

# Students' argumentation as they communicate about controversial agricultural issues

Willeke Rietdijk, Andri Christodoulou, Kathryn Garthwaite,  
Laurence Simonneaux

University of Southampton  
University of Auckland  
ENSFEA, University of Toulouse

# What do we know about how students communicate about SSIs?

- Socio-cultural origin of the issues discussed might affect students' positioning (Simonneaux & Simonneaux, 2009)
- Controversies and the ways in which they are addressed within educational settings need to be explored further (Albe, 2008; Hand & Levinson, 2012)
- When consensus is the aim of the task, students engage in argumentation in a more sustained manner and are more committed to finding a solution (Garcia-Mila et al., 2013).
- Online communication tools allow students to interact over time (Morin et al., 2013)

**How do the students develop their positions and express justifications in their communication:**

➤ when discussing what should be done about the badger/wolf/possum controversy?

### **Student online communication**

- UK and France blog on Badgers
- NZ and France blog on Wolves
- NZ and France blog on Possums

# Methodology

- 6 blogs: (15-71 entries)
- 2 week window of interactions; teacher's role was to monitor and to encourage the consideration of multiple perspectives
- Participants
  - 14-15 year olds (F/NZ; UK/NZ)
  - 16-17 year olds (F/UK)

Content analysis: identifying the different positions students' expressed in their written communication; types of information used as justifications in support of their positions

Looked at discursive moves that affect the nature of communication (e.g. asking questions, using refutations/counter-positions, drawing on particular types of information to support their positioning)

# Pedagogical approach – sequence of activities

---

<b>Lesson 1 (1 hour)</b> ➤ <b>Framing and Mapping of the controversy</b>	Students given a summary sheet of the issue, which includes two possible solutions, and asked to construct a map to illustrate as many actors/stakeholders in the controversy, as possible. Note any questions they are not sure about. Use laptops to research topic. Students work in groups of 4.
<b>Lesson 2 (1 hour)</b> ➤ <b>Mapping of the controversy</b> ➤ <b>Online exchange guidelines</b> ➤ <b>Individual positioning</b>	Students allowed time to complete their cartography Discussion about what it means to be ‘critical’ (e.g. say if you agree/disagree and why, provide reasons and evidence in support of your ideas; ask for clarifications if necessary) Take a position individually and justify it (what do you think should happen and why); whole class activity & written responses
<b>Online communication- blog exchange between 2 countries (2 weeks)</b>	<b>What should be done about the controversy?</b> All students from both classes to contribute at least twice (their own views and in response to others’ contributions)
<b>Lesson 3 (1 hour)</b> ➤ <b>Re-mapping of the controversy</b> ➤ <b>Individual positioning</b>	Students asked to work in the same groups of 4 to re-construct a map of the controversy Take a position individually and justify it (what do you think should happen and why); written responses

---

# Analytical framework: Badger

**(1) Positioning:** what is the student's position in relation to the controversy?

- Supporting badger culling
- Against badger culling
- Vaccinate Badgers
- Vaccinate Cows
- Protect the cows
- Relocate badgers
- Identify more effective alternatives

**(2) Nature of justifications provided**

- *Economic:* use of financial aspects in relation to culling, vaccinating, farming
- *Scientific:* use of factual knowledge in relation to the animal, culling or farming
- *Health-based:* use of health-related information
- *Ecologicistic:* use of information specific to ecology that shows an interest in protecting the environment/nature
- *Ethical:* referring to right/wrong, benefit to humans and animals
- *Legal:* using legal/political information to support a position (e.g. Brexit)
- *Professional:* referring to particular professions to support a position (e.g. farming, scientists)

**(3) Nature of interaction between students** – how the argumentation develops or progresses (use of questions, refutations, agreement)

# The Efficiency framing of the Argument – Badger

UK-French students

(Entry #) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37

Question posed by:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37		
<b>Position</b>																																							
Culling badgers	F																																						
Against culling badgers			F	F																																			
Badger Vaccination																																							
Cow vaccination																																							
Cow protection																																							
Badger relocation																																							
More effective alternative																																							
<b>Justification</b>																																							
scientific	F	E	F																																				
ecologicistic																																							
ethical/moral				F																																			
professional																																							
economic	F	F																																					
Public health																																							
legal																																							

Use of new newspaper article in blog

Efficiency framing

Instrumentalist framing

UNCERTAINTY

For/against badger culling

Vaccination of badgers or cows/  
protection of the animals

For/against badger culling

More effective  
alternative  
solutions

# The Efficiency & Instrumental Argument – Badger

Badger culling is ineffective, inefficient, and inconvenient. Not only is there evidence to suggest that sample culls don't decrease TB cases, but some results have shown an increase in cattle infection. This article from the BBC suggests that the government has invested in over £16.7m on the culling scheme between 2012 and 2014 (<http://www.bbc.co.uk/news/uk-england-34128594>) despite the limited research. Moreover, Badgers **don't hold as much human purpose as cattle** - so instead of focusing the problem on the badgers, it should be on the cows. After Brexit it will be legal to vaccinate cows, so perhaps the Government should give specifically commercial farmers the right to use the BCG vaccine, since their meat reaches supermarket shelves. It should only be for commercial famers because it will slow the chances of resistant strains. Even though it costs £600+ per cow, the long term results will be more promising.

Scientific

Economic

Legal

Scientific  
Economic

# More effective alternatives?

**UK  
student 1:**

So according to [French student]'s point badger culling is not only far too expensive, but entirely useless as well. Although vaccination of the cows is quite ineffective also, it is of course better than culling. **But do you think it is worth spending vast amounts of money on bovine TB vaccines (which aren't close enough to 100% effective) rather than looking for more effective alternatives?** In the future the vaccines could be nearly 100% but until then perhaps we should try to find something cheaper?

**UK  
student 2:**

<http://www.tbfreenland.co.uk/latest-news/vaccination/>  
The currently illegal BCG vaccine is only 56-68% effective but nevertheless better than culling. Realistically in this current time there is no programme that can be done to eradicate TB otherwise it would have been thought of. **A new vaccine is needed so any money to cull badgers should be funnelled into TB vaccination research.**

- Argumentation becomes more complex as the communication develops
- Few questions raised – students focus on the positions and justifications expressed
- Refutations used to examine positions and consider whether they agree or disagree
- Critical moments in the discussion facilitate the development of further communication
  - Vaccination of badgers
  - Vaccination of cows – Brexit and its implications (!)
  - Uncertainty

# Analytical framework: Wolf

**(1) Positioning:** what is the student's position in relation to the controversy?

- **Against killing/culling wolves**
- **For culling wolves**
- **For capturing the wolves**
- **Against capturing the wolves**
- **Protect the sheep**

**(2) Nature of justifications provided**

- *Economic:* use of financial aspects in relation to culling, vaccinating, farming
- *Scientific:* use of factual knowledge in relation to the animal, culling or farming
- *Social: use of social contexts or factors in support of a position (e.g. impact on farmer's family)*
- *Ecologicistic:* use of knowledge specific to ecology that shows an interest in protecting the environment/nature
- *Ethical:* referring to right/wrong, benefit to humans and animals
- *Legal:* using legal/political information to support a position
- *Professional:* referring to particular professions to support a position (e.g. farming, scientists)
- **Aesthetic: attributing aesthetic characteristics to the animal in support of a position (e.g. the wolf is a beautiful species)**

**(3) Nature of interaction between students** – how the argumentation develops or progresses (use of questions, refutations, agreement)

---

The Personal Relevance framing of the  
Argument – Wolf





- More questions asked between the two countries
- Sophistication of argument development does not seem to increase very much
- Key moment is the question about relevance from the NZ student

# NZ-FR Wolves

- NZ students often propose culling/decreasing wolves as well as capturing them, ...
- ... whereas the F students tend to be more against culling, often for ethical reasons – “the wolf deserves to live”, “it is just their nature [to kill the sheep], it’s not their fault”
- NZ students give ecologicistic reasons – pro culling but don’t want wolf to become extinct
- F students give more ethical and aesthetical justifications
- F students mention the social implications more – cultural relevance?

# Some interesting points for discussion...

- The framing the argument can facilitate or inhibit the communication
- Role of refutation in sustaining argumentation
- Critical moments – role of students in the communication
- Context affects communication – language; cultural distance from the controversy; commitment

Thank you!