



<http://www.diva-portal.org>

This is [Version unknown!] version of a paper presented at *European Science Education Research Association (ESERA 2015), 31 August - 4 September, 2015, Helsinki, Finland.*

Citation for the original published paper:

Anderhag, P., Berge, M. (2015)

The Role of Situated Humour and Joking for Cognitive Learning in the Science Classroom.

In:

N.B. When citing this work, cite the original published paper.

Permanent link to this version:

<http://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-108442>



Stockholms  
stad



# The Role of Situated Humour and Joking for Cognitive Learning in the Science Classroom

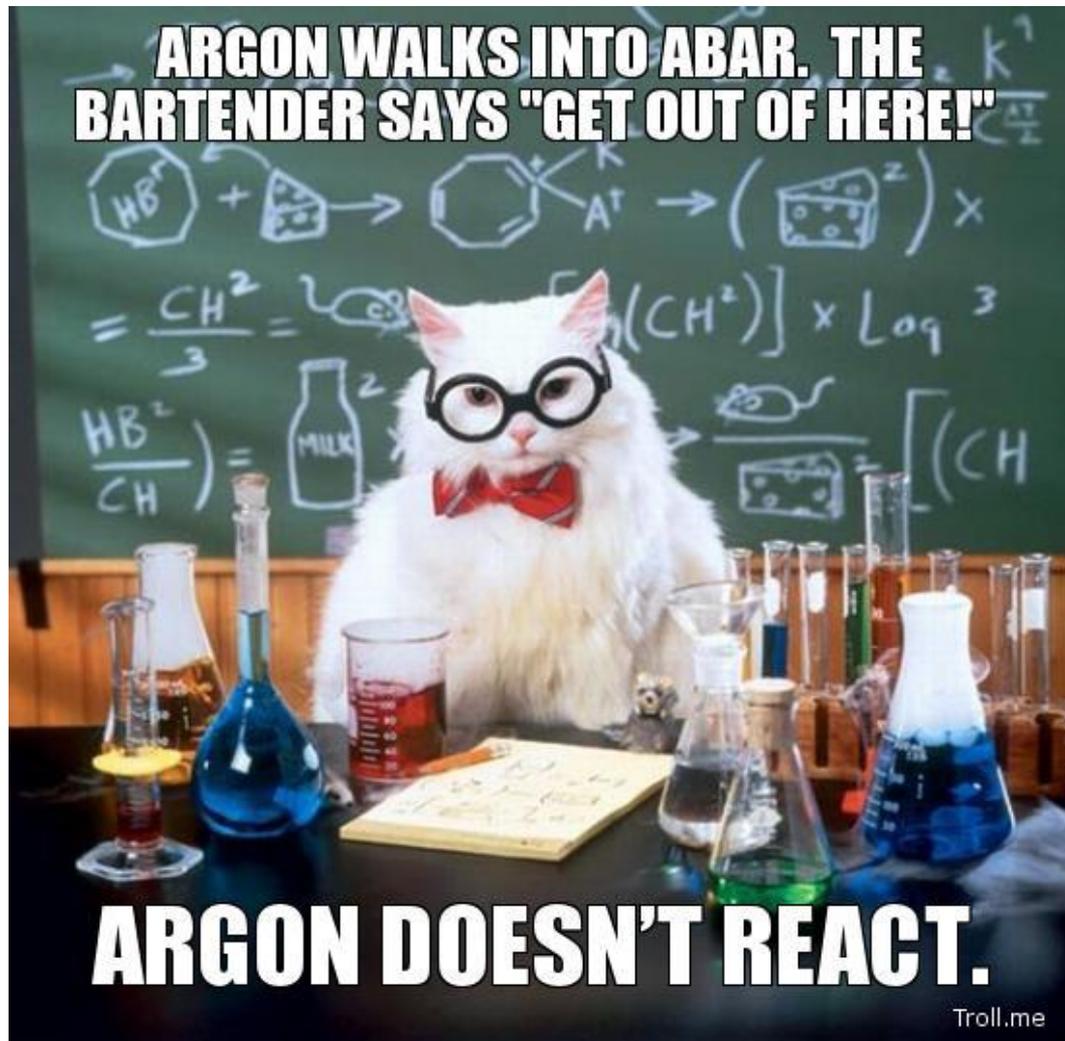
**Per Anderhag**

Department of Research and Development  
Education Administration, City of Stockholm, Sweden  
[per.anderhag@stockholm.se](mailto:per.anderhag@stockholm.se)

**Maria Berge**

Department of Science and Mathematics Education,  
Umeå University, Sweden  
[maria.berge@umu.se](mailto:maria.berge@umu.se)

**ARGON WALKS INTO A BAR. THE BARTENDER SAYS "GET OUT OF HERE!"**



# Background

- Few studies have systematically explored the relationship between humour and learning science
- Students and teachers use jokes and humour in the science classroom
- Distinguishing social belonging and status in science classroom practice (Due, 2014; Hasse; 2002, Martin, et al 2006)
- Affecting classroom climate by creating structures for interaction e.g. intimacy and solidarity, challenging and reaffirming norms and values of the science classroom (Rithcie, et al 2011; Roth et al. 2011, Wickman, 2006)

Consequences of humour and joking for students' learning in the science classroom?

# Methods

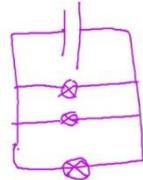
## **Study settings**

- University students learning basic mechanics and lower-secondary students (age 15-16) doing a practical on electrical circuits
- Video- and audio recordings of the students working in groups
- In both settings the students and the teachers were shown to use humour and jokes

# Methods

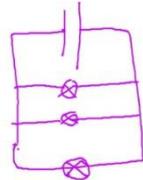
- Pragmatism framework, words and actions gain their meaning through their use and consequences in situated activities
- Practical Epistemological Analysis (PEA) was used to explore how humour were used to fill *gaps* and so establish *relations* to what *stand fast*

# Findings



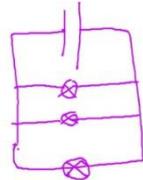
# Findings

1. Teacher: And then the figures are very nice, they're just a bit teeny-weeny tiny though.
2. Karin: Which ones?
3. Teacher: **Do you think you dare to draw bigger figures?**
4. Karin: Yes! Yes! [Laughter]



# Findings

1. Teacher: And then the figures are very nice, they're just a bit teeny-weeny tiny though.
2. Karin: Which ones?
3. Teacher: **Do you think you dare to draw bigger figures?**
4. Karin: Yes! Yes! [Laughter]



1. Emma: Good. Is the size better now?
2. Teacher: Yes, it's a little bit better although it is possible to draw this big as well
3. [shows with his hands]
4. Emma: **Mm, but isn't that stressful, bad for the environment?**[smiles]
5. Teacher: This is a process, sort of, it's on its way of becoming bigger [smiles]. Mm, absolutely!

# Findings

1. Teacher: **Do you think I can make it?**
2. Student 1: Yes
3. Student 2: Absolutely
4. Student 3: Not really
5. [laughter]
6. Student 4: No
7. Student 5: Hell no
8. Teacher: I'm good at a lot of things but this I don't manage. Now, the thing is, there are machines. There are machines that do it for us. **That is, there are machines in which a small gnome is sitting or a small man inside the machine and he shifts the wires twenty times per second.**
9. Student 1: Oh!
10. Student 2: Is it true?
11. Teacher: Yes, what if he's supposed to shift one thousand times per second?
12. Student 3: Or twenty thousand!
13. Student 4: Then you're really fast.
14. Teacher: **Talk about laser gnome!**
15. [laughter]

# Findings

1. Kristina: It [the ox] needs extra [force] in the beginning to be able to...
2. Hedvig: **Does it lose weight then, or?**
3. Inga: (laughter)
4. Jan: **It is the farmer who pushes a little in the beginning so it gets started.**
5. Inga: Oh dear

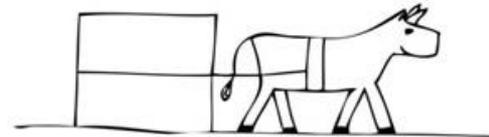
## Problems for group session in Introductory Mechanics

An ox is pulling a box with constant velocity.

1. Which forces are acting on the ox and the box and how are they related to one another?
2. Which of these forces affect the movement of the ox and the box?

Think about how the mass of the ox and the box matter, what happens if:

3. the ox doubles its mass?
4. the box doubles its mass?
5. What do the equations of motion look like?
6. How is it possible for the ox to move forward?



# Findings

1. Daniella: Ok, we agree on that, but what if you are heavier?
2. Beata: if you like put on an extra forty kilos, then it will be much easier to pull this bag
3. Daniella: But it depends if it's muscles you put on.
4. Beata: but
5. Daniella: yes, but I mean like
6. [Laughter]
7. Alma: No, it shouldn't matter
8. Beata: No it shouldn't
9. Daniella: So then it doesn't matter if I weights forty kilos, if he double his weight?
10. Alma: Well yes, but it shouldn't matter if it is muscles or fat
11. Daniella: though, but yes
12. Christoffer: according to
13. Daniella: The more muscles you have, the more you can pull
14. Alma: Yes, yes, but strictly mathematically you...
15. Beata: ...the mass...
16. Alma:...**don't have a fat mass and a muscle mass that you use for calculations** [giggles]
17. Daniella: No, no, no, I got it wrong, but like, if we use the same weight and then

# Tentative conclusions

- In both settings humorous situations arose when the participants contrasted science with actions or utterances originating from an everyday context
- In such absurd (and funny) situations the participants :
  - Negotiated norms and values of the science classroom
  - Directed action towards the purpose of the activity
  - Distinguished and filled knowledge gaps



Stockholms  
stad



# Thanks!

**Per Anderhag**

Department of Research and Development  
Education Administration, City of Stockholm, Sweden  
[per.anderhag@stockholm.se](mailto:per.anderhag@stockholm.se)

**Maria Berge**

Department of Science and Mathematics Education,  
Umeå University, Sweden  
[maria.berge@umu.se](mailto:maria.berge@umu.se)