

CS 533  
Natural Language Processing  
Lecture 5 – March 3, 2003

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Context Change  
Outline

Joint participation in context change  
Grounding  
Update rules  
Conversation as agency, again

Context change

In dialogue, *context change* simply refers to the effects that participants' utterances have on the conversation and the overall task.

Because language use is joint activity, any agreed context change reflects the action of all participants in the conversation.

Joint participation in context change

Clark's four levels.

Level 1. Joint attention.

joint[A executes behavior  $t$  for  $B$  to perceive;  
 $B$  attends perceptually to behavior  $t$  from  $A$ ]

Joint participation in context change

Clark's four levels.

Level 2. Joint presentation and identification.

joint[A presents signal  $s$  for  $B$ ;  
 $B$  identifies signal  $s$  from  $A$ ]

Joint participation in context change

Clark's four levels.

Level 3. Joint signaling and recognition.

joint[A signals to  $B$  that  $p$ ;  
 $B$  recognizes that  $A$  means that  $p$ ]

## Joint participation in context change

Clark's four levels.

Level 4. Proposing, considering & taking up.

joint[A proposes joint project  $w$  for  $A$  and  $B$ ;  
 $B$  addresses whether to take up  $w$ ]

## Joint participation in context change

A wide range of utterances specifically function to coordinate these levels of joint activity, particularly *reactions*.

## Reactions to events in the world

Event	Reaction
$A$ and $B$ see tennis player double fault	"Uh-oh"; frown
$A$ and $B$ notice beautiful sunset	"What a beautiful sunset!"
$B$ notices $A$ wearing new earrings	"What beautiful earrings!"
$A$ holds out cup of coffee for $B$	"Thank you" as $B$ takes cup
$A$ plays piano for $B$	$B$ applauds
$A$ holds money out for $B$	$B$ takes money

## Reactions and construals

*Construal* refers to the judgment of cause or intention that somebody makes in categorizing something

*Reactions* often signal *construals*

## Reactions and construals

Example:  $K$  places wine on the table.

Case 1.

$J$ 's construal:  $K$  is doing  $J$  a favor.

$J$ 's utterance: "Thanks"

Case 2.

$J$ 's construal:  $K$  is doing a duty for  $J$ .

$J$ 's utterance: "Right"

Case 3.

$J$ 's construal:  $K$  is showing  $J$  a new skill.

$J$ 's utterance: "Nicely done"

## "Negotiation" of meaning

$K$  brings wine for  $H$  but places it between  $H$  and  $J$

$J$  says "Thanks" (construing it as for himself)

$K$  says "You're welcome" and goes to get more wine for  $H$ .

## Grounding and closure

### Closure

Agents performing an action require evidence, sufficient for current purposes, that they have succeeded in performing it.

### Joint closure

The participants in a joint action try to establish the mutual belief that they have succeeded well enough for current purposes.

Grounding = joint closure on actions in dialogue

## Grounding: Presentation and acceptance

You can think of joint closure being reached in two phases:

*A* presents *B* with an utterance

*B* provides evidence of what *B* does or does not perceive, identify, or understand until the two accept that the understanding is good enough for current purposes

## Reactions, construals, evidence of understanding

### Assertions of understanding

"uh huh", "I see", "m"

### Presuppositions of understanding

uptake, moving on

### Displays of understanding

answer to question

### Exemplifications of understanding

paraphrase

## Reactions and language

### Acknowledgment

"it was a lovely day"

"yes"

I understand what you just said

## Reactions and language

### Uncertainty marker

"OK, the next one is the rabbit"

"Uuuh"

I don't yet understand what you just said

## Reactions and language

### Collaborative completion

"So I'd wanna, when I make a tape –"

"be able to speed it up?"

is this how you meant to continue?

## Reactions and language

### Truncation

“where’s the other – ”

“on the back shelf”

I already know what you’re going to ask

## Seeking reactions

### Trial constituent

“A man H\* called L- Allegra H\* H-H%”

confirm that you know who I mean by Allegra

“yeah, Allegra”

## Seeking reactions

### Installment

“So Mr D Chatham L+H\* L-H%” (+length)

confirm that you understand this phrase

“yes”

## Seeking reactions

### Fade out

“You know, she’s just gonna –”

I am sure you understand (well enough) without my completing this.

## Clark’s two “tracks”

### Track 1.

The main event, some joint activity in the world.

### Track 2.

A collateral event - communication: a joint activity to understand and be understood.

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