



**Copenhagen  
Business School**  
HANDELSHØJSKOLEN

# Sprog, perception og kognition

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# Introduction to Language, Mind and Reality I

## Short historical overview

- Wilhelm von Humboldt (1767-1835)
- Frans Boas (1858-1942), Edward Sapir (1884-1939) and Benjamin L. Whorf (1897-1941)
- Noam Chomsky and Steven Pinker
- Anna Wierzbicka



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## Eye-tracking studies

Picture





## Introduction to Language, Mind and Reality II

- Results from various experimental areas
  - Eye-tracking (Chua et al. 2005)
    - American students start focussing on the figure
    - Chinese students start focussing on the ground



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## Categorization





## Introduction to Language, Mind and Reality

- Results from various experimental areas
  - Eye-tracking (Chua et al. 2005)
    - American students start focussing on the figure
    - Chinese students start focussing on the ground
  - Categorization (Nisbett & Masuda 2007)
    - People from Western countries are conceptually based
    - People from East Asia are perceptually based



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## Change blindness test





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  - Change blindness tests (Masuda & Nisbett 2006)
    - American students observe differences in the foreground
    - Chinese students observe differences in the background



## Introduction to Language, Mind and Reality

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    - American students observe differences in the foreground
    - Chinese students observe differences in the background
  - Brain scan tests (Hedden et al. 2008)



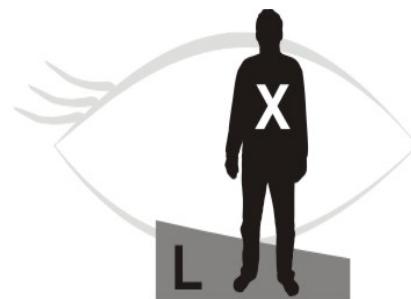
## Explaining the observed differences

- The American society conditions people to think of themselves as being independent entities, and the consequence is:
  - They focus on central objects
  - They have an analytic approach
- The East Asian societies condition people to think of themselves as being interdependent entities, and the consequence is:
  - They focus on the context/background
  - They have a holistic approach



## Naming and Perception

Image:



ground-situation



stand



Idea:

X EXIST VERT ON L

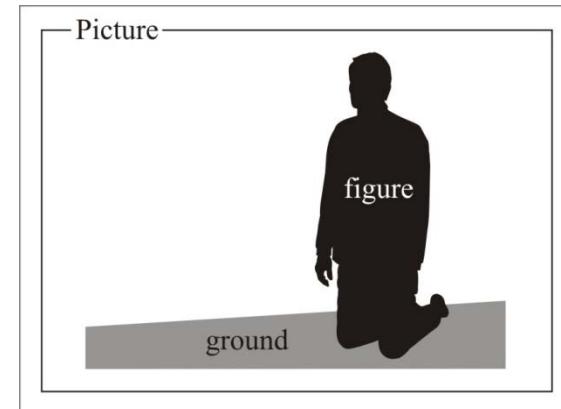
ground-proposition



# Language and Perception I: Naming Strategies

## Verb Phrase Level

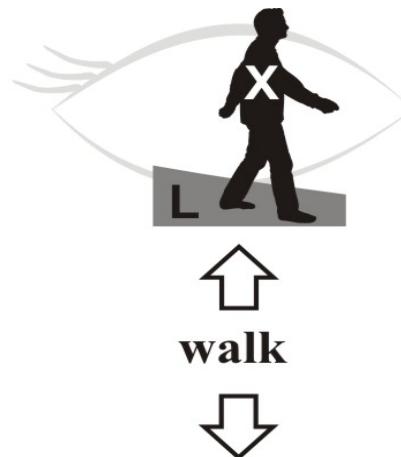
- HE STANDS (стоит – Russian)
- HE LIES (ligger – Danish)
- HE EXISTS (is – English)
- From-figure-to-ground (1st)
  - Russian and Chinese
- From-ground-to-figure (2nd)
  - Danish and Swedish
- Between-figure-and-ground (3rd)
  - English and French





## Naming and Perception

**Image:**



ground-situation

**Idea:**

X PRODUCE AN ACTIVITY

ground-proposition

logically entails

X EXIST VERT ON L



## Language and Perception II: Framing Strategies

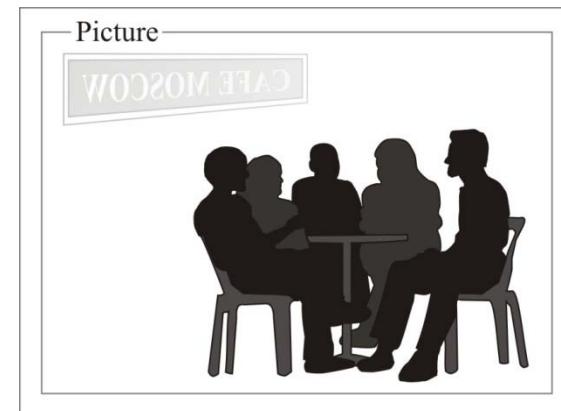
Utterance Level: One thing is naming  
– another thing is framing

Figure: 5 people sitting

Ground: a table - small cafe

Scene: 1945 – Moscow

- Scene – Ground – Figure
  - Russian and Chinese
- Figure – Ground – Scene
  - Danish
- Scene – Figure – Ground
  - English





## Language and Perception III: Framing Strategies

Russian and Chinese:

[In 1945 in Moscow in a small cafe around a table were sitting 5 people]

Danish:

[There sat 5 people around a table in a small cafe in Moscow in 1945]

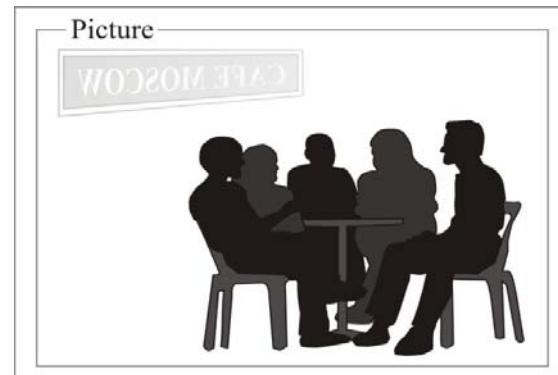
English:

In 1945 in Moscow 5 people were sitting around a table in a small cafe

Scene

Ground

Figure





## Other Pieces of Evidence for Different Framing Strategies

### Chinese

- Surname – first name
  - Wáng Lán
- People's Republic of China  
Hunan Province (postcode)  
Changsha City  
Chairman Mao Street, No. 137  
Wáng Lán Comrade
- 2009 November 30 Friday

### English

- First name – surname
  - James Bond
- Mr. George Robertson  
10121 Lincoln Rd  
San Diego, CA 12345  
United States
- Friday, November 30, 2009



## Comparing Naming Strategies and Framing Strategies

- |                             |                        |
|-----------------------------|------------------------|
| 1. Russian and Chinese      | 1. Russian and Chinese |
| • From-figure-to-ground     | • Scene-Ground-Figure  |
| 2. Danish                   | 2. Danish              |
| • From-ground-to-figure     | • Figure-Ground-Scene  |
| 3. English                  | 3. English             |
| • Between-figure-and-ground | • Scene-Figure-Ground  |



## Language and Perception: Possible Conclusions

The fact that the naming strategy and the framing strategy of a language are opposite to one another creates a paradox which must be resolved –  
There are two possible solutions:

1. The naming and the framing strategies of a language correspond to two types of vision
  - People possess an introvertive vision
  - People possess an extrovertive vision
2. The naming and the framing strategies of a language correspond to two varieties of the same vision
  - People use bottom-up processing
  - People use top-down processing



# Language and Cognition – from Perception to Cognition

“The burglary scenario”

6 burglars: A Russian, a Chinese, a Georgian, a Bulgarian,  
a Danish, an English burglar (X=burglar )

Living in: Russia, China, Georgia, Bulgaria, Denmark, England

Status: All married to a native speaking woman

Situation: X returns home after a burglary - tells his wife about the event  
brought about:

X BRING Y (a gold watch) TO X's POSSESSION



## What is an action, a process and an event?

Image:



telicity

↑  
to give  
↓



ground-  
situations

Idea:

X DO SOMETHING

implication

Y EXIST WITH Z

ground-  
propositions

logically entails

Y EXIST WITH X



## What the Burglar Says to His Wife 1

Russian: Situation (1<sup>st</sup>)

Ja      *ukral*      zolotye      časy  
I      stole.**pf.** gold      watch



## What the Burglar says to His Wife 1

### Russian: Situation (1<sup>st</sup>)

Ja      *ukral*      *zolotye*      časy  
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### Georgian: Experience (2<sup>nd</sup>)

Okros saati      *movip'are / movup'are*  
gold watch      steal.**pf.aor.dir.exp.** for his own sake / his wife's sake



## What the Burglar says to His Wife 1

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I    stole.**pf.** gold    watch

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*Okros saati    movip'are / movup'are*  
gold watch    steal.**pf.aor.dir.exp.** for his own sake / his wife's sake

### English: Information (3<sup>rd</sup>)

- a. *I have stolen* (pres.perf.) a *gold watch* – new information
- b. *I stole* (simple past) a *gold watch* – old information



## What the Burglar Says to His Wife 2

### Chinese: Situation (1<sup>st</sup>)

Wǒ	<i>tōu</i>	<i>le</i>	<i>yí</i>	<i>ge</i>	<i>húluóbo.</i>
I	steal	pf	one	CL	gold.watch



## What the Burglar Says to His Wife 2

### Chinese: Situation (1<sup>st</sup>)

<i>Wǒ</i>	<i>tōu</i>	<i>le</i>	<i>yì</i>	<i>ge</i>	<i>húluóbo.</i>
I	steal	pf	one	CL	gold.watch

### Bulgarian: Experience (2<sup>nd</sup>)

<i>Az</i>	<i>otkradnah</i>	<i>zlaten</i>	<i>časovnik.</i>
I	steal.pf.aor.dir.exp.	gold	watch



## What the Burglar Says to His Wife 2

### Chinese: Situation (1<sup>st</sup>)

<i>Wǒ</i>	<i>tōu</i>	<i>le</i>	<i>yì</i>	<i>ge</i>	<i>húluóbo.</i>
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I	steal. <b>pf.aor.dir.exp.</b>	gold	watch

### Danish: Information (3<sup>rd</sup>)

a.	<i>Jeg</i>	<i>har stjålet</i>	<i>et</i>	<i>guldur</i> - new information
	I	steal.perf.	indef	gold watch
b.	<i>Jeg</i>	<i>stjal</i>	<i>et</i>	<i>guldur</i> – old information
	I	steal.imperf	indef	gold watch



## Processing stage I — Input

### MENTAL INSTRUCTIONS — IDENTIFICATION

Process instruction

unstable picture

if p and  $\Diamond q$ , then p FIN q

Event instruction

stable picture

if q and  $\neg q$ , then p CAUS q



## Processing stage II — Intake

### MENTAL MODELS — ASSIMILATION

Process model

$$\text{prod}_X p \wedge \text{intend}_\alpha (p \rightarrow \exists q)$$

Event model

$$\text{prod}_X p \wedge (p \rightarrow \exists q)$$



### Processing stage III — Outcome

#### MENTAL STORES — ACCOMMODATION

Past world store

motion picture

X produced p-and-q

Present world store

still picture

q because of p-and-q



## Processing stage I — Input

### MENTAL INSTRUCTIONS — IDENTIFICATION

Process instruction

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unstable picture

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if p and  $\Diamond q$ , then p FIN q

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## Processing stage II — Intake

### MENTAL MODELS — ASSIMILATION

Process model

Event model

$\text{prod}_X p \wedge \text{intend}_\alpha (p \rightarrow \exists q)$

$\text{prod}_X p \wedge (p \rightarrow \exists q)$

## Processing stage III — Outcome

### MENTAL STORES — ACCOMMODATION

Past world store

Present world store

motion picture

still picture

X produced p-and-q

q because of p-and-q



## 3 Modalities of Existence

### HUMAN MIND

- Input – Experience
- Intake – Understanding
- Outcome – Memory

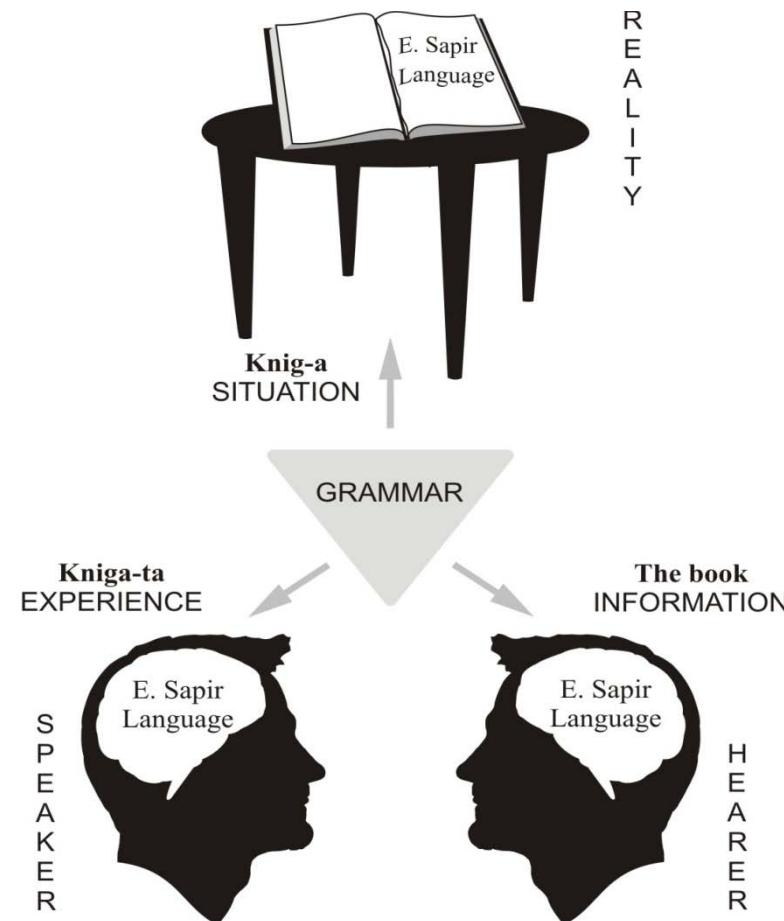
## 3 Modalities of Existence

### HUMAN LANGUAGE

- The situation itself
- The experience of the situation
- The memory of the experience of the situation



## The three modalities of existence in language





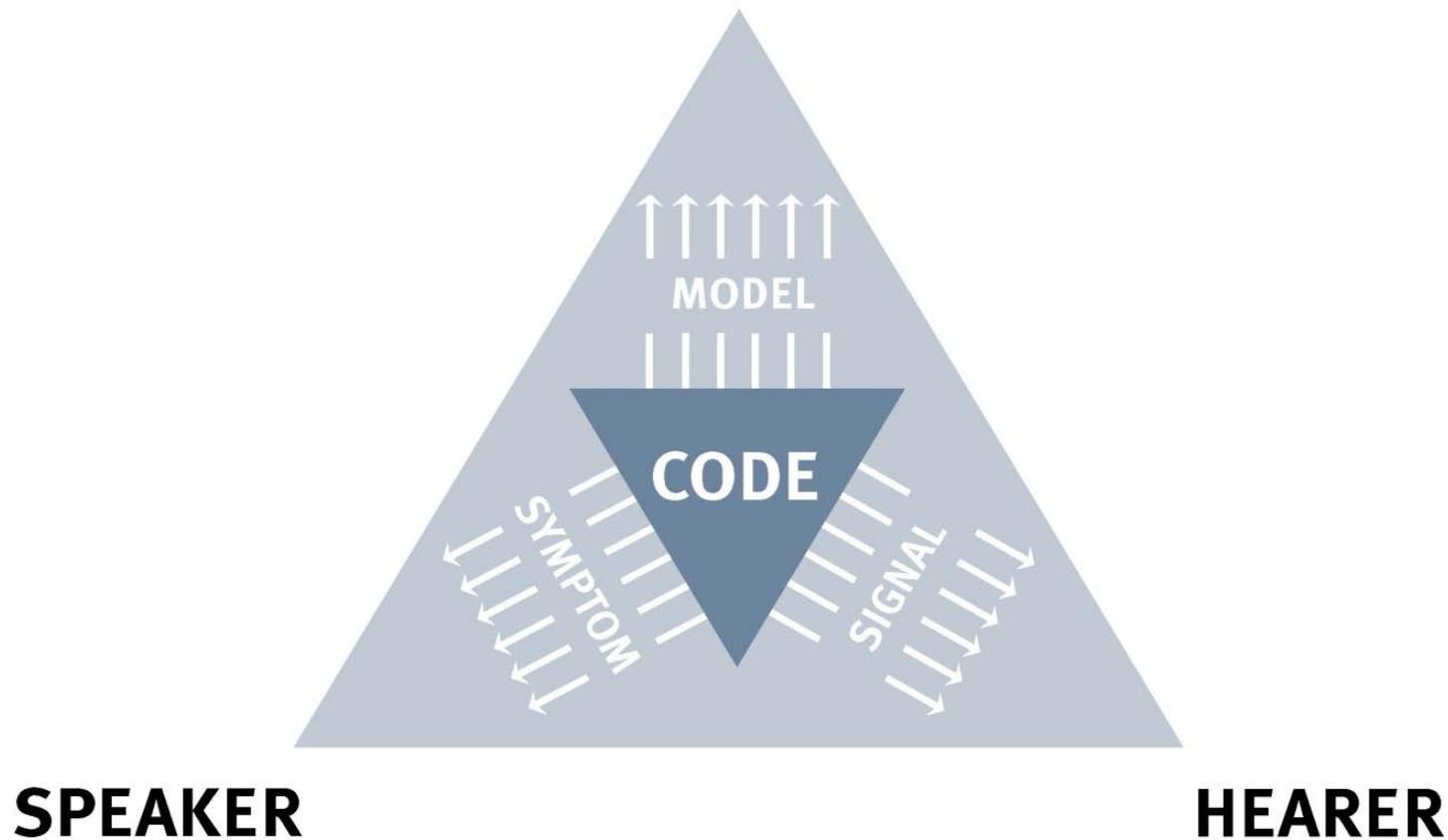
## Taler sprog med samme stemme?

- Undskyld, jeg kommer for sent – jeg sad fast i en taxa.
- Betjente har ikke tid til indbrud.
- Marias morder var uskyldig.
- Person står foran en vægt, hvorpå der står: Sluk den!
- Efter myndighedsloven har moderen forældremyndigheden alene, når forældrene ikke er gift med hinanden (Soglasno Zakonu Danii o deesposobnosti **pri roždenii rebenka u roditelej**, ne sostojaščix meždu soboj v brake, roditel'skie prava v otноšenii rebenka imeet tol'ko mat').
- Kak najti svoj put' k inostrannym jazykam = Vejen til fremmedsprog



## Den grammatiske trekant – afsenders model

### REALITY



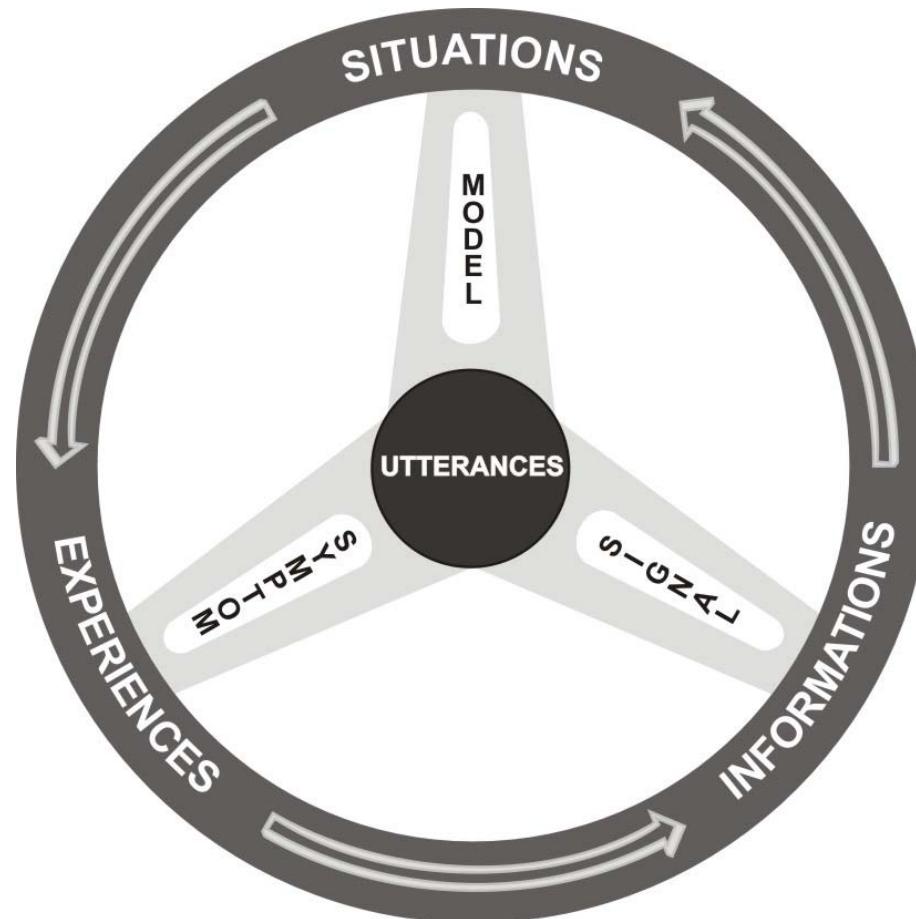


## De tre stemmer som tre sproglige supertyper

- Situationens stemme – virkeligheds-orienterede sprog
  - Afsender er rapporter – 3. persons-orienteret – Model
  - Eksempler: russisk, kinesisk og hindi
- Oplevelsens stemme – afsender-orienterede sprog
  - Afsender er kommentator – 1. persons-orienteret – Symptom
  - Eksempler: bulgarsk, tyrkisk og georgisk
- Informationens stemme – modtager-orienterede sprog
  - Afsender er meddeler – 2. persons-orienteret – Signal
  - Eksempler: dansk, engelsk og svensk

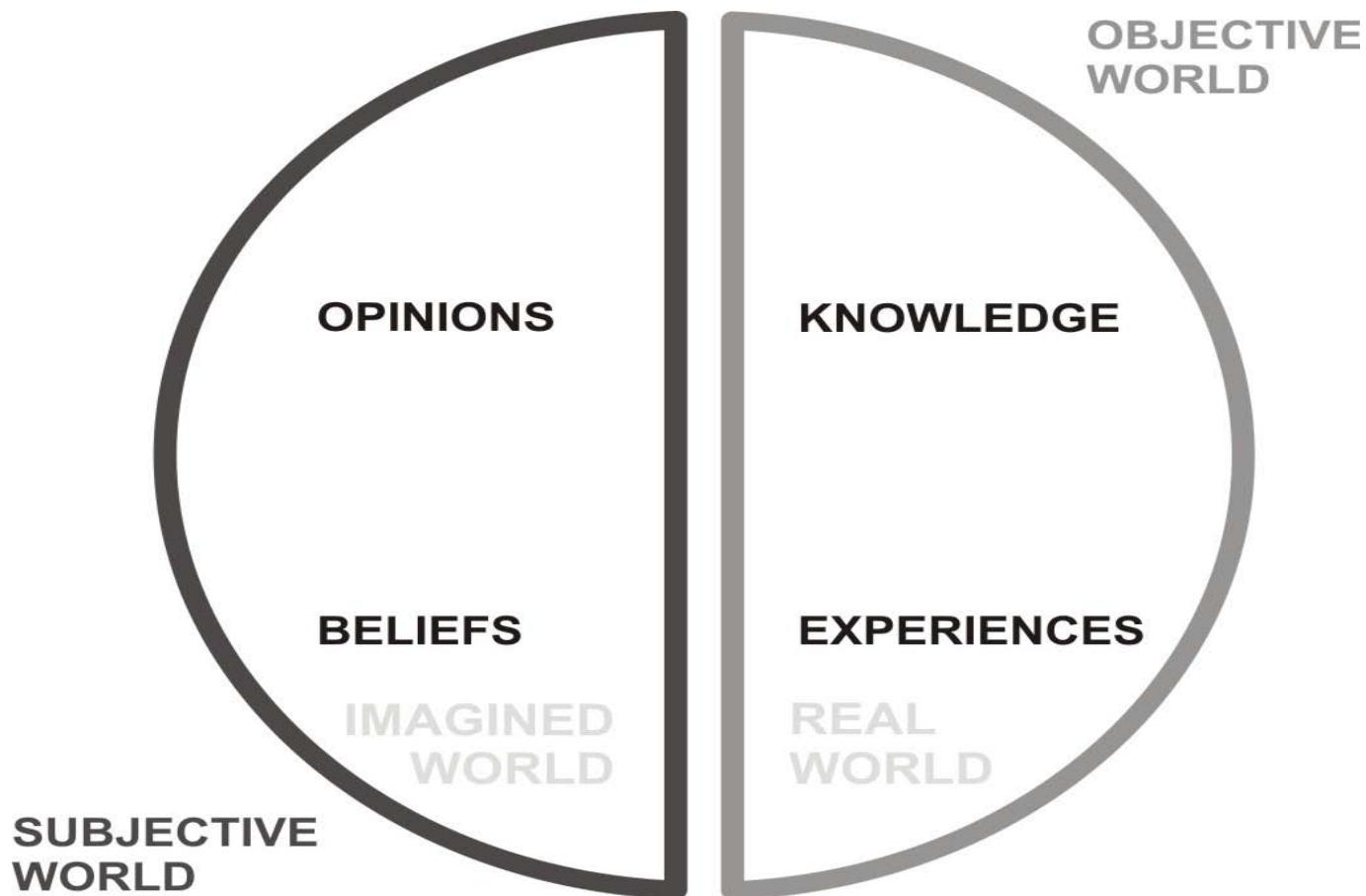


## Det semiotiske hjul – modtagers model





Afsenders valg mellem privat og offentlig stemme i dansk





## De fire universer og de fire tempusbetydninger i dansk

<b>World of opinions (mené)</b>  <i>Tom har vundet i Lotto to gange. Er han ikke heldig?</i> ‘Tom has won in lottery twice. Isn’t he lucky?’  <i>Characterization</i>	<b>World of knowledge (vide)</b>  <i>Tyve har altid udnyttet det svageste punkt ved et hus</i> ‘Thieves have always used the weakest place in a house’  <i>Generalization</i>
<b>World of beliefs (tro)</b>  <i>Tyven er gået ind ad døren og har tømt skufferne for indhold</i> ‘The thief, I assume, entered the house through the door and emptied the drawers’  <i>Imagined world</i>	<b>World of experiences (synes)</b>  <i>Tom har vundet i Lotto! Kom og se alle sammen!</i> ‘Tom has won in the lottery! Come and see!’  <i>Situation description</i>



## De fire universer som fire diskursverdener

<b>World of opinions (mene)</b>  <i>Han må fyres i morgen!</i>  'He must be fired tomorrow (and I will do it)'	<b>World of knowledge (vide)</b>  <i>Mange fyres for tiden</i>  'Many people are fired'
<b>World of beliefs (tro)</b>  <i>Han må blive fyret i morgen</i>  'He must get fired tomorrow (I predict)'	<b>World of experiences (synes)</b>  <i>Mange bliver fyret for tiden</i>  'Many people are being fired now'



## Den objektive hovedstemme og den subjektive bistemme

- Hvor mange mennesker vil der mon stå i kø til en koncert med "X"?
  - Jeg tror der **vil** være mange – objektiv hovedstemme
  - Jeg tror der **ville** være mange – subjektiv bistemme
- Jeg har nogle erfaringer **der** kan bruges til noget – objektiv hovedstemme
- Jeg har nogle erfaringer **som** jeg kan bruges til noget – subjektiv bist.
- Der er ingen **der** kan forstå hvad du siger – objektiv hovedstemme
- Der er ingen **som** kan forstå hvad du siger – subjektiv bistemme
- Han må være rejst til Moskva (uden partikel – objektiv hovedstemme)
- Han er **nok** rejst til Moskva (med partikel – subjektiv bistemme)



## Kommunikationsprocessen i dansk

	Speaker's Input	→	Speaker's output / Input to grammar	→	Output of grammar / Hearer's input	→	Hearer's output / Total intake
Danish	Experiences	S P E A K E R	Speaker's objective voice  Speaker's subjective voice	G R A M M A R	Informations	H E A R E R	Situations