



## Why I testified in the Argentina abortion debate

Critical thinking and clear definitions still have value in entrenched, polarized discussions, says biologist Alberto Kornblihtt.

Last month, I testified in public hearings leading up to the Argentinian Parliament's 23-hour session on the decriminalization of abortion, a topic few would have expected to come to the floor even a year ago. Hundreds of thousands of people massed in the streets outside calling for abortion to be legalized. They celebrated on 14 June when the Chamber of Deputies voted narrowly in favour of abortion rights.

It is a debate roiling in other countries as well, and my experience shows that basic science has a role in how people think through their views. Radio and television stations in Argentina reproduced my speech. The video of my talk was shared more than 2.7 million times on Facebook in Argentina. It spread to Spain and Brazil, where someone added Portuguese subtitles.

Argentina is the birthplace of Pope Francis. Support for the Catholic Church is written into the constitution, and abortion is illegal except for cases of rape and threats to a woman's life or for health reasons. Even if the legislation stalls in the more-conservative Senate next August, the deputies' vote represents a cultural shift, similar to that seen in May's vote in Ireland, also a Catholic country.

In public hearings before Parliament's vote, more than 700 citizens were given 7 minutes apiece to present arguments for and against decriminalization. I was invited to speak in the last session on 31 May. Numerous social activists and doctors, including the minister of health — one of the few cabinet members in favour of legalization — had focused on the public-health problem of clandestine abortions, a cause of maternal deaths.

I focused instead on confusion between the concept of an embryo and a legal person — in many countries, a status acquired only after a live birth. I argued that some terms used in value-based arguments do not make much sense in biology. For example, an embryo is made of living cells, but so are placentas, sperm and eggs. And a person can be declared dead when his or her heart stops beating or brain activity ceases, even though cells in the body remain alive for a substantial amount of time afterwards. So it does not follow that everything with live human cells is a human.

I also explained that the fertilization of an egg by a sperm is a necessary but not sufficient condition to produce a baby. We are placental mammals: embryos can only develop to maturity within a woman's womb. So far, no one has created a placental mammal entirely outside a uterus. Furthermore, a developing embryo depends on placental exchange. Oxygen and food move from the expectant mother's bloodstream into the placenta and then to the embryo. Carbon dioxide and toxic molecules move from the embryo into the placenta and then into the mother's bloodstream.

Therefore, I said that in my view, an embryo is almost like an organ

of the mother: its cells depend on her bloodstream to receive nutrients and remove wastes. I also said that without the right to terminate pregnancy, women are essentially placed in bondage to their embryos.

To my surprise, many legislators, even those of the government party whose scientific and economic policies I have criticized, cheered my words. At least ten deputies from both ends of the political spectrum quoted me in the final stretch of the debate.

I received dozens of e-mails from people I did not know. One woman wrote to me to say that a highlight of the debate for her was appreciating how a legal exception for rape already supports the idea that there is a conceptual difference between an embryo and a fully formed human. Only if an embryo were not a person could one resulting from rape have fewer rights than one resulting from consensual intercourse.

Of course, not everybody was happy. Some postings online called me a liar for neglecting the fact that the fertilized egg has the complete genetic information of a human, which, for them, is sufficient to consider the embryo as human life and abortion as murder.

I understand that basic biological arguments are, rightly, only one part of how people form their views and how policymakers come to decisions. I also cannot ignore the fact that my values match my arguments. Even before I learned about cells, I perceived a difference between a person and what was inside the womb of a pregnant woman, and reasoned that the continuation of pregnancy was not an equivalent good to the life and health of the mother.

People who are not trained in science want certainties. Yet I tried not to hide information or overstate. I could explain with some certainty that an embryo is not the same as a fully formed human, but I could not define a precise point in a gradual process when an embryo becomes a human — although perhaps the most dramatic change occurs at birth, when the baby stops being dependent on the placenta and starts to breathe through its lungs and feed through its mouth.

There is pressure to value science only for its potential to produce goods and services. I am convinced of the value of science to explain how facts can influence beliefs. Thus I aim to engage people in ways that encourage informed opinion and critical thinking — including about doubts and uncertainties. That, more than any practical application, is science's most powerful tool for making decisions related to everyday life. The response to my testimony corroborates this view. ■

*Alberto Kornblihtt is a molecular biologist at Argentina's National Scientific and Technical Research Council (CONICET) and at the Faculty of Exact and Natural Sciences, University of Buenos Aires. e-mail: ark@fbmc.fcen.uba.ar*

I AM CONVINCED OF  
THE VALUE OF  
SCIENCE  
TO EXPLAIN HOW  
FACTS CAN  
INFLUENCE  
BELIEFS.