



Reluctance to animal cloning: Beyond risk and uncertainty


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"To expect the unexpected shows a thoroughly modern intellect."

Oscar Wilde
An Ideal Husband

Introduction

- Humans and animals
 - Blurred boundaries
- Biotechnologies and animal cloning
 - Brilliant avenue  Solutions
 - Reluctance
- Questioning the idea of progress
- Debate surrounding animal cloning and biotechnologies

Presentation Outline

Introduction

I – Interest groups and cloned animals in Canada

A: Project presentation

B: Overview of arguments on animal cloning

II – Transformations in science: A new dialogue between lay public, experts and scientific knowledge

A: Between normal and post-normal science

B: Weakening of the hierarchical conception: Towards negotiation

i/ Scientific expert's privileged role in Western societies

ii/ Deficit of knowledge and its critics

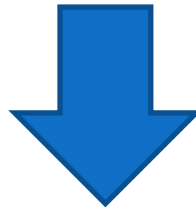
III – Risk, uncertainty, and trust

Conclusion

I – Interest groups and cloned animals in Canada

A: Project presentation

- Debate on biotechnology
 - Animal cloning
 - Genetically modified fish (PoGMs)



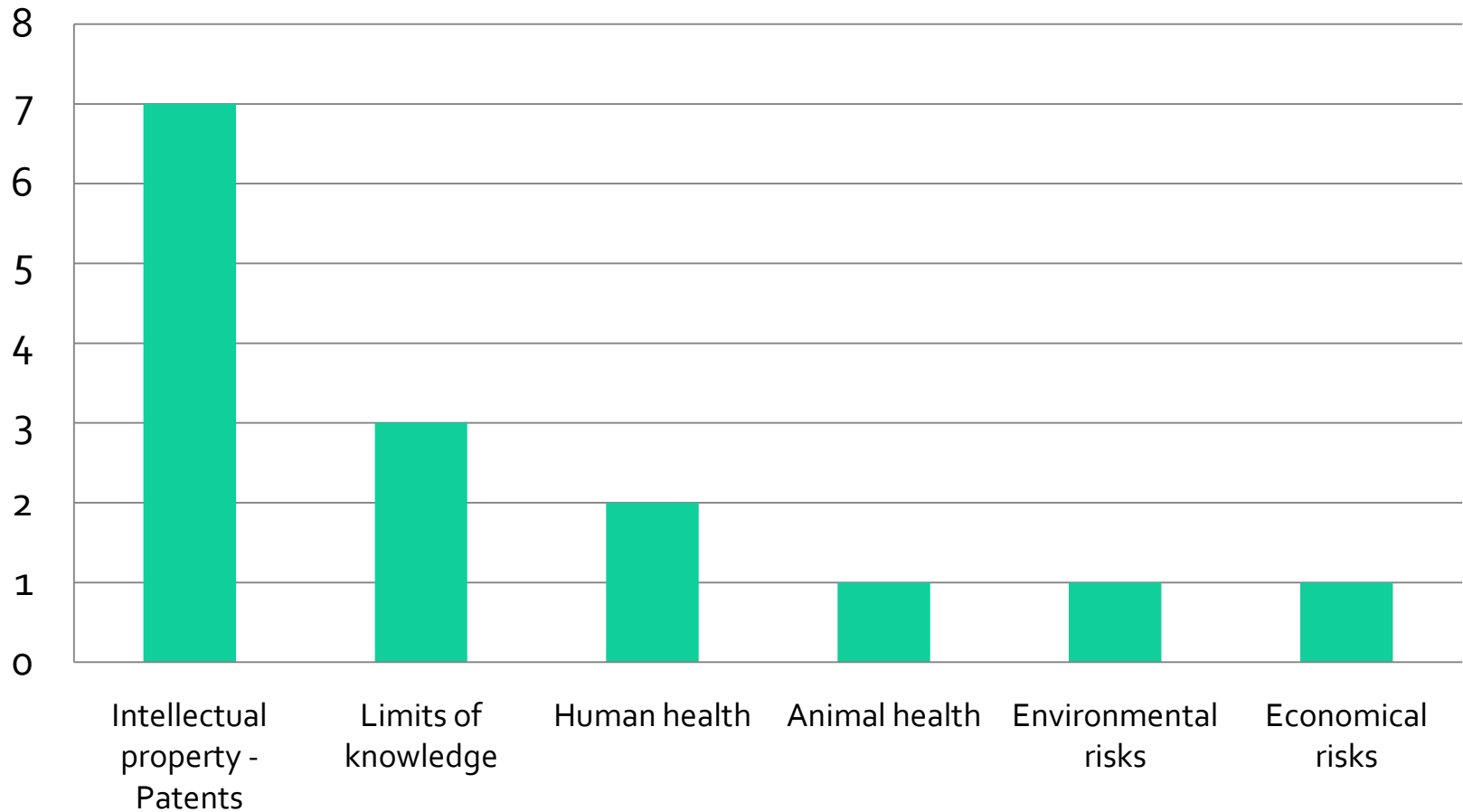
- Genetically modified organisms (GMOs)
- Aquaculture

I – Interest groups and cloned animals in Canada

B: Overview of arguments on animal cloning

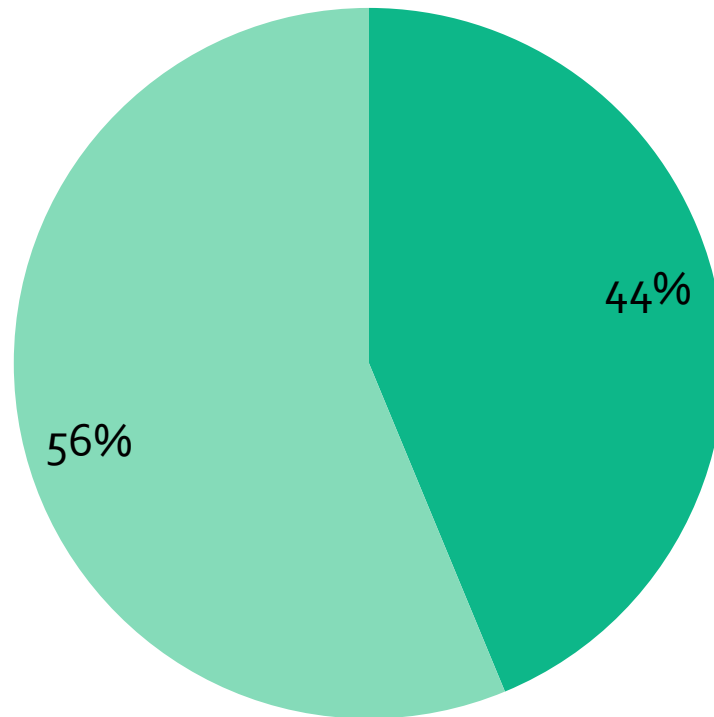
- Interest groups
 - 2 international groups:
 1. Greenpeace
 2. Friends of the Earth
 - United Church of Canada
 - Louise Vandelac
- Place of animal cloning in the biotechnologies debate:
 - 15 fragments out of 225

Graphic 1: Overview of arguments on animal cloning

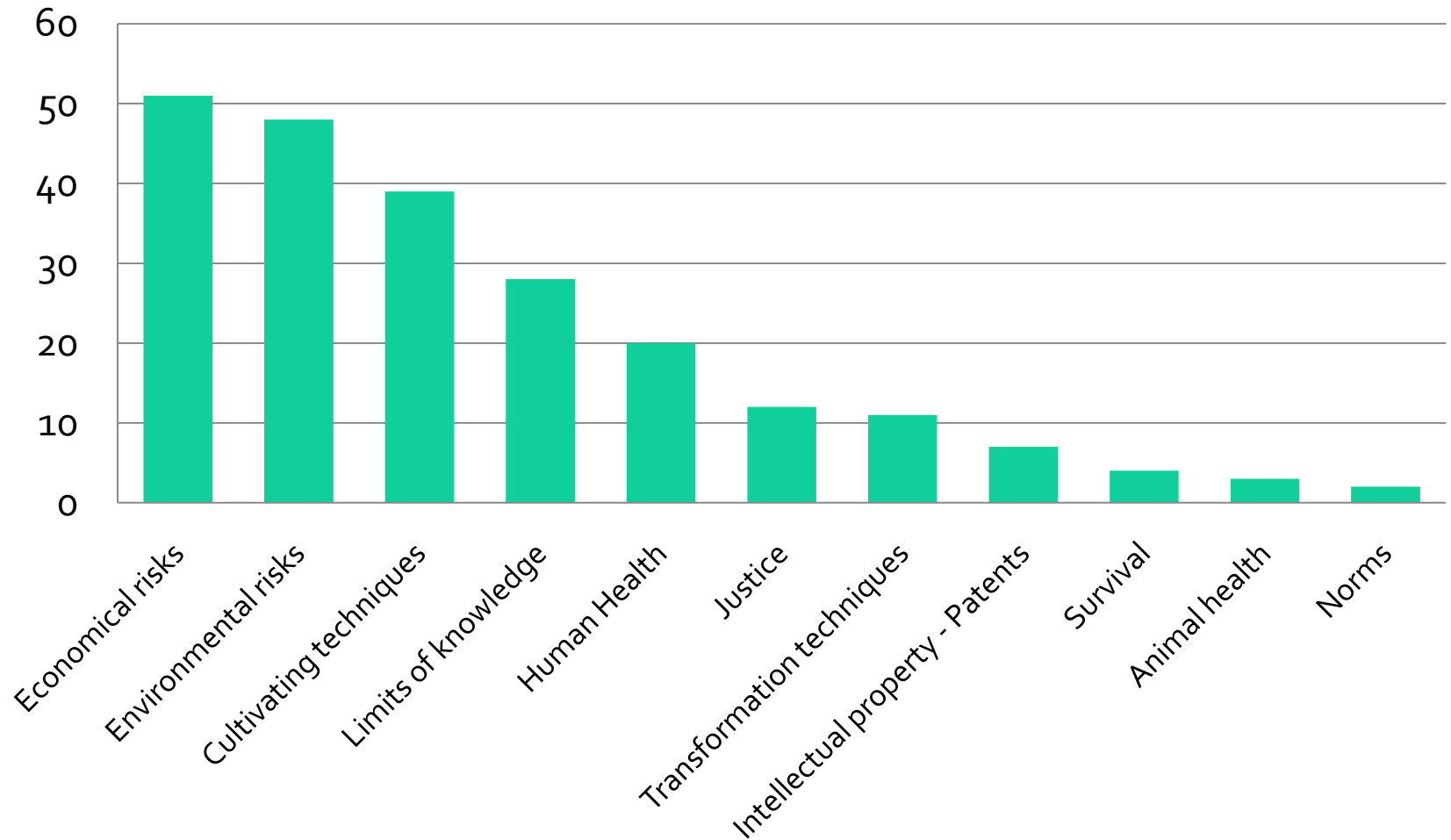


Graphic 2: Categories of arguments on animal cloning

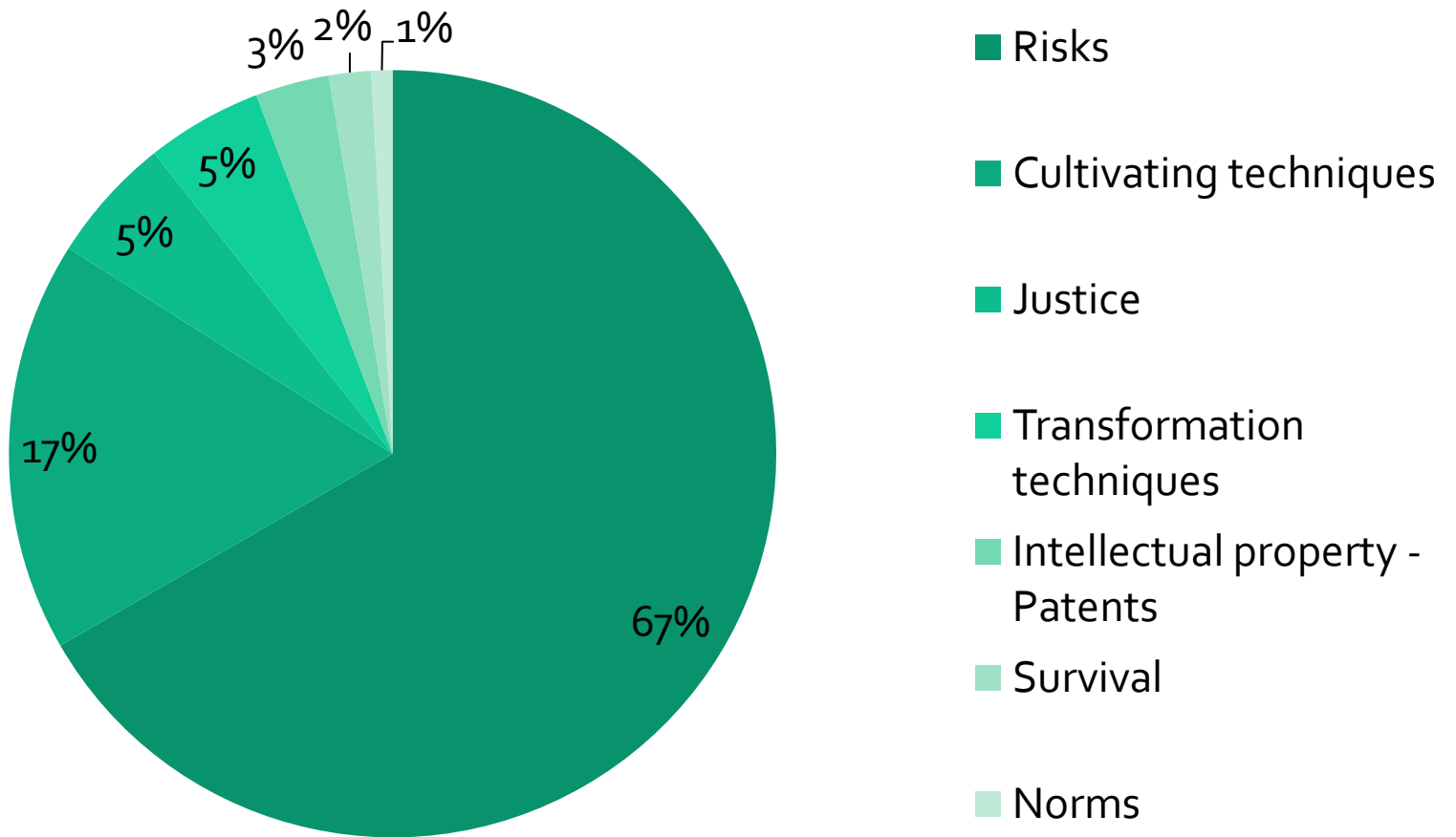
■ Intellectual property - Patents ■ Risks



Graphic 3: Overview of arguments on biotechnology



Graphic 4: Categories of arguments on biotechnologies



II – Transformations in science: A new dialogue between lay public, experts and scientific knowledge

A: Between normal and post-normal science

- Modifications in the practice and perception of science
- Normal Science
- Post-normal science



II – A: Between normal and post-normal science

Normal Science (Kuhn)

- Curiosity driven research
- Conquest of nature
- Improvement of human welfare
- Idea of progress
- Patents
- Marginalization

II – A: Between normal and post-normal science

Post-normal science (Ravetz)

- Reaction to the idea of progress
- Criticism on claims of objectivity and certainty
- Dialogue with policy-making
- Uncertain facts
- High stakes
- Evaluation through extended peers
- Loss of experts' primary voice

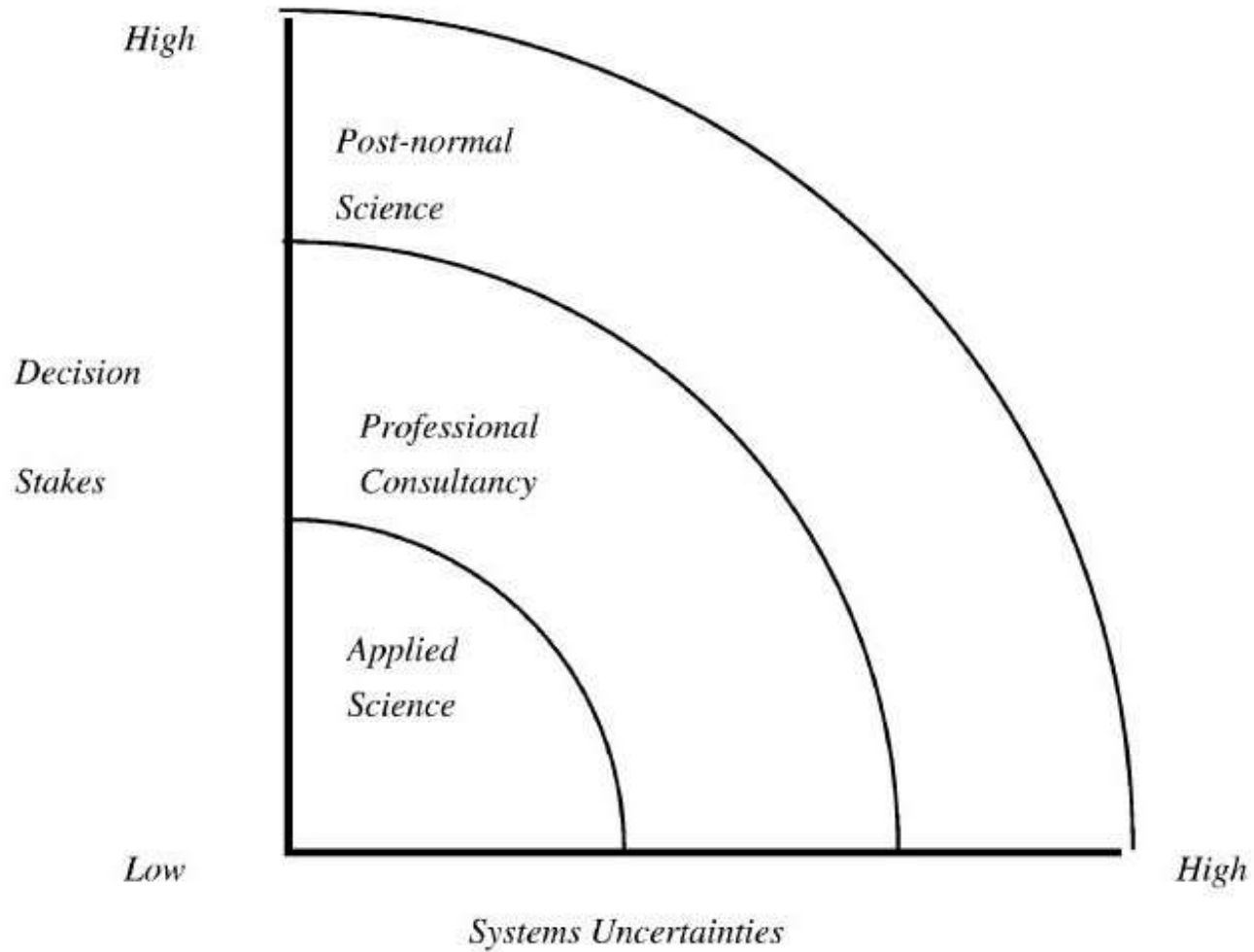


Fig. 1. Post-normal science.

II – B: Weakening of the hierarchical conception: Towards negotiation

i/ Scientific expert's privileged role in Western societies

- Giddens
 - Society is **highly dependent** upon “**complex abstract systems of technical expertise** that infiltrate and influence many aspects of a lay individual's daily life” (Ali, 1997: 485).
- Privileged position of experts
 - Primary interpreter of nature
- History and sociology of scientific knowledge
 - Relativity and contingency of knowledge
 - Questioning of experts' privileged position

II – B: Weakening of the hierarchical conception: Towards negotiation

ii/ Deficit of knowledge and its critics

The deficit of knowledge

- Linked to normal science
- Public's knowledge is:
 - Limited
 - Vacuous
- Public's arguments are:
 - Intellectual fictions
 - Emotionally driven
- Expert's knowledge is:
 - Rooted in reality
 - Rational

II – B: Weakening of the hierarchical conception: Towards negotiation

ii/ Deficit of knowledge and its critics

The deficit of knowledge

- Education of the public by scientists and the state
 - Adequate understanding of science and its applications
 - Increased public confidence in science
 - Consolidation of science's legitimacy
- Public understanding of science (PUS)
 - Evaluation of public's scientific knowledge

II – B: Weakening of the hierarchical conception: Towards negotiation

ii/ Deficit of knowledge and its critics

Critical Public Understanding of Science


- New dialogue between science and the public
- Citizens are knowledgeable
- Knowledge is:
 1. *Per se* contingent
 2. Uncertain
- Insufficiency of scientific knowledge
 - Promoting the inclusion of other sources of expertise

II – B: Weakening of the hierarchical conception: Towards negotiation

ii/ Deficit of knowledge and its critics

- Introduction of the public
 1. In policy-making
 2. In risk assessment
- Potential impacts of public engagement:
 - Positive outcomes:
 1. Attenuation of the opposition to technological and scientific development and innovations
 2. Shows greater openness and transparency
 - Negative outcome
 1. Increased engagement could enhance criticism and scepticism


III – Risk, uncertainty and trust

- Critical PUS sheds light on the core of the debate on animal cloning and biotechnology: **Questions of risk and potential harms.**
- Risk society (Beck)
 - Rapid scientific and technological changes
 - Unintended consequences
- Risk assessment to minimize potential harms
 - Considered certain and verifiable
 - Limited by:
 1. Technical knowledge
 2. Reductive definition of uncertainty

III – Risk, uncertainty and trust

- Criticism of scientific risk assessment
 - Limits of the assessment
 - Omnipresence of uncertainty in research
- Promoting a more inclusive discussion

III – Risk, uncertainty and trust

- Trust underlies questions on risks.
- Weakening of lay public's trust in science and its institutions
 - Deficit of trust
- Importance of the recognition of credibility and trustworthiness
 - Weakened trust  Weakened credibility
- Promotion of a wider conception of uncertainty

Conclusion

- Reluctance towards animal cloning must be understood on the backdrop of a more global discussion relating to:
 - Role of scientific experts in society
 - Limited conception of risk
 - Affected trust in scientific institutions
- “Trojan Horse” narrative (Macnaghten)
 - Innovations → Unforeseen and potentially irreversible effects
- Criticism towards science as an end



Thank you for your time!