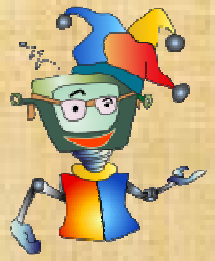
Riddle-building by rule



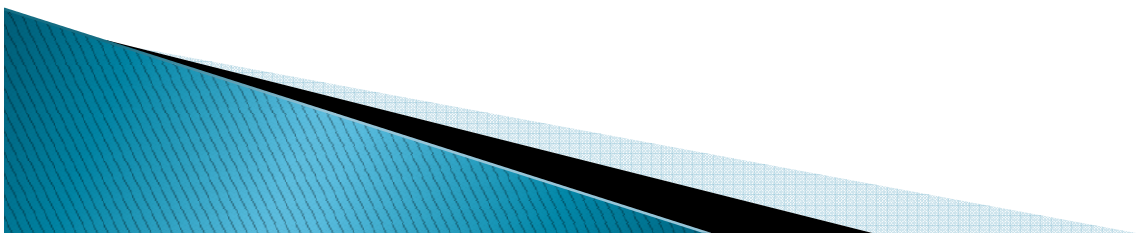
Graeme Ritchie

University of Aberdeen

(Based on work with Kim Binsted, Annalu Waller, Rolf Black, Dave O'Mara, Helen Pain, Ruli Manurung, Judith Masthoff, Mukta Aphale, Feng Gao, Wendy Moncur)

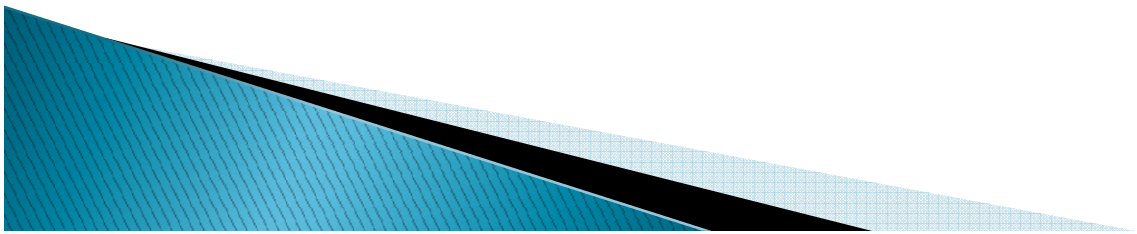
This talk:

- A practical application of riddle-generation
- How the generator works (in brief)
- Audience participation – build your own riddles



JAPE (1993 – 1996)

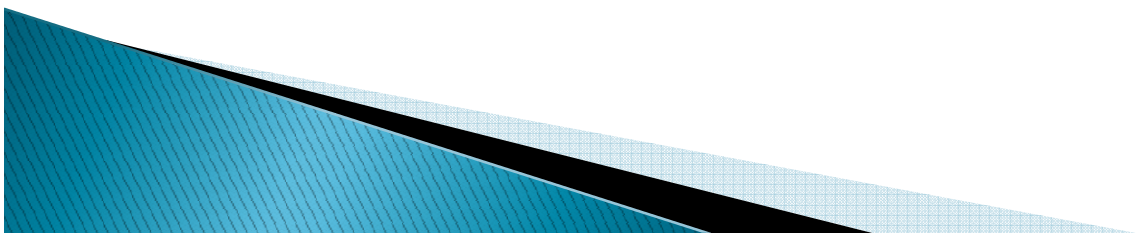
- The JAPE computer program produced *punning riddles*, e.g.:
  - What's the difference between leaves and a car?
    One you brush and rake, the other you rush and brake.
  - What do you get when you cross a monkey and a peach?
    An ape-ricot.
  - What do you call a murderer with fibre?
    A cereal killer.



A practical application

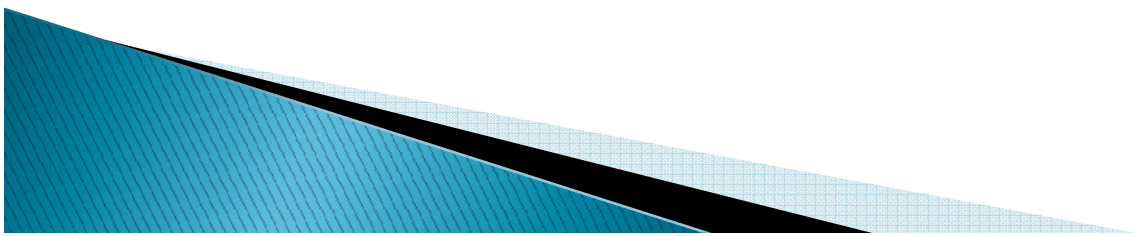
Voice Output Communication Aids

- mainly aimed at "needs-based" communication
- interactions stilted
- little opportunity for independent vocabulary acquisition and word play
- some explorations with stored anecdotes or jokes



Humour and children with complex communication needs (CCN)

- Humour enhances children's linguistic & conversational skills, social interaction.
- Children with CCN have fewer opportunities for language-play & humour.
- They often (therefore?) have poorer humour and language skills.
- Encouraging such children to explore jokes might help?
- A software "playground" might allow this.

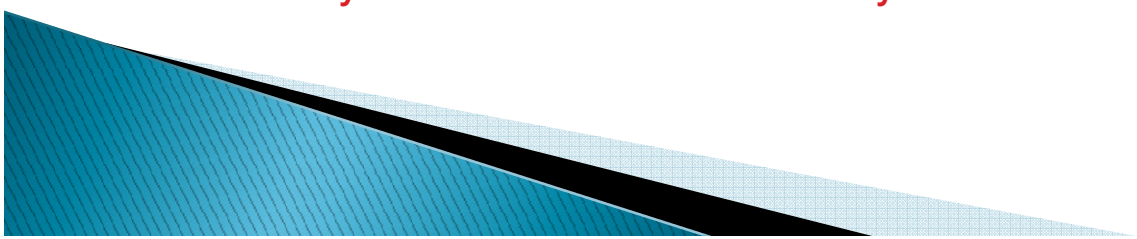


STANDUP Project (2003-2007)

The aim:

to design, build and evaluate software that enables children with CCN to experience language play through humour.

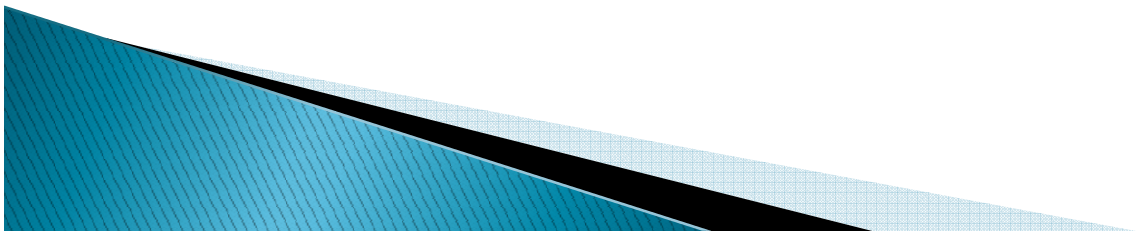
(System To Augment Non-speaker's Dialogue Using Puns)



STANDUP Project

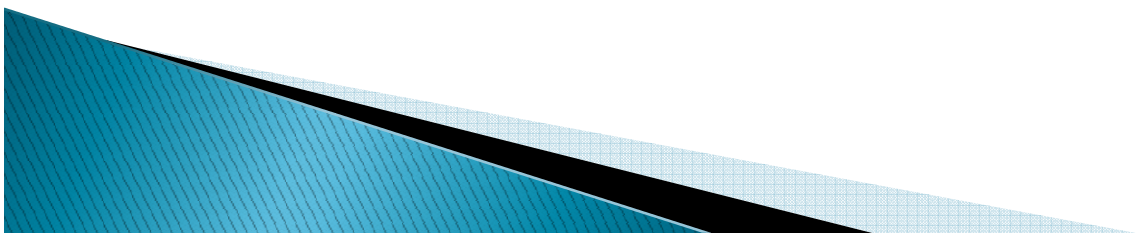
Design and build a pun generator which is:

- fast
- robust
- large scale
- usable by children with “complex communication needs”
- guidable by the user
- can be tailored to individual users



Computer-generated riddles

- What do you call a bright rabbit?
  A sunny bunny.
- What do you get when you cross a feeding with a heating system?
  A central eating.
- What do you call a heavenly body with an assembly line ?
  A manufacturing planet.
- What is the difference between a desolate amusement and a smart impact ?
  One is a bleak show, the other is a chic blow.



The evaluation phase

- 14 sessions, spread over 8 weeks, in a special-needs school, with 9 children.
- Children shown how to use the software, with assistance and guidance reduced over the period.
- Smaller trials with typically-developing (non-CCN) children.
- Results (qualitative) very positive:
  - children grasped the software quickly;
  - children enjoyed using software (and the jokes);
  - CCN children stimulated to interact with others as a result (anecdotal evidence from teachers and parents).

CAPABILITY SCOTLAND
TURNING DISABILITY INTO ABILITY
60 years of positive change

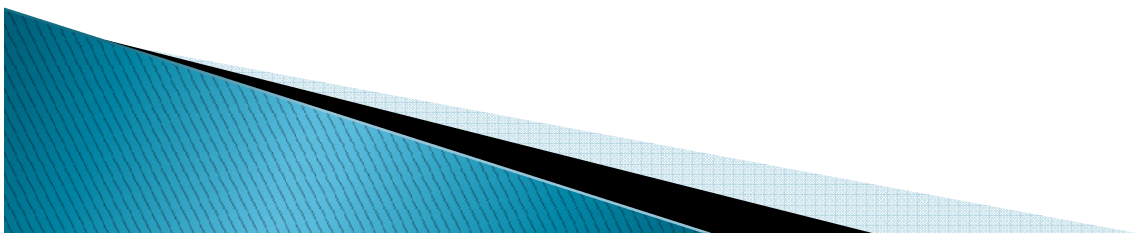
DA telling punchline first
Week 5

NI exploring to get 'any joke'
Week 8

The Joking Computer Project (2009-2010)

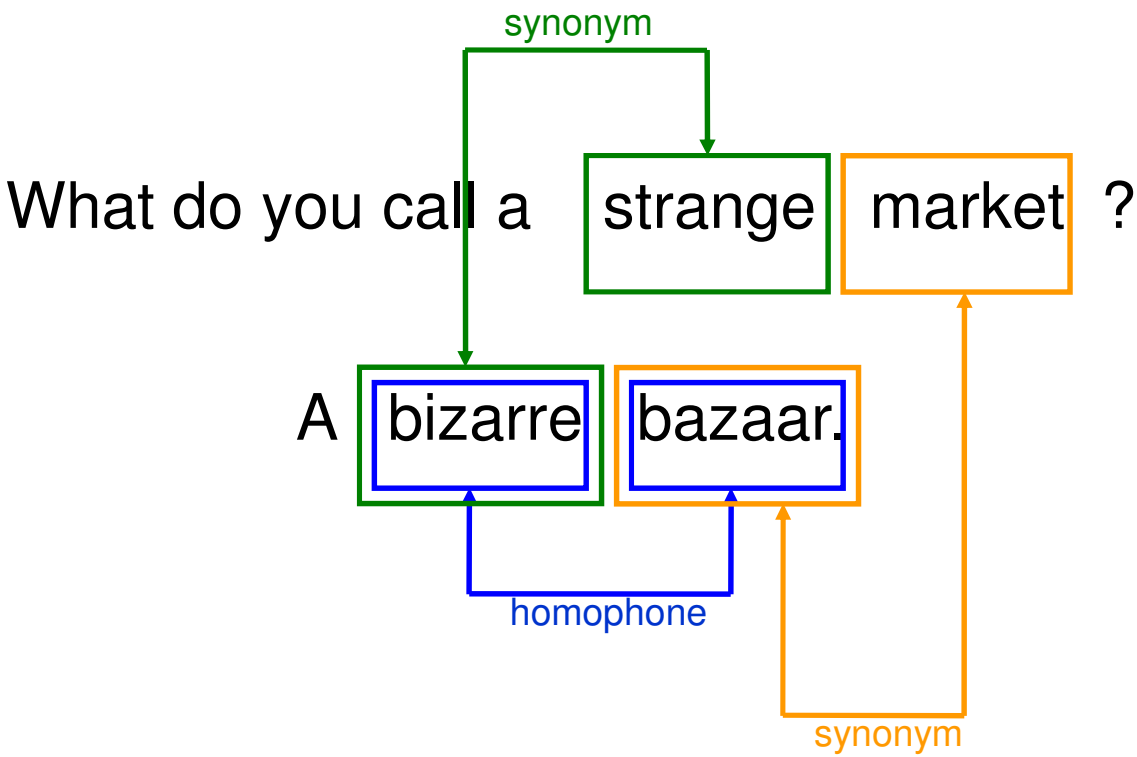
- Enhance the STANDUP software with explanations of how it works.
- Make it into a public exhibit for children.
- Publicise research into computational humour.
- Run joke-building workshops with children.

http://www.abdn.ac.uk/jokingcomputer

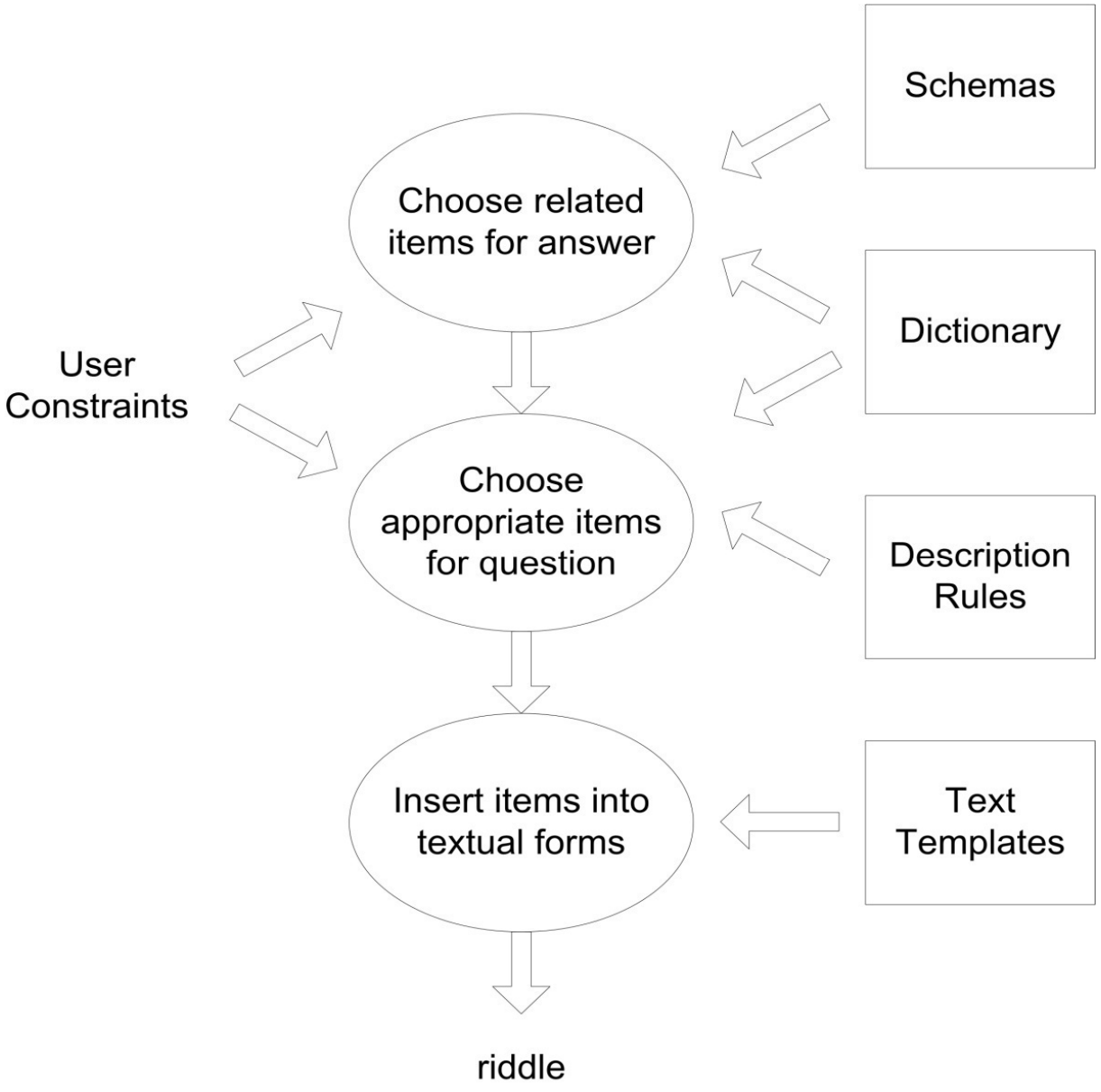


How does it work?

Example


synonym
What do you call a
strange
market
?
A
bizarre
bazaar.
homophone
synonym

Overview of Riddle Generator



Joke recipe 1

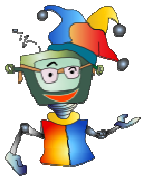
Choose **2** words that **sound the same**

means roughly the same as	means roughly the same as

What do you call a [ ] [ ] ?

Copy Copy

A [ ] [ ] !



Joke recipe 1

Choose **2** words that **sound the same**

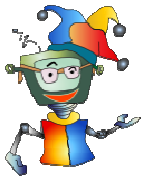
bare | **bear**

means roughly the same as | **means roughly the same as**

What do you call a [ ] [ ] ?

Copy | **Copy**

A [ ] [ ] !



Joke recipe 1

Choose **2** words that **sound the same**

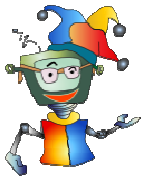
bare | **bear**

means roughly the same as | means roughly the same as

What do you call a **naked** [ ] ?

Copy | Copy

A [ ] [ ] !



Joke recipe 1

Choose **2** words that **sound the same**

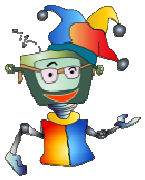
bare | **bear**

means roughly the same as | means roughly the same as

What do you call a **naked** **teddy** ?

Copy | Copy

A _____ _____ !



Joke recipe 1

Choose **2** words that
sound the same

bare | **bear**

means roughly the same as | means roughly the same as

What do you call a **naked** | **teddy** ?

Copy | Copy

A **bare** | **bear** !

Joke recipe 1

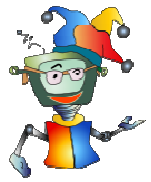
So here's my great gag….

What do you call a naked teddy?

A bare bear!

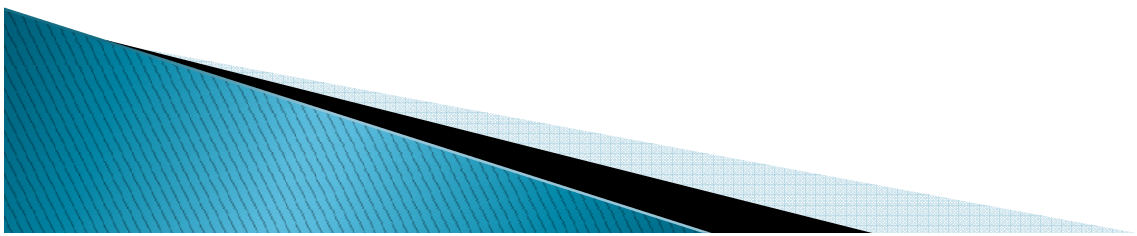
Now make your own jokes

- Fill in a Joke Recipe worksheet step-by-step.
- There are 3 different recipes to try.
- Make up as many jokes as you like!



If you get stuck…

- There is an example on the left of each Joke Recipe worksheet.
- There are examples of words to use on the back of each joke recipe.



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R. Manurung, G. Ritchie, H. Pain, A. Waller, D. O'Mara, R. Black (2008)
Applied Artificial Intelligence, *22*(9) pp. 841-869.

Evaluating the STANDUP Pun Generating Software with Children with Cerebral Palsy
Annalu Waller, Rolf Black, David A. O'Mara, Helen Pain, Graeme Ritchie, Ruli Manurung (2009)
ACM Transactions on Accessible Computing (TACCESS) Volume 1, Issue 3 (February 2009) Article No. 16.