	LA
JAPANESE, KOREAN, HINDI-URDU, GERMAN:		LA	♡

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WELSH, CLASSICAL ARABIC, TAGALOG:	♡	I	LA

Word-order variation

ENGLISH, SPANISH, MANDARIN, SWAHILI:	I	♥	LA
JAPANESE, KOREAN, HINDI-URDU, GERMAN:	I	LA	♥
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MALAGASY, KAQCHIKEL, ZOQUE:	♥	LA	I

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HIXKARYANA:

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NADĚB:	LA	♥	I

Frequency

SOV:	564
SVO:	488
VSO:	95
VOS:	25
OVS:	11
OSV:	4
<i>Lacking a dominant word order:</i>	189
<hr/>	
Total:	1376

Matthew S. Dryer. 2013. 'Order of Subject, Object and Verb.' In: Dryer, Matthew S. & Haspelmath, Martin (eds.): *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. (Available online at <http://wals.info/chapter/81>)

Word-order regularities

In 1963, Joseph Greenberg published a paper that compared a large variety of languages and that found certain correlations in the word order of different phrases.

Some languages put the object before the verb. Japanese is an example:

- (1) Sono otokonoko-ga shooyoosei-o butta.
that boy-NOM elf-ACC hit
'That guy hit an elf.'

VO vs. OV

Some languages put the object before the verb. Japanese is an example:

- (1) Sono otokonoko-ga shooyoosei-o butta.
that boy-NOM elf-ACC hit
'That guy hit an elf.'

- **English:** VP → V DP
- **Japanese:** VP → DP V

Correlation 1

If a language is VO, then it puts its prepositions before the noun phrase it combines with. If it is OV, then it puts its postpositions after the noun phrase it combines with.

- (2) Sono otokonoko-ga booshi de shooyoosei-o butta.
that boy-NOM hat with elf-ACC hit
'That guy hit an elf with a hat.'

Correlation 1

If a language is VO, then it puts its prepositions before the noun phrase it combines with. If it is OV, then it puts its postpositions after the noun phrase it combines with.

- (2) Sono otokonoko-ga booshi de shooyoosei-o butta.
that boy-NOM hat with elf-ACC hit
'That guy hit an elf with a hat.'

- **English:** PP → P DP
- **Japanese:** PP → DP P

Correlation 2

If a language is VO, then its complementizers precede the sentence they combine with. If a language is OV, then the complementizer follows the sentence it combines with.

- (3) Mary-ga oyog-ana-katta to
Mary-NOM swim-not-past C
'that Mary did not swim'

Correlation 2

If a language is VO, then its complementizers precede the sentence they combine with. If a language is OV, then the complementizer follows the sentence it combines with.

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- **English:** CP \rightarrow C S
- **Japanese:** CP \rightarrow S C

Correlation 3

If a language is VO, then PPs follow the VP they modify. If the language is OV, then PPs precede their VP.

- (4) Mary-ga Kyoto ni itta.
Mary-NOM Kyoto to went
'Mary went to Kyoto.'

Correlation 3

If a language is VO, then PPs follow the VP they modify. If the language is OV, then PPs precede their VP.

- (4) Mary-ga Kyoto ni itta.
 Mary-NOM Kyoto to went
 'Mary went to Kyoto.'

- **English:** VP → VP PP
- **Japanese:** VP → PP VP

PP recursion in Japanese

(5)

Mary-ga [densha de] [ni-ji ni] [Tokyo kara]

Mary-NOM train by 2-o'clock at Tokyo from

[Kyoto ni] itta.

Kyoto to went

'Mary went to Kyoto from Tokyo at 2 o'clock by train.'

Correlation 4

If a language is VO, then PPs that modify NPs follow the N. If a language is OV, then PPs that modify NPs precede the N.

- (6) Shooyoosei-ga [sono genkina gakusei no] atarashi
elf-NOM that spunky student of new
kuruma-o tatakikowashita.
car-ACC destroyed
'An elf destroyed the new car of that spunky student.'

Correlation 4

If a language is VO, then PPs that modify NPs follow the N. If a language is OV, then PPs that modify NPs precede the N.

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kuruma-o tatakikowashita.
car-ACC destroyed
'An elf destroyed the new car of that spunky student.'

- **English:** NP → NP PP
- **Japanese:** NP → PP NP

Summary

English:

- $VP \rightarrow V DP$
- $PP \rightarrow P DP$
- $CP \rightarrow C S$
- $VP \rightarrow VP PP$
- $NP \rightarrow NP PP$

Japanese:

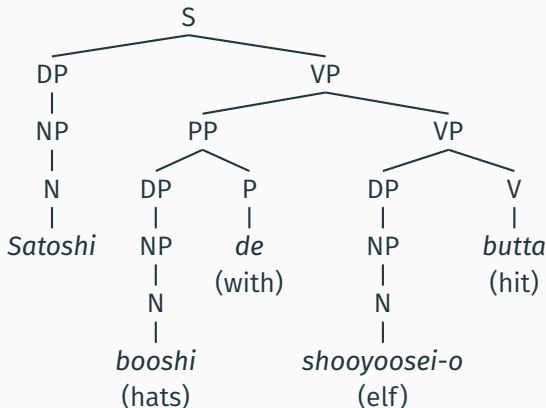
- $VP \rightarrow DP V$
- $PP \rightarrow DP P$
- $CP \rightarrow S C$
- $VP \rightarrow PP VP$
- $NP \rightarrow PP NP$

Japanese clause structure

- (7) Satoshi booshi de shooyoosei-o butta.
Satoshi hat with elf-ACC hit
'Satoshi hit an elf with a hat.'

Japanese clause structure

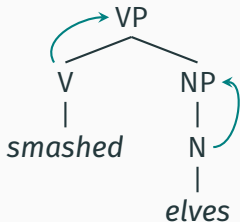
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Heads

Terminology: Head

The **HEAD** of a phrase is the terminal element from which that phrase gets its grammatical-category label.



- N is the head of NP
- V is the head of VP

Hypothesis: Head parameter

- Phrase-structure rules conform to the following “templates”:
 - $S \rightarrow DP VP$
 - $XP \rightarrow HEAD YP$

or

$XP \rightarrow YP HEAD$
- Languages with ‘ $XP \rightarrow HEAD YP$ ’ are called **HEAD-INITIAL**.
- Languages with ‘ $XP \rightarrow YP HEAD$ ’ are called **HEAD-FINAL**.

Taking stock

If we limit ourselves to the order between subject (S), verb (V), and object (O), we get four options:

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1. $S \rightarrow DP\ VP$
 $VP \rightarrow V\ DP$

2.

3.

4.

Taking stock

If we limit ourselves to the order between subject (S), verb (V), and object (O), we get four options:

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Taking stock

If we limit ourselves to the order between subject (S), verb (V), and object (O), we get four options:

1.	$S \rightarrow DP\ VP$ $VP \rightarrow V\ DP$	SVO	(48%)
2.	$S \rightarrow DP\ VP$ $VP \rightarrow DP\ V$	SOV	(41%)
3.	$S \rightarrow VP\ DP$ $VP \rightarrow V\ DP$	VOS	(2%)
4.	$S \rightarrow VP\ DP$ $VP \rightarrow DP\ V$	OVS	(0.9%)

Taking stock

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4.	$S \rightarrow VP\ DP$ $VP \rightarrow DP\ V$	OVS	(0.9%)

The rule ' $S \rightarrow DP\ VP$ ' is **much** more frequent than ' $S \rightarrow VP\ DP$ '.

Taking stock

1.	$S \rightarrow NP VP;$ $VP \rightarrow V NP$	SVO	(48%)
2.	$S \rightarrow NP VP;$ $VP \rightarrow NP V$	SOV	(41%)
3.	$S \rightarrow VP NP;$ $VP \rightarrow V NP$	VOS	(2%)
4.	$S \rightarrow VP NP$ $VP \rightarrow NP V$	OVS	(0.9%)
5.	???	VSO	(8%)
6.	???	OSV	(0.3%)

Taking stock

- The remaining two orders (VSO and OSV) cannot be produced by just manipulating the order of elements in our phrase-structure rules.
- These orders are typically thought of as being produced by **movement** from a different underlying order.

“Free word order”

In English, the relative order between elements is often (largely) fixed:

- (8) a. The students were reading that book at 2 o'clock.
- b. *The students were that book reading at 2 o'clock.
- c. *The students that book were reading at 2 o'clock.

“Free word order”

In other languages, like Japanese, word order is more flexible:

- (9) a. Gakusei-ga ni-ji ni sono hono-o yonda.
 students-NOM 2 o'clock at that book-ACC read
- b. Gakusei-ga sono hono-o ni-ji ni yonda.
 students-NOM that book-ACC 2 o'clock at read
- c. Sono hono-o gakusei-ga ni-ji ni yonda.
 that book-ACC students-NOM 2 o'clock at read

Word order and movement

- The flexible word order of Japanese is the result of **movement**.
- Unlike what we saw for English, movement can target elements other than question words in Japanese.
- The phrase-structure rules of Japanese produce SOV sentences. Movement can then place the object in a different position.

Word order and movement

- (10) Gakusei-ga ni-ji ni **sono hono-o** yonda.
students-NOM 2 o'clock at that book-ACC read
- (11) Gakusei-ga **sono hono-o** ni-ji ni ____ yonda.
students-NOM that book-ACC 2 o'clock at read
- (12) **Sono hono-o** gakusei-ga ni-ji ni ____ yonda.
that book-ACC students-NOM 2 o'clock at read

Summary:

- Languages differ in their basic clausal word order, but there are systematic regularities.
- Head-initial languages: $XP \rightarrow X YP$
- Head-final languages: $XP \rightarrow YP X$
- Certain basic orders (VSO and OSV) and so-called “free” orders are derived via movement rules.

Semantics & pragmatics

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Overview

- **Phonetics:**

How are sounds articulated?

- **Phonology:**

How are sounds organized and manipulated?

- **Morphology:**

How are words built up from morphemes?

- **Syntax:**

How are sentences formed from words?

- **Semantics & pragmatics:**

How do we compute the meanings of linguistic expressions?

Founders of modern semantics



Richard Montague

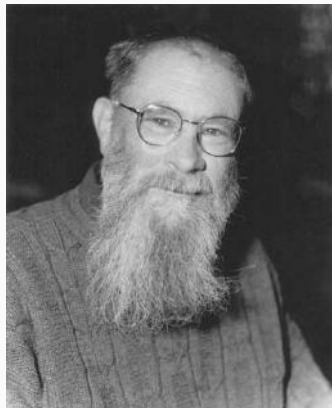


Barbara H. Partee

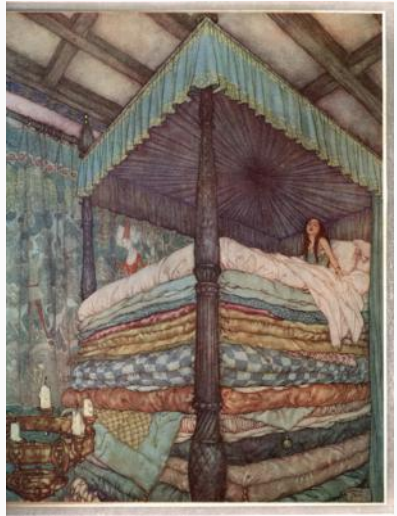
Meaning is as meaning does

“In order to say what a meaning is,
we may first ask what a meaning
does, and then find something that
does that.”

—David Lewis in *“General Semantics”*



Meaning and images



A picture of ... ?



A picture of ... ?

- George Washington crossing the Delaware River.



A picture of ... ?

- George Washington crossing the Delaware River.
- George Washington crossing the Rio Grande.



A picture of ... ?

- George Washington crossing the Delaware River.
- George Washington crossing the Rio Grande.
- King George stealing the flag.

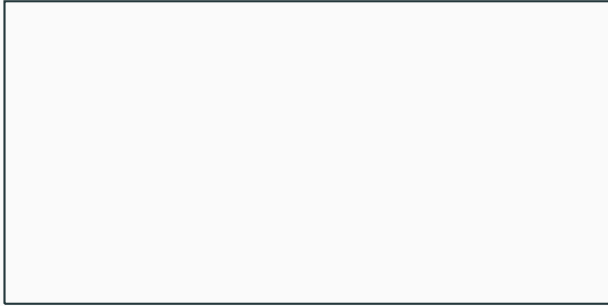


A picture of ... ?

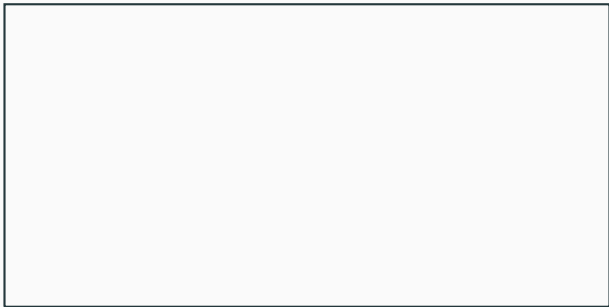
- George Washington crossing the Delaware River.
- George Washington crossing the Rio Grande.
- King George stealing the flag.
- Rich white man making the poor do all the work.



Lichtenberg's knife



Lichtenberg's knife



A knife without a blade, for which the handle is missing.

Knowing the meaning of a sentence

- **Social appropriateness:**

“That’s wonderful.” vs. “That kicks ass!”

Knowing the meaning of a sentence

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“That’s wonderful.” vs. “That kicks ass!”

- **Emotional content:**

“I disagree with Dave.” vs. “Dave is a damn fool!”

Knowing the meaning of a sentence

- **Social appropriateness:**

“That’s wonderful.” vs. “That kicks ass!”

- **Emotional content:**

“I disagree with Dave.” vs. “Dave is a damn fool!”

→ **Information content:**

The information about the world that the sentence conveys.

Grammar and possibilities

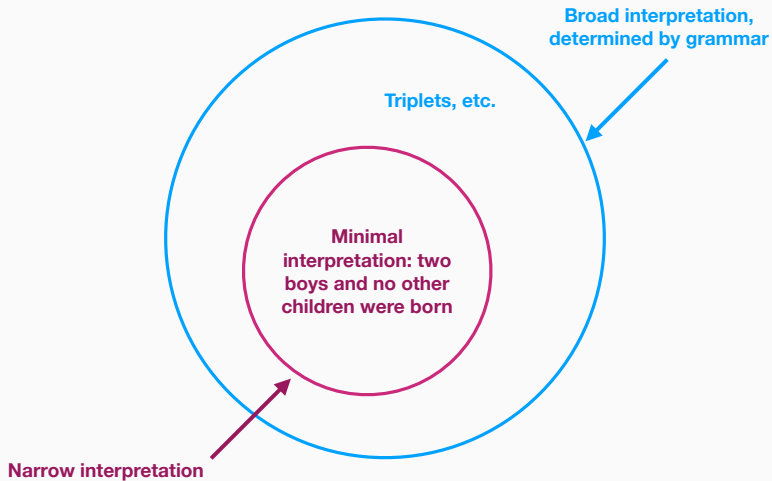
- Grammar enables us to go beyond the actual and talk about the merely possible.
- Grammar interacts with many knowledge resources to stake out **ranges of possibilities**.

An old riddle

Two children were born on the same day, in the same year, to the same mother, but they were not twins. How can this be?

Triplets!



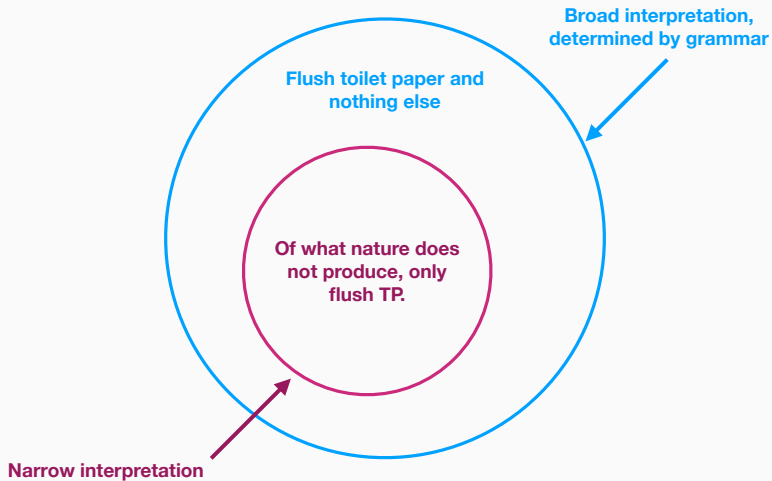


- (1) Sam ate only a sandwich.
⇒ *Sam ate a sandwich and nothing else.*

- (2) Only Sam ate a sandwich.
⇒ *Sam ate a sandwich and no one else ate a sandwich.*

Only toilet paper ... ?





Eliminating possibilities

- **Grammar determines broad interpretations.**
- Narrow interpretations come from interactions with non-linguistic knowledge resources: presumptions about cooperative interaction, presumptions about the normal course of events, etc.
- Narrow interpretations can always be challenged.
- Broad interpretations can always be pushed for.

Information content

- **Asserted content:**

The content that is explicitly added to the discourse by the utterance of a sentence.

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The background information taken for granted by the utterance of a sentence.

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The content that is explicitly added to the discourse by the utterance of a sentence.

- **Presupposed content:**

The background information taken for granted by the utterance of a sentence.

- **Implicated content:**

Those things that are not explicitly asserted or presupposed by the utterance of a sentence, but which the speaker intends the addressee to conclude.

Example: Ways of conveying information

(3) *Person A*: How did Maria's physical go?

Person B: Well, she's stopped smoking.

- **Asserts:** Maria has stopped smoking.
- **Test:** "Maria stopped smoking" is true if and only if Maria stopped smoking.

Example: Ways of conveying information

(3) *Person A*: How did Maria's physical go?

Person B: Well, she's stopped smoking.

- **Presupposes:** Maria has been smoking.
- **Test:**
 - “Maria stopped smoking” can only be true if Maria has been smoking.
 - “Maria **didn't** stop smoking” can only be true if Maria has been smoking.

Example: Ways of conveying information

(3) *Person A*: How did Maria's physical go?

Person B: Well, she's stopped smoking.

- **Implicates**: Maria's physical didn't go well.
- **Test**: "Maria stopped smoking, but she did fine on her physical" is logically consistent.

Example: Ways of conveying information

(4) *Person A*: How did Maria's physical go?

Person B: Well, she's stopped smoking.

1. **Asserts**: Maria has stopped smoking.
2. **Presupposes**: Maria has been smoking.
3. **Implicates**: Maria's physical didn't go well.

Case study: Homework

(5) *Joe*: Are you going to the party tonight?

Sue: I have to do my linguistics homework.

- **Implicature:**

Sue is not going to the party tonight.

- **Test:**

“I have to do my linguistics homework, and I’m going to the party tonight” is logically consistent.

Case study: Tonal sounds

(6) *Joe*: Did Sarah sing at the party?

Sue: She made a series of tonal sounds with her mouth.

- **Implicature:**

Sarah's singing at the party was horrible.

- **Test:**

"She made a series of tonal sounds with her mouth, and it was sublime and beautiful" is logically consistent.

Implicatures depend on the context

(7) *Joe*: Are you going to the party tonight?

Sue: I have to do my linguistics homework.

~> *Sue is not going to the party.*

(8) *Joe*: What are you doing this weekend?

Sue: I have to do my linguistics homework.

~> *Does **not** carry the implicature*

The Gricean Theory of implicatures

- In 1967, H.P. Grice introduced his theory of conversational implicature.
- He was the first to clearly identify the phenomenon.
- While most current theories depart from it in important ways, Grice's classical account remains very influential.

The Cooperative Principle

The key assumption underlying Grice's theory is that in rational conversation, people are cooperative:

(9) **The Cooperative Principle:**

Make your contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.

Gricean Maxims

- On its own, the Cooperative Principle is rather vacuous. It just says “be cooperative”.
- All the punch to Grice’s theory lies in the way in which he spells out **what it means to be cooperative**:
 - Maxim of Relation
 - Maxim of Quality
 - Maxim of Quantity
 - Maxim of Manner

Maxim of Relation

(10) **The Maxim of Relation (Relevance):**

Be relevant.

In plain language: People don't just make random statements. There's generally some topic of conversation, and people's statements are relevant to that topic.

Example: Maxim of Relation

Person D is not behaving cooperatively:

(11) *Person A:* How about that test yesterday?

Person B: Yeah, Q3 was really hard!

Person C: I thought that Q5 was kind of ambiguous!

Person D: My aunt had her gall bladder removed!

Maxim of Quality

(12) **The Maxim of Quality:**

- a. Do not say what you believe to be false.
- b. Do not say that which you lack adequate evidence for.

In plain language: People don't assert something if either they know that it's false, or they have no idea whether or not it's true.

Example: Maxim of Quality

Person B is not behaving cooperatively:

(13) *Person A:* I need to know the capital of North Dakota.

Person B: Oh, it's Fargo.

Person A: Amazing! How did you know that?

Person B: Oh, I don't know that. I have know idea what the capital is.

Person A: Well, do you know the capital of South Dakota?

Person B: Sure, it's Sioux Falls.

Person A: Really?

Person B: No way.

Maxim of Quantity

(14) **The Maxim of Quantity:**

- a. Make your contribution to the conversation as informative as required.
- b. Do not make your contribution more informative than is required.

In plain language: People will provide as much information as they can without violating the other maxims.

Example: Maxim of Quantity

Person B is not behaving cooperatively:

(15) *Person A:* What are your parents' names?

Person B: Irene.

(16) *Person A:* How did class go today?

Person B: Well, the slides had a green background, the person next to me was eating a banana and the person two rows away from them was eating cashews. We started off by talking about Grice's four maxims, but before that we looked at a picture of a turtle and a rabbit, and another of a woman in a very tall bed. The blankets on the bed were blue, yellow, green....

Maxim of Manner

(17) **The Maxim of Manner:**

- a. Avoid obscurity of expression.
- b. Avoid ambiguity.
- c. Be brief
- d. Be orderly.

In plain language: People do not use overly circuitous language to express simple ideas. People put a sequence of utterances in some kind of 'logical order'.

Example: Maxim of Manner

Person B is not behaving cooperatively:

(18) *Person A:* What are you eating?

Person B: Wheat seeds crushed into a powder, mixed with water and bacteria, and then submitted to high temperature.

Example: Maxim of Manner

Person B is not behaving cooperatively:

(19) *Person A:* What did you do this weekend?

Person B: When I got picked to sit next to the king at Medieval Times, I threw up all over him. When I went to bed that night, I slept with his crown on my head. On Sunday, I went with my father to Medieval Times. When the king was bent over helping me, I stole his crown. I got really sick from the chicken.

Maxims beyond conversation

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- **Quantity:** If I ask for a chisel, you will hand me 1, and not 3.

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- **Quality:** If I ask for some nails, you won't hand me bent and rusted ones.
- **Quantity:** If I ask for a chisel, you will hand me 1, and not 3.
- **Manner:** If I ask for a chisel, you will hand one as directly as possible, and not by walking around the house 5 times first.

Gricean reasoning for deriving implicatures

A conversational implicature is an inference which arises from and is validated by:

- The fact that the speaker uttered a sentence S with asserted content P.
- The assumption that the speaker is observing the conversational maxims.
- Possibly, certain background facts drawn from general world knowledge.

Case study: Homework

(5) *Joe*: Are you going to the party tonight?

Sue: I have to do my linguistics homework.

- **Implicature:**

Sue is not going to the party tonight.

- **Test:**

“I have to do my linguistics homework, and I’m going to the party tonight” is logically consistent.

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- Sue has said only that she has to do her semantics homework.
- **Sue is following the Maxim of Relevance**, and so her utterance is relevant to answering the question at hand, which is “Are you going to the party or not?”
- Therefore, since she is being relevant, Sue intends her utterance to convey an answer to that question.

Case study: Homework

- Sue has said only that she has to do her semantics homework.
- **Sue is following the Maxim of Relevance**, and so her utterance is relevant to answering the question at hand, which is “Are you going to the party or not?”
- Therefore, since she is being relevant, Sue intends her utterance to convey an answer to that question.
- **The fact that Sue has to do homework is only relevant to the question at hand *if her homework conflicts with the party*.** (After all, if there were no conflict, why would she mention it at all?)

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- Therefore, by making her statement, Sue intends to convey that her doing her semantics homework conflicts with the party.
- Therefore, Sue cannot come to the party.

All about the assumptions

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- This reasoning relies on the assumption that Sue having to do homework is only relevant to the question at hand if her homework conflicts with the party.
- If we drop this assumption, the reasoning no longer goes through, and the implicature is not generated!
- **Consider:** Sue finds homework really grueling, and so she parties every night that she finishes an assignment. If we make this assumption, then her utterance carries the opposite implicature that she *is* coming to the party.

Case study: Tonal sounds

(6) *Joe*: Did Sarah sing at the party?

Sue: She made a series of tonal sounds with her mouth.

- **Implicature:**

Sarah's singing at the party was horrible.

- **Test:**

"She made a series of tonal sounds with her mouth, and it was sublime and beautiful" is logically consistent.

Case study: Tonal sounds

- Sue has said only that Sarah made a series of tonal sounds with her mouth.
- **Sue is following the Maxim of Relevance**, and so her utterance is relevant to answering the question at hand, which is “Did Sarah sing at the party?”
- Therefore, Sue intends her utterance to convey an answer to that question.
- Making a series of tonal sounds with the mouth is (essentially) the act of singing.
- **Sue is following the Maxim of Manner**, and so her utterance was as brief as possible.
- If Sue had simply said that “Sarah sang”, she would have made an even briefer statement (and one which was also relevant).

Case study: Tonal sounds

- Since Sue **didn't** make this briefer statement, **it must be because such a statement would violate some other maxim (i.e. Quality).**
- Therefore, it must be that Sue believes that “Sarah sang” is false or otherwise misleading.
- Given that Sue has asserted that Sarah **did** make a series of tonal sounds with her mouth, it must be that this act somehow fell short of a true act of singing.
- One obvious way in which such an act would not qualify as ‘singing’ is if it were simply so bad that one might wonder whether the act was signing at all (rather than just making random sounds).
- Therefore, Sarah might have sang at the party, but it was so bad that Sue doubts whether it could qualify as signing. Thus, Sarah sang very badly.

Diagnostic: Cancellability / Defeasibility

Test: “S and not I” is consistent (S=sentence, I=inference)

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(20) *Joe*: Are you going to the party tonight?

Sue: I have to do my linguistics homework. **But I can come afterwards.**

Diagnostic: Cancellability / Defeasibility

Test: “S and not I” is consistent (S=sentence, I=inference)

(20) *Joe*: Are you going to the party tonight?

Sue: I have to do my linguistics homework. **But I can come afterwards.**

(21) *Joe*: Is Alex a good student?

Sue: He has nice handwriting. **And yes, he's the best student in class.**

Diagnostic: Reinforceability

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Test: “S and I” is not redundant (S=sentence, I=inference)

(22) *Joe*: Are you going to the party tonight?

Sue: I have to do my semantics homework. **So, no I can't come.**

Diagnostic: Reinforceability

Test: “S and I” is not redundant (S=sentence, I=inference)

(22) *Joe*: Are you going to the party tonight?

Sue: I have to do my semantics homework. **So, no I can't come.**

(23) *Joe*: Is Alex a good student?

Sue: He has nice handwriting. **But, he's the worst student in class.**

Compare to asserted content

(24) **Cancellability:**

Joe: Is Alex a good student?

Sue: He has nice handwriting. **#But his penmanship is horrific.**

(25) **Reinforceability:**

Joe: Is Alex a good student?

Sue: He has nice handwriting. **#And his penmanship is nice.**

(# = infelicitous / inappropriate / odd)

The puzzle of 'or'

- Sentences of the form “ S_1 **and** S_2 ” are true iff S_1 and S_2 are both independently true:

(26) [S_1 Rose dances] **and** [S_2 Blanche sings].

The puzzle of 'or'

- Sentences of the form “ S_1 **and** S_2 ” are true iff S_1 and S_2 are both independently true:

(26) [S_1 Rose dances] **and** [S_2 Blanche sings].

- But consider sentences of the form “ S_1 **or** S_2 ”:

(27) [S_1 Rose dances] **or** [S_2 Blanche sings].

(28)

S_1	S_2	S_1 or S_2
False	False	False
True	False	True
False	True	True
True	True	??

The puzzle of 'or'

Examples where it seems to be true:

- (29) It's going to rain, so I suggest that you take an umbrella, or you take a raincoat.
- (30) Mark and Sue both love to make hotdishes. So, at the potluck, Mark will bring a hotdish, or Sue will.
- (31) Would you like cream or sugar?
- (32) I'd like to marry a man who is rich or handsome.

The puzzle of 'or'

Examples where it seems to be false:

- (33) With your entrée, you may have rice or you may have potatoes.
- (34) (*Said by kidnappers.*) You will pay us 1 million dollars, or the president will die.
- (35) Would you like coffee or tea?
- (36) Mary has a dog or a cat.

The puzzle of 'or'

- Why do we sometimes think “ S_1 or S_2 ” is true if both are true, and sometimes we think it's false?
- Let's explore the idea that “ S_1 **or** S_2 ” has the implicature that “ S_1 **and** S_2 ” is false.

Testing 'or' for an implicature

(37) **Defeasibility:**

You will pay us 1 million dollars, or the president will die.
In fact, both might happen! *(seems consistent)*

(38) **Reinforceability:**

You will pay us 1 million dollar, or the president will die.
But not both (we promise)! *(doesn't seem redundant)*

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But not both (we promise)! *(doesn't seem redundant)*

→ **The inference is an implicature!**

Gricean reasoning for the implicature of 'or'

- The speaker has said only that they will take the money **or** the president will die.
- **The speaker is following the Maxim of Quantity.** Therefore, their statement was 'as informative as possible without breaking the other maxims'.
- If the speaker had instead said "You will pay us the money **and** we will kill the president", they would have made a more informative statement.
- Since the speaker didn't say "you will pay us the money **and** we will kill him/her", **it follows that such an utterance would have broken a maxim (namely, Quality).**

Gricean reasoning for the implicature of 'or'

- Therefore, it must be that the speaker believes that “you will pay us and we will kill him/her” is false or they don’t have enough evidence to assert it.
- **But, the speaker knows whether or not they are going to take the money and kill the president.** Therefore, they must know that “you will pay us and we will kill him” is false.
- Therefore: If we pay them, they won’t kill the president.

Assumptions, again

- This reasoning relies on the assumption that the speaker knows whether or not “ S_1 and S_2 ” is true.
- But our theory also predicts that if that assumption **doesn't** hold in the context, then the implicature in question **won't** be observed.

Assumptions, again

- Consider again the following sentence:

(39) Mark and Sue both love to make hotdishes. So, at the potluck, Mark will bring a hotdish, or Sue will.
- No implicature is generated because the speaker in this context doesn't know who is going to bring a hotdish and so doesn't know whether "Mark and Sue will bring a hotdish" is true or not.

Summary:

- Grammar determines broad interpretations, which can be narrowed based on non-linguistic knowledge resources.
- Information content: asserted, presupposed, implicated.
- Grice's theory derives implicatures from the assumption that people are cooperative, which is formulated in terms of Maxims: Relation, Quality, Quantity, and Manner.
- Implicatures can be cancelled and reinforced.
- Case study: " S_1 or S_2 " has the implicature that " S_1 and S_2 " is false.