



## Humor in the Interface

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## What is Humor?



Lieutenant  
Commander  
Data is a robot  
character in  
the fictional  
Star Trek  
universe

"Star Trek  
Generations"  
Data attempts to be  
funny



## From Star Trek to Interstellar



- Interstellar 2014
- TARS robot
- Sense of Humor
- Humor settings

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## Interstellar 2014



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## From Language to the Real World

Sensors and actuators become embedded in our physical world, leading to a digitally enhanced (real) world



## From Language to the Real World

Can we use sensors and actuators to create humor in this real world, just as we can use words (and timing, prosody, gestures, ..) to create humor?

## Why Look at Humor in HCI Research?

- Understanding and generating humorous texts (e.g. jokes) by a computer
- Modeling natural Human-Human Interaction
  - verbal and nonverbal
- Modeling natural Human-‘Computer’ Interaction
  - e.g., in social robots or in virtual humans
- Create humor in digital entertainment
- Create and understand humor in our daily, digitally enhanced environments (home, office, public and urban spaces), i.e., in our smart environments

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## Talk Contents

- Humor Research & Theories
- Humor beyond Language
  - Cartoons & animations, products
  - Movies, real (physical) world
  - Games
- Humor and Digital Technology
  - Accidental, scripted, mischievous, spontaneous humor
  - Digital technology to facilitate and generate humor
- Conclusions

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## Is there Humor Research?

- Humor Research
  - Lots of scientific journals pay attention to humor
  - Lots of books are devoted to humor science
  - Humor Summer Schools are organized
  - Yearly Conferences of the International Society of Humor Studies



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## Conventional Humor Theories

- Hostility/Superiority Theory
  - Plato, Aristotle, Hobbes, ...
  - Looking at humor, emphasizing the competitive relations between humans (losers, winners, laugh at the misfortune of others)
- Relief/Release Theory
  - Freud, Minsky, ....
  - Looking at humor, emphasizing the release of tension
    - suppress emotional censors
    - suppress cognitive censors

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## Conventional Humor Theories

- Incongruity (Resolution) Theory

- Beatty, Kant, Schopenhauer, Koestler, ...
- Looking at humor, emphasizing the cognitive process
- “Laughter arises from the view of two or more inconsistent, unsuitable, or incongruous parts or circumstances, considered as united ..... , or as acquiring a sort of mutual relation from the peculiar manner in which the mind takes notice of them.” (Beattie, 1776)

## Examples

(mother on the phone)

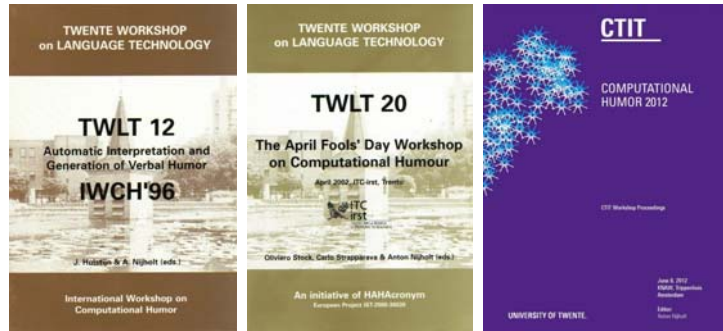
- *"Doctor, come at once! Our baby swallowed a fountain pen!"*
- *"I'll be right over. What are you doing in the meantime?"*
- *"Using a pencil."*

(two friends talking)

- *"Why did you run away from the operation table?"*
- *"The nurse said "Don't worry, it is a simple operation, no need to get so nervous.""*
- *"She was just trying to calm you down!"*
- *"Yes, but she said it to the doctor!"*

## Towards Computational Humor

### Automatic Interpretation and Generation of Verbal Humor



#### Proceedings

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## Towards Computational Incongruity

- Two stereotypical but 'clashing' situations

First Perspective (nurse, doctor, patient, professional, experienced)

*"Why did you run away from the operation table?"*

*"The nurse said "Don't worry, it is a simple operation, no need to get so nervous.""*

*"She was just trying to calm you down!"*

Second Perspective (inexperienced, first time performance, nervous)

*"Yes, but she said it to the doctor!"*

- Scripts (AI, Schank) describe stereotypical situations

- go to a restaurant, using an ATM, use an elevator, ...

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## Towards Computational Incongruity

- Script 1: Operation room with a doctor (surgeon), nurse and patient. Patient is nervous and the nurse tries to calm the patient down
- Script 2: Someone has to perform a task for the first time. He or she is uncertain, not sure of being successful. A more experienced person gives some reassurance
- The scripts are overlapping. Nurse and doctor appear in both. The task that has to be performed in the 2nd script is the operation mentioned in the 1st script
- The scripts are 'opposed'. Experience vs Inexperience
- Making the cognitive shift from the first script to the second script resolves the incongruity

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## Humor Research and Theories

Many problems. Very modest progress.

What about:

- “A dyslexic man walks into a bra.”
  - or
- “Three men walk into a bar... Ouch!”
  - or
- ... many others

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**There is no chance that we can ever describe all our knowledge with scripts and can design algorithms to decide when a script should be replaced by a different one as is needed in the analysis of jokes, let alone ... the modelling of humor in general**

But, ...

- Maybe in domains where our verbal and nonverbal (inter)actions are strongly guided and controlled by the limitations of the environment that we inhabit, perceive, and in which we perform and interact with others
- Designing and realizing incongruity humor in worlds that we can control using sensors and actuators (overlap by definition, introduce 'opposing' (surprising) elements

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## **From Language to the Real World**

What about other than Language  
Humor? Nonverbal Humor?  
Accidental Humor? Spontaneous  
Humor?



## Humor in the Real World



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## From Language to the 'Real' World?

### Designing Incongruities in 'Controlled' Worlds

- Cartoons
- Movies
- (Digital) Games
- Smart Environments





## More 'Controlled' Worlds

### Cartoons and Animations

## Cartoons and Animations

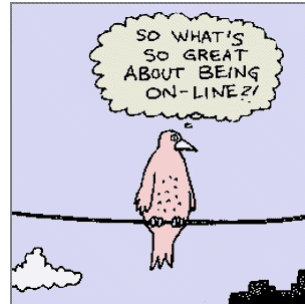
- Cartoons are to Visual Humor what jokes are for Verbal Humor
- But, important differences
  - Bi-media message: mixture of image and text
  - More immediate display of incongruities (not really sequential display)



## Cartoons and Animations

- 'Birds world' vs 'Internet World'

- Overlap: 'being on-line'
- Contrasting worlds: natural versus virtual, real versus metaphorical
- Two perspectives in one image



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## Cartoons and Animations

- Coyote and Road Runner



Fast and Furious

Blending of scripts/frames (overlap) that are in opposition

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## More 'Controlled' Worlds

### Humorous Products

## Humorous Products

### Incongruent Product Experiences

- Representational
  - Usual vs. unusual shape, tactile, color, size, smell, taste, sound, ...
- Operational
  - Expected vs. unexpected functions of the product
- Context of Use
  - Usual vs. unusual situations where the products are used



## Humorous Products

### Representational Aspect: Shape Incongruity



Match Lamp

Use familiar forms, material, colors and sizes of products for a different purpose



Egg Scale Bathroom mat

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## Humorous Products

### Operational Aspect: Function Incongruity



Visiting Card Balloon

A balloon used as a visiting card for a chest physician.

To read the card, one would have to blow the balloon – an exercise that would indicate his/her lung capacity.

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## Humorous Products

- ‘Context of Use’ Aspect: Use Incongruity



Key Storage Rack

Incongruity between the appearance-based expected use of the product and the real purpose through exposure to the situation of use

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## Humorous Products

Example



- Sensorial Incongruity
- Association map/Frame overlap
- Contrast

Ludden & Kudrowitz

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## More 'Controlled' Worlds

### Movies

## Simultaneous Play

'Eating a Shoe' vs  
'Eating a Dinner'

'Mimed' Metaphor

- Shoe laces as spaghetti
- Sole as steak
- Shoe nails as bones



Charlie Chaplin, The Gold Rush (1925)







## More 'Controlled' Worlds

### Games/Interactive Virtual Worlds

## Humor in Games

- 'Canned' humor in cut scenes
- 'Canned' humor, but integrated in the game, just as music is integrated in the game
- Accidental humor
  - Team activities in massively multiplayer online role-playing games
  - Because of bugs
  - Looking for potential humorous situations
    - Machinema
- Mischief humor



## Mischief Humor in Games

- Exploring game environments
  - Exploiting bugs, unforeseen situations, not following game rules or narrative
- Pranking, Trolling
  - No harm intended, laugh when discovering to be deceived, be a sport, ...
- Griefing
  - Ruining the game play of others
- Bullying
  - Intended to cause emotional harm

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## Real World Humor



## Real (Physical) World Humor

- Hardly theory available
- Henri Bergson (1900) *Le Rire* (Laughter)
  - Humorous when an event reminds you of a mechanical failure or when it provides a mechanical point of view on behavior or on an event
  - Various principles
- Typologies of Humor (Morreal, Berger, Buijzen)
  - different kind of incongruities (in objects, persons, situations, interactions, ...)

## Real (Physical) World Humor

### Incongruity in Objects, Persons, Situations

- Deficiency in an object or person
  - Physical deformity, Ignorance or stupidity, Moral shortcomings, Actions that fail
- One thing/situation seeming to be another
  - Mimicry/Imitation, Imposter, Pretense, Mistaken identity
- Coincidence in things/situations
  - Unexpected repetition
- Juxtaposition of Opposites
  - Physical, social, psychological differences
- Presence of things in inappropriate situations

## Real World Humor

- Existing typologies do not take into account digital technology
- No addressing of different modalities used in humor generation and understanding: no multimodal humor
- Not taking into account preferences of different audiences (age, gender ...) and different situations
- Humor styles not addressed: affiliative, aggressive, self-defeating, or self-enhancing?

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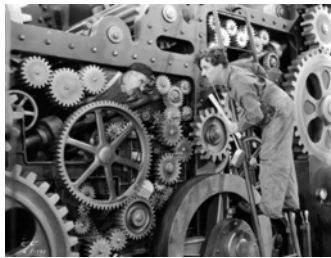


## Digitally Enhanced Real World and Humor

Accidental, Scripted, Spontaneous,  
Mischievous Humor in Smart  
Environments?



## Introducing New Technology



Charlie Chaplin, Modern Times, 1936



Jacques Tati, Mon Oncle, 1958



Lucille Ball, Lucy Show, 1952

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## Introducing New Technology



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## Introducing New Technology



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## South Korean Woman's Hair 'Eaten' by Robot Vacuum Cleaner as She Slept



Firefighters try to rescue a woman at her house in Changwon, southeast South Korea after her hair was sucked into a robot vacuum cleaner. She lost about 10 strands of hair but was not injured.

Accidental Humor

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## Sensors and Actuators Everywhere



Accidental Humor

Self-parking Car

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## Technology Goes Wrong



Bugs (Blue Screen) Humor

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## Sensors and Actuators Everywhere

Roomba (robot vacuum cleaner)



Accidental Humor

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## Sensors and Actuators Everywhere

Elevator



Mischievous Humor

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## Sensors and Actuators Everywhere

Hacking the entertainment (!) system of a car and take over control of other systems (brake, transmission, radio, etc.



Chrysler Jeep Cherokee

Tesla Model S

Intentional (Mischievous) Humor

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## Sensors and Actuators Everywhere

Dancing Traffic Light



Intentional Humor

Humor in the Interface



## Sensors and Actuators Everywhere

### Piano Stairs



Intentional Humor

Humor in the Interface



## Sensors and Actuators Everywhere

### Prankvertising

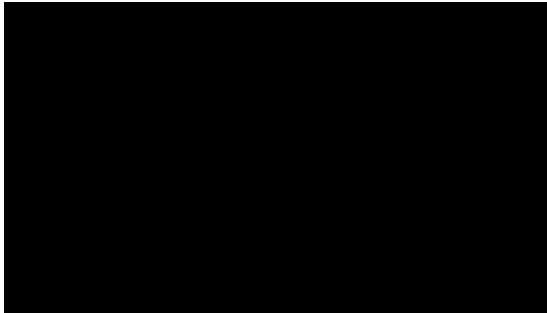


Intentional Humor

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## Sensors and Actuators Everywhere



Script1: Billboard-on-Platform  
Script2: Female-on-Platform

Start: Script1  
When train arrives: Co-occurrence of Script1 and Script2

Opposition:  
animate/inanimate  
Context-awareness

Intentional (Friendly) Humor

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## Sensors and Actuators Everywhere



Hello Lamppost



Shadowing

Playable City (Bristol, UK)

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## Sensors and Actuators Everywhere



Shadowing

Playable City (Bristol, UK)

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## Conclusions

- Humor can be intended or accidental. It can arise from shortcomings from technology or unexpected use of technology (maybe especially true with invisible digital technology, embedded in devices and the environment)
- In the near future we can use sensors and actuators to configure situations, introducing incongruities, that help us to create humor. Just as we can use words (and timing, prosody, gestures, ..) to configurate verbal humor.
- We can learn from humor as it occurs (accidental or deliberate) in language, cartoons, games and movies
- In the more faraway future, can smart environments, including social robots and virtual humans, autonomously create humor?

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**Thanks**

## Playful and Humorous

 <p>Anton Nijholt, Editor <b>Playful User Interfaces</b> Interfaces that Invite Social and Physical Interaction Springer</p>	 <p>Adrian David Cheek, Anton Nijholt, Teresa Romo, Editors <b>Entertaining the Whole World</b> Springer</p>	 <p>Anton Nijholt, Editor <b>More Playful User Interfaces</b> Interfaces that Invite Social and Physical Interaction Springer</p>	 <p><b>Playable Cities</b> To Appear</p>
2014	2014	2015	2016



**Humor in the Interface**