pragmatics and discourse

information structure

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slides based on material from I.Kruijff-Korbayová

Information Structure

- Introduction

- Question test for IS

- IS realization

- IS meaning

Illustration (1)

(1)   Sign in London underground:
Dogs must be carried.

Hunde mussen getragen werden.
Einen Hund muss man tragen.

Interpretation:

If you have a dog, you must carry it.

Illustration (2)

(2)   Sign in a synagog:
      Hats must be worn.

(3)   Man muss einen Hut tragen.

(4)   Es mussen Hüte getragen werden.

(5)   Hüte mussen getragen werden.

Interpretation:

(6)   *You must wear a hat.*

Illustration

(7) Dogs must be CARRIED.

Hunde mussen GETRAGEN werden.

(8) # DOGS must be carried.

HUNDE mussen getragen werden.

(9) HÜTE mussen getragen werden.

(10) # Hüte mussen GETRAGEN werden.

(Capitals denote intonation center = main stress in the sentence.)

Illustration

Different languages use various means to realize the different meanings:
e.g., Polish: word order

(11)   *Psy należy*   NIEŚĆ.
Dog must-be carry

Hunde mussen getragen werden.

(12)   # *Należy   nieść* PSY.
Must-be carry dog

Es mussen Hunde getragen werden.

Illustration (4)

Example from a dialogue system:

(13)   U: What is the status of the stove?
       Im welchen Zustand befindet sich die Heizung?

       S: The stove is switched ON.
          Die Heizung ist ANGESCHALTET.

(14)   U: Which device is switched on?
       Was ist angeschaltet?

       S: The STOVE is switched on.
       Die HEIZUNG ist angeschaltet.

Observations

- Intonation, word order, syntactic structure and other aspects of linguistic form are tightly related

- Variation in these aspects of linguistic form is not arbitrary!

- These aspects of linguistic form reflect the relation of the utterance to the context

- Whether an utterance is appropriate or inappropriate in a given context depends not only on **what is said** but also **how**

- Recall: Grice's Maxim of Manner

Illustration (5)

(15) U: What is the status of the stove?
Im welchen Zustand befindet sich die Heizung?

S: It is ON.
Es ist ANGESCHALTET.

(16) U: Which device is switched on?
Was ist angeschaltet?

S: The STOVE.
Die HEIZUNG.

Ellipsis example from the Map Task corpus

(17) G: where are you in relation to the top of the page just now?
      F: Uh, about four inches.
      G: Four inches?
      F: Yeah.
      G: Where are you from the left-hand side?
      F: About two.

Information Structure

- IS concerns a division (partitioning) of an utterance meaning:

  - **Theme** the part which relates it to the purpose of the discourse and anchors the content to the context (i.e., what speaker and hearer are attending to); what the utterance is *about*, the *topic* that the speaker means to address; may also *restrict* the context to aprticular type(s) of situation(s)
  - **Rheme** the part which advances the discourse, i.e., adds or modifies some information (i.e., the informative part); what the speaker says about the Theme, i.e., the Rheme is semantically predicated over the Theme

- IS is an inherent aspect of meaning —it is an important factor in establishing coherence with respect to the context in which a sentence is uttered.

Theme-Rheme Partitioning: Examples

(18)   Dogs must be CARRIED.

$$\underbrace{\text{Hunde}}_{Theme} \quad \underbrace{\text{mussen GETRAGEN werden.}}_{Rheme}$$

(19)   DOGS must be carried.

$$\underbrace{\text{HUNDE mussen getragen werden.}}_{Rheme}$$

Theme-Rheme Partitioning: Examples

(20) U: What is the status of the stove?
Im welchen Zustand befindet sich die Heizung?

S: The stove is switched ON.

$$\underbrace{\text{Die Heizung}}_{Theme} \quad \underbrace{\text{ist ANGESCHALTET.}}_{Rheme}$$

(21) U: Which device is switched on?
Was ist angeschaltet?

S: The STOVE is switched on.

$$\underbrace{\text{Die HEIZUNG}}_{Rheme} \quad \underbrace{\text{ist angeschaltet.}}_{Theme}$$

Theme-Rheme Partitioning: Examples

(22) Das Mädchen kauft eine Bluse.
Theme *Rheme*

(23) Das Mädchen kauft eine Bluse.
Theme *Rheme*

(24) Das Mädchen kauft eine Bluse.
Theme *Rheme* *Theme*

(25) Das Mädchen kauft eine Bluse.
Rheme *Theme*

Question Test for IS

Question-answer pairs are commonly used to indicate or test the context in which a particular IS is appropriate: the question determines the Theme; what is asked for is the Rheme; the answer "fills" the Rheme.

(26) Was macht das Mädchen?

$$\underbrace{\text{Das Mädchen}}_{Theme} \quad \underbrace{\text{kauft eine BLUSE.}}_{Rheme}$$

(27) Wer kauft eine Bluse?

$$\underbrace{\text{Das MÄDCHEN}}_{Rheme} \quad \underbrace{\text{kauft eine Bluse.}}_{Theme}$$

Swapping the questions in the two examples results in incoherent Q-A pairs: the answers become infelicitous, because the IS partitioning then does not match the context set by the question.

Question Test for IS

The linguistic form of an utterance may be compatible with several different IS partitionings (as reflected by different questions)

(28)   Das Mädchen kauft eine BLUSE.

    a. Was kauft das Mädchen?

        $\underbrace{\text{Das Mädchen kauft}}_{Theme}$ $\underbrace{\text{eine BLUSE.}}_{Rheme}$

    b. Was macht das Mädchen?

        $\underbrace{\text{Das Mädchen}}_{Theme}$ $\underbrace{\text{kauft eine BLUSE.}}_{Rheme}$

    c. Was passiert gerade? / Was ist neu?

        $\underbrace{\text{Das Mädchen kauft eine BLUSE.}}_{Rheme}$

(29) Das Mädchen kauft eine Bluse.

Wer kauft eine Bluse?

Was macht das Mädchen mit eine Bluse?

(30) Wer kauft eine Bluse?

$$\underbrace{\text{Das MÄDCHEN}}_{Rheme} \quad \underbrace{\text{kauft eine Bluse.}}_{Theme}$$

(31) Was macht das Mädchen mit eine Bluse?

$$\underbrace{\text{Das Mädchen}}_{Theme} \quad \underbrace{\text{KAUFT}}_{Rheme} \quad \underbrace{\text{eine Bluse.}}_{Theme}$$

Question Test for IS

(32)   John flew from London to PARIS.

(33)   a. What happened?

b. What did John do?

c. Where did John fly?

d. To which place did John fly from London?

(32) is good as an answer to (33a-d). It has several possible IS partitionings.

(34) is only a matching answer to (35).

(34)   John flew to PARIS from London.
(35)   Where did John fly from London?

(36) is only a matching answer to (37).

(36)   John flew from LONDON to Paris.
(37)   From which place did John fly to Paris?

Neither of the above is a good answer to (38).

(38)   Who flew from London to Paris?
(39)   JOHN flew from London to Paris.

Second Dimension of IS Partitioning: Background-Focus

Background-Focus partitioning reflects an abstract notion of contrast between alternatives available in the discourse context, against which the actual utterance is cast; B/F partitioning within Theme and/or Rheme reflects alternative Theme(s) and/or Rheme(s) in the context.

IS Partitioning: Background-Focus in Rheme

(40)   Es gibt eine Bluse aus Baumwolle und eine aus Seide.
       Was kauft das Mädchen?

   $\underbrace{\text{Das Mädchen kauft}}_{Theme}$ eine $\underbrace{\underbrace{\text{SEIDENE}}_{Focus}\text{ Bluse.}}_{Rheme}$

(41)   Es gibt eine seidene Bluse und eine seidene Jacke.
       Was kauft das Mädchen?

   $\underbrace{\text{Das Mädchen kauft}}_{Theme}$ eine seidene $\underbrace{\underbrace{\text{BLUSE}}_{Focus}\text{ .}}_{Rheme}$

IS Partitioning: Background-Focus in Theme

(42)   Es gibt ein deutsches und ein amerikanisches Mädchen.
       Was kauft das deutsche Mädchen?

   Das   DEUTSCHE   Mädchen kauft   eine BLUSE .

$$\underbrace{\underbrace{\text{DEUTSCHE}}_{Focus} \text{Mädchen kauft}}_{Theme} \quad \underbrace{\text{eine BLUSE}}_{Rheme}$$

(43)   Es gibt eine deutsche Frau und ein deutches Mädchen.
       Was kauft das deutsche Mädchen?

   Das deutsche   MÄDCHEN   kauft   eine BLUSE .

$$\underbrace{\text{Das deutsche} \underbrace{\text{MÄDCHEN}}_{Focus} \text{kauft}}_{Theme} \quad \underbrace{\text{eine BLUSE}}_{Rheme}$$

IS Partitioning:
Background-Focus in Theme and Rheme

(44)   Ich weiss, dass die deutsche Frau eine Bluse aus Baumwolle kauft.
       Aber was kauft das deutsche Mädchen?

    Das deutsche   MÄDCHEN   kauft   eine   SEIDENE   Bluse .

$$\underbrace{\text{Das deutsche } \overbrace{\text{MÄDCHEN}}^{Focus} \text{ kauft}}_{Theme} \quad \underbrace{\text{eine } \overbrace{\text{SEIDENE}}^{Focus} \text{ Bluse}}_{Rheme}$$

IS Realization

- Various means that can be used (i.e., IS influences various aspects of linguistic form)
  - **intonation** (prosody); e.g., the predominant means in English
  - (word) **ordering**; e.g. the predominant means in Czech and other Slavic languages, also to some extent in German (particularly in the "Mittelfeld")
  - **morphological/grammatical marking**; e.g., particles 'wa' and 'ga' in Japanese
  - **syntactic constructions**, e.g. it-cleft, wh-cleft, passivization, etc.
  - **ellipsis**
- The means can be used also in combination;
- Different languages employ and combine the means differently, depending on their typological characteristics;

IS Realization Means: Intonation

- placement and type of accent and type of boundary tone
  - accent placed on Focus part
  - Theme-Focus and Rheme-Focus use different type of accent and boundary tone (tune): L+H*LH% is a prototypical Theme-tune, H*LL% is a prototypical Rheme-Tune
- placement of boundaries: boundary between Theme and Rheme

(45) Ich weiss, dass die deutsche Frau eine seidene Jacke anzieht.
      Aber was macht das deutsche Mädchen?

(46)   Das deutsche MÄDCHEN   kauft eine seidene   BLUSE   .
                     L+H*LH%   H*LL%
                   ‹Focus›   ‹Focus›
       ‹————————— Theme —————————› ‹————————— Rheme —————————›

IS Realization Means: Word Order

"Normal" (default) order: Theme before Rheme

(47) Was kauft das Mädchen? $\underbrace{\text{Das Mädchen kauft}}_{Theme}$ $\underbrace{\text{eine } \textsc{Bluse}.}_{Rheme}$

(48) MP3: Was soll mit den Liedern gemacht werden?
      U: Mit den Liedern soll eine Playlist erstellt werden.

(49) U: Bitte suche Titel von Madonna.
      MP3: Einen Moment bitte. … Von Madonna haben wir 1711 Treffer.

"Subjective ordering": Rheme before Theme (is marked)

(50) Was kauft das Mädchen? $\underbrace{\text{Eine } \textsc{Bluse}}_{Rheme}$ $\underbrace{\text{kauft das Mädchen.}}_{Theme}$

IS Realization Means: Syntax

Syntactic constructions can be used to mark IS:

Cleft: *It is Rheme (that/who) Theme*

1. What does John hate? It is COMICS John hates.
2. Who hates comics? It is JOHN who hates comics.

Pseudo-cleft: *Who/What Theme is/are Rheme*

1. What does John hate? What John hates are COMICS.
2. Who hates comics? Who hates comics is JOHN.

Passivization: allows opposite ordering than corresponding active sentence

(51)   Who hates comics?
    a.   Comics are hated by JOHN.
    b.   JOHN hates comics.

There-insertion: gets Rheme-subject away from the beginning of the sentence

(52)   a. What is in the garden? There is a TROLL in the garden.
    b. Where is a troll? A troll is in the GARDEN.

(53)   Es spielt die Tschechische Philharmonie. Es dirigiert Hilary Griffiths.

IS Realization Means: Ellipsis

Theme can be left implicit when it is "known" (available, retrievable):

(54)   A: What does John hate?
        B: COMICS.
(55)   A: Who hates comics?
        B: JOHN.

(56) MP3: Was soll mit den Liedern gemacht werden?
      U: Mit den Liedern soll eine Playlist erstellt werden.
(57) U: Bitte suche Titel von Madonna.
      MP3: Einen Moment bitte. ... Von Madonna haben wir 1711 Treffer.
(58) U: Wieviele Titel von Madonna gibt es?
      MP3: Einen Moment. ... 1711.

The Meaning of IS

- Steedman defines the meaning of the IS partitioning in terms of selecting one member from a *presupposed set of alternatives*
  - The Theme-Rheme partitioning presupposes a *Rheme-alternative set*, i.e., a set of alternative propositions that could possibly answer the corresponding question in the given context; Rheme then restricts the Rheme-alternative set to a singleton
  - The Focus-Background partitioning in Theme also presupposes a *Theme-alternative set*, i.e. a set of alternative questions; Focus within Theme then restricts the Theme-alternative set to a singleton
- These are pragmatic presuppositions that the relevant alternative set is available in the context.
- The systematic recognition of the alternative sets, and their maintenance as a discourse progresses are open research issues.

IS Meaning

(59)   Das deutsche MÄDCHEN kauft eine SEIDENE Bluse .

$$\underbrace{\underbrace{\qquad\qquad}_{Focus}}_{Theme}\quad\underbrace{\underbrace{\qquad}_{Focus}}_{Rheme}$$

Rheme-alternatives: *das deutsche Mädchen kauft x*
{das deutsche Mädchen kauft eine seidene Bluse, das deutsche Mädchen kauft eine Bluse aus Baumwolle, das deutsche Mädchen kauft eine Bluse aus Nylon, etc. }

Theme-alternatives: *y kauft etwas*
{das deutsche Mädchen kauft etwas, die deutsche Frau kauft etwas, der deutsche Man kauft etwas, der deutsche Junge kauft etwas, etc. }

IS: Meaning Differences

(60) a. Smoke OUTSIDE!

        b. SMOKE outside!

(61) a. STAFF behind counter.

        b. Staff behind COUNTER.

(62) a. *On the Shetlands one speaks* ENGLISH.

        b. *One speaks English on the* SHETLANDS.

(63) a. *Several people in this room know three languages.*

        b. *Three languages are known by several people in this room.*

(64) a. Officers always escorted BALLERINAS.

        b. OFFICERS always escorted ballerinas.

Where do themes come from?

How does a speaker decide how to partition their utterance?

QUD in dialogue/text

Thematic sequences.