An evolutionary understanding of the gap between experts and lay people in assessing the risks of GMOs

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Opposition to GMOs
- Health risks
- Socio-economic hazards
- Environmental concerns

Unsubstantiated by scientific research, but opposition highly resilient, with far-reaching political consequences

Biotechnology: a complex issue
- What is biotechnology?
- How does it work?
- How dangerous is it?

Intuitive responses to GMOs (fuelled by anti-GMO campaigns)

Psychological essentialism
- Organisms contain an unobservable, immutable core that determines their development and behavior
- DNA interpreted as an essence
- Cisgenic preferred over transgenic apples
- Tomatoes with fish DNA taste like fish

Religious intuitions
- Religion as by-product of mental make-up
- Nature as a purposeful natural and moral order, or even living entity
- "Unnatural", scientists playing God, Frankenfood

Disgust
- Avoidance of pathogens and poisons: food!
- Uneven fitness costs between false negatives and false positives → hair trigger
- Contaminated essences and moral disgust
- Disgust triggering imagery → "contamination" of the environment
- "Yuck!"

Experts vs. lay people

The reflective mind
- Intellectual effort
- Years of training

Human psychology?

Evolutionary perspective
- Mind comprises a set of fast and automatic cognitive mechanisms that evolved in response to particular adaptive problems
- Intuitive mind is prone to error when dealing with complex and abstract issues

How to address intuitive GMO opposition?
- Science education with strategies specifically targeted at intuitive understanding
- Emphasize the benefits for health, environment, farmers and consumers, in particular in developing countries