

# Paradigm Shift in the Abortion Debate in Brazil

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## Introduction

A pregnant woman is not always able to face motherhood. For a variety of reasons the future of mother and child can seem so insecure that she resorts to an induced abortion, in Latin *abortus provocatus*, defined as the termination of pregnancy before the fetus is viable, brought on intentionally by medication or instrumentation (Medical Dictionary). In Brazil, this happens in an estimated million or more cases each year (IBGE). As most of the abortions are performed under unsafe conditions (WHO 2011) many women either die or need hospitalization after the intervention, and unsafe abortion, in fact, is one of the top five causes of maternal death in Brazil (Barroso 2014: 261). At present, Brazilian law condemns *abortus provocatus*, except in case of 1) the pregnancy being the result of a rape, 2) the mother's life is at risk and 3) predictable anencephaly, a serious birth defect in which a baby is born with the congenital absence of brain and parts of skull and scalp and dies shortly after birth (IBID). The penalties for seeking and practicing abortion are quite severe, from one to three years of imprisonment, amounting to the double, in case the woman dies (HRW 2009). Not only do these conditions cause personal trauma for a considerable part of Brazil's population, they also weigh heavily on the public health system. Therefore, a debate has been ongoing for years about the way society ought to face the issue. Voices have been raised from the medical profession, various religious groups, human rights organizations and feminists, against or in favor of making it legal for women to terminate an unwanted pregnancy. Nonetheless, a change is still pending.

Recently, alarming news rekindled the debate and attracted the attention of global leaders: as of November, 21, 2015, Brazil's health authorities raised alarm over 739 cases of suspected microcephaly, a syndrome where babies are born with abnormally small skulls and reduced brains (Ministry of Health). On November 17, Zika flu virus had been found in samples from two pregnant women, whose ultrasonic examinations indicated microcephalic fetuses (IBID). Although considered an important finding, all hypotheses were being meticulously studied by the Ministry of Health. But as the months went by, epidemiological reports from the Brazilian Ministry of Health (IBID) became more and more definite about the relationship between microcephaly and Zika infections. By January 2, 2016, a total of 3.174 cases of microcephaly suspected

to be related to Zika virus had been reported, and on April 2, 2016 the number reached 6.906 (Ministry of Health). The WHO has now officially confirmed the supposition of a connection, and as the Zika flu takes on the dimensions of an epidemic, there is growing concern about the problem, in Brazil as well as internationally. This situation recalls precedents that led to change. Therefore, we decided to study the matter and we have found basis for the following problem statement:

*Using the theory of paradigm shift, this paper will argue that the Zika epidemic has the potential to act as the crisis that could trigger a change in the abortion debate in Brazil, leading to a new moral consensus.*

In order to answer the problem statement, the theory, central concepts and methodological considerations at play in this paper will first and foremost be presented. Thereafter, the analysis starts by shedding light on chosen periods from the historical development of the debate that led to the current paradigm on abortion in Brazil. Furthermore, the topical and highly discussed Zika virus will be analyzed with the concept of historical crisis. As a logical synthesis of the abovementioned two arguments, the probability of a paradigm shift to occur in the abortion debate in Brazil will be considered. Discussion and evaluation will take place continuously. Lastly, other possible outcomes of the current debate will be presented as alternatives to the suggested paradigm shift.

## **Theoretical Background**

In order to argue that the Zika virus will create a radical change in the abortion debate, the theory of paradigm shift as developed by Thomas Kuhn in the book *The Structure of Scientific Revolutions* (1970) together with the concept of moral consensus as presented by Ivan Dieb Miziara and Carmen Silva Molleis Galego Miziara in the article *Moral consensus theory: paradigm cases of abortion and orthothanasia in Brazil* (2013) will be applied.

## Paradigm

The ordinary use of the word *paradigm* is to designate a “typical example or pattern of something; a pattern or model” (Oxford Dictionaries). For the philosopher and historian of science, Thomas Kuhn, the term plays “a key part in the practice which he calls ‘normal’ science” (Marshall 1994: 375). For Kuhn normal science means:

[...] research firmly based on one or more past scientific achievements, achievements that some particular scientific community acknowledges for a time as supplying the foundation for its further practice (1970: 10).

The notion of paradigm therefore covers the idea that in non-revolutionary periods in science, that is in times of normal science, there is a consensus in the scientific community about the ways of conduct, the theoretical and methodological rules that should be followed, the themes which are explored, the way they are researched etc.

## Moral Consensus

Together with the notion of moral consensus, the concept of paradigm will be used to serve our analysis of the abortion debate in Brazil. Paradigm will therefore be understood as the prerequisite of society’s consensus on values, norms and beliefs on a specific matter and the notion of moral consensus will be applied to reflect the majority view on the rules and sets of duties within a particular society, with a focus on the moral and ethical codes. It is indeed the moral consensus concept as developed by Miziara and Miziara (2013: 59) that offers the possibility to appropriate the concept of paradigm from the realm of exact science to shed light on the societal and moral question presented by abortion. The notion of moral consensus will add complexity and depth to the paradigm analysis and the focus will be on arguing for the paradigm shift within the moral consensus in the Brazilian society. Paradigms help establish and create meaning, as they provide the framework within which the societal rules, values and norms are created and directions are negotiated. The idea of the shared paradigm, that is the consensus on commitment and practices, on values and norms, will be used

to highlight those parts of the historical development of the abortion debate in Brazil that made the current paradigm possible.

### **Historical Crisis & Paradigm Shift**

With the concept of historical crisis, Kuhn debunks the myth of science as being cumulative, and proves instead that it is the scientific revolutions and historical crisis that lead to a paradigm shift (Kuhn 1970: 12). The historical crisis appears in times when the current paradigm can no longer explain anomalies and provide meaning. In other words, according to Kuhn, there are two ways through which a paradigm change can occur: through discovery (novelty of fact) and by invention (novelty of theory) (IBID: 52). Discovery begins with the awareness of an anomaly, that is “with the recognition that nature has somehow violated the paradigm-induced expectations that govern modern science” (IBID: 53), that is by discovering new sorts of facts that cannot be explained by the current paradigm.

Meditating on Kuhn’s theory about invention, or novelty of theory, as provoking paradigm change, Frank Pajares states:

As is the case with discovery, a change in an existing theory that results in the invention of a new theory is also brought about by the awareness of an anomaly. The emergence of new theory is generated by the persistent failures of the puzzles of normal science to be solved as they should (Pajares: 4).

In this paper it will be argued that the paradigm change will come about not by novelty of theory, but through the awareness of a powerful anomaly, a new fact that the ongoing paradigm cannot handle. Identifying the Zika epidemic as the historical crisis, allows for arguing that there is a need for a new paradigm that can explain these current anomalies and provide a framework to deal with them (Kuhn 1970: 23).

According to the authors of the theory of moral consensus, the discussions leading to a minimum moral consensus appear exclusively in times of a historical crisis.

Furthermore, the theory acknowledges the idea that if the discussions provoked by the crisis do not lead to a minimum consensus, then the old rules and duties remain unchanged. Likewise, according to Thomas Kuhn, the transition from a paradigm to crisis to a new paradigm, from which a new tradition of normal science can emerge, happens through:

[...] a reconstruction of the field from new fundamentals, a reconstruction that changes some of the field's most elementary theoretical generalizations as well as many of its paradigm methods and applications (Kuhn 1970: 85).

Using the theory of paradigm shift and the concept of historical crisis together with the concept of moral consensus, one can argue that new moral consensuses are born in the discussion provoked by a historical crisis. Hence, this paper's main goal is to argue that the Zika virus and its consequences for the Brazilian society can potentially act as the historical crisis that provokes discussions on moral consensus and might lead to the birth of a new consensus, a new paradigm.

### **Methodological considerations**

Combining the theory that deals with scientific revolutions with the concept of moral consensus in order to explain the current abortion debate in Brazil and its possible outcome as a paradigm shift in the societal view on abortion of course has advantages and disadvantages.

On one hand, the theory of paradigm shift is generalist and has the advantage of being flexible and applicable in the explanation of a range of phenomena, but on the other hand, the generalist approach constitutes the disadvantage of omitting to take into account the specificities of each case. Using a theory from the realm of exact sciences and social sciences to explain moral consensus, questions of ethics and beliefs, adds value and a new perspective on the subject at hand, but also deprives the analysis of understanding the absolute dimension - the beliefs and ethics that are at play.

Although the chosen approach serves this paper's purposes and scope perfectly, it stands in the way of 'predicting' and 'evaluating' the concrete situation in Brazil, delving in it and taking more nuances into account, which in the end could turn out to be crucial for the development of the debate. Nevertheless, it will provide the reader with an interesting overview, a zoomed out perspective of the past months' development and it will shed light on how the Zika epidemic could influence the future abortion debate.

Having covered the theoretical fundamentals of the paper, an analysis of the historical development of the abortion debate in Brazil follows.

## **Abortion in Brazil – Historical Overview**

Induced abortion has been practiced in Brazil for centuries, although condemned by law and moral codes. The majority of victims of unsafe abortions have been poor and unprivileged. Upper class women, who did not want to go through a pregnancy, have had and still have access to proficient assistance, in Brazil or abroad.

In the year 1500 Pedro Cabral's fleet arrived in what is now Brazil, and during the exploration of the place and its people, *o padre* José de Anchieta recorded the not uncommon practice of abortion. Whether it was for fear of childbirth or in resentment to the father-to-be, a pregnant woman might resort to ingesting a potion, squeezing the womb or lifting a heavy object in order to provoke an abortion (Barros et al.).

Traditionally, female healers tended the sick women. In the nineteenth century, with the introduction of modern European medicine, Brazilian midwives and doctors rivaled in treating women's diseases. Midwives were known to treat women's 'secret' ailments, which some doctors noted were abortions. Occasionally, doctors would avoid reporting sequences of an induced abortion to the authorities out of consideration for his client's reputation. Sometimes doctors would even be prepared to provide an abortion (Peard 1999: 126). But in the nation's overall catholic opinion, abortion

was considered a sin, and the penal code from 1890 criminalized abortion in all circumstances (HRW 2009).

In the early twentieth century politics in Brazil were rather progressive, including feminist concerns, and in 1940 the penal code was amended in order to allow abortion in the cases of risk for the mother's life and of rape. During Brazil's military dictatorship from 1964 to 1985, legislation as well as law enforcement became more restrictive at a time when feminism won important battles elsewhere. In France and England, where abortion had been legalized in case of rape after World War I, abortion was further legalized between the late 1960s and the 1980s (Htun 2003: 142). That was also the case in communist countries. The anti-communist Brazilian dictatorship and the conservative institutional Catholic Church did not favor revision of abortion legislation. During these same years, however, liberation theologians held another stance in favor of the poor and for Human Rights and democracy (Correa 2010: 111).

After 1985 the democratization of politics in Brazil made it possible to advocate for less restrictive norms concerning abortion. Nonetheless, only after an eight year-long debate, from 2004 to 2012, was anencephaly accepted as an indication for legal abortion. In 2010 the Human Rights Program III called for decriminalization of abortion - but soon debates became heated, and the language was modified to 'revise punitive legislation': "Abortion is considered to be a public health problem in relation to which access to health services is to be ensured" (IBID: 114). Opponents of abortion argue that legalizing the abortion of an anencephalic fetus would open the door for the legalization of abortion for other reasons. And religious groups in Brazil continue to oppose abortion. The Pentecostal lobby in Parliament embraces politicians from a wide range of parties, who reunite over this issue. Their forceful fight against legalization of abortion is based on the moral strictness and sanctity of life ethic that characterize the Pentecostal faith tradition. Between 1960 and 2000 followers of Protestant faiths, mainly Pentecostal, have increased from a mere 4 percent of the population in 1960 to 15.4 percent in 2000 (IBGE). So from their political representatives a strong resistance can be expected, alongside the Catholics who believe that abortion is a grave sin (Ogland & Verona 2011: 813)

Today, abortion remains illegal except under the abovementioned specific circumstances, and when on February 6, 2016, the Brazilian minister of Public Health, Marcelo Castro, was confronted with the WHO's recommendation, in view of the Zika epidemic, of permitting abortion when a fetus was diagnosed with microcephaly, the minister reminded the reporters that “a lei proíbe aborto” (*the law prohibits abortion*) (Neto 2016).

In this paper, we will consider the odds for a change in Brazilian legislation. The matter is urgent. Estimates of the illegal and therefore secret abortions vary between 1 and 4 million (HRW 2009). According to official records, in 2013 a total of 1.058.000 of *Brasileiras* aged 18-49 underwent induced abortion; this does not account for teenagers under 18, probably the most vulnerable group, nor do we know about the number of abortions that eluded recording (IBGE). The cost of treating the victims of failed abortions is high, and even within the narrow limits of legislation, resources are scarce, even if just to tend to the patients with the required indications. Resistance to change, however, is strong and to a large extent based on an immovable religious foundation.

## Zika as the crisis

After the analysis of the historical development of the current paradigm on abortion in Brazil, the following argument will focus on the potential of the Zika epidemic and the growing number of microcephaly cases among newborn babies to influence the abovementioned paradigm on abortion. In order to prove this influence, it will firstly be argued that the Zika epidemic and its consequences can be analyzed using Kuhn's notion of an anomaly powerful enough to provoke a historical crisis. Secondly, it will be proved through three empirical cases that crises hold an enormous potential to impact public opinion and political action both in Brazil and abroad.

As there is no such thing as universal truth or a paradigm that can provide the meaning and the explanatory framework for the whole society, deviations / anomalies

from the current paradigm exist all the time and they are simply treated as exceptions by the members sharing the paradigm. Therefore, according to Kuhn, for an anomaly to evoke a crisis it needs to be more than just an anomaly (Kuhn 1970: 82). He does not provide a prescription on how to define such an anomaly that has the potential to provoke a crisis and eventually lead to a paradigm shift, but he suggests some descriptive characteristics, among which the following: “[...] often an anomaly will clearly call into question explicit and fundamental generalizations of the paradigm” (IBID). Taking this description into account, we argue that the Zika epidemic and the microcephaly cases in Brazil definitely question the explicit and fundamental generalizations of the current paradigm regarding abortion, namely in it being immoral, illegal and punishable.

So is the anomaly of the Zika epidemic and microcephaly powerful enough to create a historical crisis? Kuhn comments that all crises look alike in the beginning, that they all start with the blurring of the ongoing paradigm and the loosening of the rules (IBID: 84). When an anomaly appears, it is first isolated, and members are on the lookout for an explanation - in this stage, the rules are pushed and the borders of the current paradigm are stretched in order to try to appropriate and explain the anomaly in question. In order to argue that the Zika epidemic and microcephaly are an anomaly strong enough to turn into a historical crisis, the addition of anencephaly to the list of indications for legal abortions back in 2012 could be used as an example (Barroso 2014: 258-260). Accepting that in the case of this specific medical condition, abortion should be legal and allowed perfectly shows the stretching of the rules and the adaptation of anomalies and deviations to fit the ongoing paradigm.

Additionally, one could argue that the blurring of the borders of the current abortion paradigm as a direct consequence of the Zika epidemic and microcephaly is already happening. Pope Francis expressed in the media earlier this year his approval and even encouragement of the use of contraception for married women who have contracted the Zika virus (Catholic News Agency 2016). This statement would have been unthinkable only a year ago, when his position on contraception was much more conservative: “The pope called on families to be ‘sanctuaries for respect for life’, and praised the church for maintaining its opposition to modern birth control” (Kirch-

gaessner 2015). This radical change and openness towards contraception wonderfully exemplifies how a paradigm could be stretched to comply with reality.

So far, it has been argued that the Zika epidemic and microcephaly could be treated as an anomaly powerful enough to evoke a historical crisis and that in its virtue as such it shares some crucial qualities with Kuhn's definition of historical crisis. In the course of history, important health issues have influenced public opinion, contributing decisively to the political debate. In the following, we will present three such cases.

### **Yellow fever contributed to slave trade prohibition**

The article *O doutor Audouard em Barcelona (1821) e a repercussão de sua tese sobre a febre amarela no Brasil* by cultural historian Kaori Kodama (2008) reveals the influence of an epidemic on political decisions.

In the year 1821, a violent yellow fever epidemic killed over 17.000 of Barcelona's population of 100.000. The fever spread from the port to the outskirts, progressing into the wealthier quarters of town (IBID: 806). Horrified inhabitants fled from the city, and soon authorities in neighboring France sent a medical commission to investigate the causes and possible measures against its propagation (IBID: 807). The disease was believed to have arrived with a cargo from Havana, and the French military physician Mathieu François Maxime Audouard defended the following hypothesis: on vessels formerly used for transportation of slaves from Africa to the Americas, due to the bad hygiene on board, germs from African slaves, sick with yellow fever, would infect the wood of the ships, and from there, pass on to people who came into contact with goods or passengers (IBID: 808).

Audouard knew that most of the slave trade went by Brazil, so he invited his Brazilian colleagues to collect evidence for his hypothesis (Kodama IBID: 810). Many were skeptic. But in the midst of the 19th century, debate about termination of slave trade had become a hot topic in the Brazilian media, especially in *O Philantropo*, a journal edited by a medical doctor. So, when a vehement yellow fever ravaged Rio in 1850,

the time was ripe for arguing along the lines laid out by Audouard. The disease was called "a epidemia reinante ou a febre africana" and the connection between "a epidemia reinante" and slave trade was emphasized (Kodama 2008: 812).

Although many, also in the medical profession, doubted the validity of the argument, it is considered a weighty contribution to the public debate that eventually ended slave trafficking (IBID).

### **Rubella became an indication for *abortus provocatus* and subsequent general legalization**

Until the invention of a vaccine, rubella epidemics were frequent in many countries. In the mid-twentieth century, it became evident that if a pregnant woman caught the rubella virus during the first 3 months, she risked giving birth to a child with serious, irreversible handicaps, such as deafness, blindness or even microcephaly (Fonseca 2016). In 1959, the pioneer of medical genetics, Julia Bell, explained in the British Medical Journal, that "Abortion, [...] had become the generally recognized treatment for the risk of fetal malformation induced by infection with the rubella virus [...]" (Löwy 2016), thereby stating clearly, that many British doctors and clinics acted illegally. This started a debate about legalization of induced abortion. Only eight years later, abortion during the first 24 weeks of gestation was legalized, and women became free to make their personal choice, - not only in the case of rubella (IBID).

### **New medical technologies presented a dilemma which led the way to legalizing orthothanasia**

When medical professionals have to decide about the 'right' treatment of their patients, they are guided by codes of medical ethics, originated from the Hippocratic Oath, but constantly changing "to accommodate and articulate changing views of medicine and society" (Markel 2004: 2028). The possibility of keeping a terminal patient alive raises a dilemma for health professionals. Since antiquity, patients "con-

fronted with terminal illness preferred a quick, painless death by means of poison to letting nature take its course” (Markel 2004: 2027). The question is: should doctors assist these patients by administering the poison? The original Hippocratic Oath says no, but most actual versions omit the issue (IBID).

Cases of ‘brain dead’ terminal patients with an irreversible illness have presented dilemmas to the medical profession since the development of technologies that make it possible to keep these patients clinically alive, but with no perspective of bringing them back to a conscious existence. Ivan Dieb Miziara and Carmen Silvia Miziara (2013) expose the development of moral consensus around such cases in Brazil. The practice of orthothanasia, or the withdrawal of care in a terminal illness to permit a ‘passive death’, was banned by law and the Code of Medical Ethics in Brazil for many years. In 2007 an extensive public debate started, involving doctors and lawyers and media surveys demonstrating that public opinion was in favor of orthothanasia. In 2009 the Code of Medical Ethics was modified to include the principle of permitting a passive death. According to Miziara and Miziara, “This modification established orthothanasia as appropriate in medical practice; it is now accepted by Brazilian society” (IBID: 60).

## **Paradigm shift?**

As already argued, historical crises in public health issues have the potential to radically influence moral consensus, public opinion and policies. So taking up the discussion from where it was left, that is: the Zika epidemic is a historical crisis, because of its impact on public health and its similarities with previous cases, but also because it fits into Kuhn’s description of how a historical crisis start, we will now proceed to our third argument. The argument is a logical synthesis of the previous two and follows Kuhn’s theory of how paradigm shifts come about.

So, in addition to starting similarly, all crises have, according to Kuhn, one of these three possible endings. In the first scenario, the current paradigm simply handles the

crisis and all goes back to normal. In the second case, the anomaly at hand persists and it is left to be resolved at a later moment (Kuhn 1970: 84). These two outcomes of the historical crisis will be taken into account in the last part of this paper, their probability will be commented, exemplified and evaluated. The third outcome is the one providing the basis for the paper's main argument. It states that when the current paradigm cannot explain the historical crisis, then a new candidate for a paradigm emerges and there is an ensuing battle over its acceptance (IBID). It is important to stress that a paradigm is declared invalid only if an alternate candidate is available to take its place, which goes to say that this is not a cumulative process, but quite the opposite - a revolutionary process where all the fundamentals of the leading paradigm are replaced by new ones. Given the conditions, mentioned earlier in this paper, we argue that a paradigm shift is highly probable. Understanding the state of the current paradigm and treating the anomaly as a potential historical crisis, the outcome of the debate, created by this crisis, could predominantly lead to a radical change in the paradigm. The paradigm will not be simply stretched or changed in its intrinsic characteristics, it will be replaced by a new one. Based on experience from the rest of the world, the candidate for a new paradigm is of course the legalization of abortion altogether. As Kuhn predicts, not only should a new candidate be in place, but there will also be a battle, especially because of the strong opposition coming from the already established community. Replacing a century old paradigm is not an easy task and as we have earlier shown - there have been a few battles with different agents and factors already. Of course, there have been other critical moments in the history of the abortion debate in Brazil where a paradigm shift did not occur, even though all conditions were met. The difference in the current situation is that the Zika virus and microcephaly epidemic create a highly urgent public health crisis with enormous consequences for the Brazilian society. In other words, a crisis powerful enough to historically become the agent of a paradigm shift in moral consensus on abortion in the Brazilian society and with it leading to a change in public opinion and legislation. We believe that this is a historical moment in the development of the abortion debate in Brazil.

Bearing in mind the development of the Zika epidemic and the ever changing abortion debate in Brazil and the constraints of Kuhn's theory, which is mainly the fact that it does not give us tools to measure the significance and potential of the historical crisis,

we conclude with the bold hypothesis that a paradigm change will come about as a result of this complex situation. Due to the scope of this paper, we cannot immerse ourselves in the day-to-day changing debate, the myriad of agents and factors that also play a role and thereby evaluate the complexity of the entire situation. Nevertheless, we will make sure that all outcomes according to the theory are taken into account. Therefore, in the following we will mention and discuss other possible ways for the crisis to end.

## Other Possible Outcomes

Combining Kuhn's *other* ideas on how a historical crisis might end, and seeking inspiration from the historical development of the abortion debate in different places around the world, the following will suggest other possible outcomes from the debate on abortion in Brazil anno 2016. Furthermore, their probability will be evaluated.

As mentioned earlier in this paper, Kuhn states that: "Sometimes, normal science ultimately proves able to handle the crisis-provoking problem despite the despair of those who have seen it as the end of the existing paradigm" (Kuhn 1970: 84). Consequently, the historical crisis in such situations does not lead to a revolution, and thereby to a paradigm shift, but by stretching the rules, the existing paradigm adapts to the crisis. Everything goes back to normal and the paradigm proves durable and even stronger. The defenders of the paradigm, the members of the established community, are pleased to see the paradigm handling the crisis. Included in this first possible outcome of a historical crisis, the following three developments regarding the abortion debate in Brazil can be suggested.

Firstly, a vaccine for the Zika virus could be developed - that outcome would please decision-makers, the religious authorities and of course the individual pregnant women. The upcoming Olympic Games will no longer cause worries and everything will fall back into place. Alas, experience tells us that developing a new vaccine might take a significant amount of time, especially before it is prepared and tested for the

whole population to use. It took approximately 10 years for the vaccine for rubella to be developed and perfected so it could be used by everyone in the USA (Plotkin 2006: 164). Of course, a vaccine for the Zika virus could be developed a lot faster given the advancement of science since the 1960s and the urgency of the situation. We do not claim to know how fast a vaccine could be made, but judging from past experiences as the one mentioned above, this outcome seems to be quite improbable at the current moment.

Secondly, by stretching the rules of the paradigm, microcephaly could be added to the list of medical indications for legal abortion, as it was the case with anencephaly in 2012. Two main constraints, however, could prevent this outcome. One constraint lies in current diagnostic methods, as it is impossible to find out early in the pregnancy whether the fetus has microcephaly or not.

The fact that a fetus has microcephaly is often not apparent until late in the pregnancy (ultrasounds often can't detect the condition until well into the second trimester) or after birth (when doctors measure the circumference of the baby's head). Sometimes babies born with normal heads can acquire microcephaly later, through a subsequent brain injury or infection (Belluz 2016).

Another main constraint has to do with the fact that the Brazilian legal system is very slow to respond adequately to urgent public health crises: it took 8 years of legal court battle to add anencephaly to the list of indications allowing legal abortion (Barroso 2014: 277-278).

Thirdly, the practice of abortion could be changed, while the laws stay the same. For example, the society becomes more tolerant towards abortion, so that even though illegal, it is not actually punished and condemned. This idea is based on the way the abortion debate has developed in Switzerland. Abortion was first legalized in 2002 by way of referendum (UN 2002: 86-87), after its criminal prohibition had ceased to be observed for some time, since the early 1970s abortion was technically illegal but widely practiced and accepted (IBID). Nevertheless, this outcome seems improbable,

due to the strong religious ties of the Brazilian people – 71.2% of the population state that they are members of a church or religious organization (WVS 2014). In fact, two fundamentally implacable attitudes towards legalization of abortion hold their positions: First, the Women's Rights Movements that claim freedom for the pregnant woman to decide whether or not the basic rights of daily bread, shelter and clothing are secured for her and the child, so they can live a decent life. Second, the religious formations, especially Catholic and Pentecostal claim the inviolable right to life for every living creature from the moment of conception. Both antagonistic groups have forceful participants, and as this is a matter of moral and ethics, laws may be altered in the light of acknowledged threats such as Zika induced microcephaly, but the dispute will probably never reach a final consensus.

These three possible outcomes, and many others not mentioned here, are variants of the first way that a historical crisis might end, namely as being explained and appropriated by the current paradigm.

According to Kuhn, another outcome of a historical crisis is the following:

[...] the problem resists even apparently radical new approaches.  
[...] no solution will be forthcoming in the present state of their field. The problem is labeled and set aside for a future generation with more developed tools (1970: 84).

Here, understanding and handling the crisis with the current knowledge and experience is not possible and as a result the problem is put on hold and left to be resolved at a later stage. In the case of the Zika epidemic and the microcephaly cases that would mean to ignore their existence, for example because the scientists cannot develop a vaccine. Furthermore, the affected have been chiefly poor and uneducated women in already ignored areas in Brazil, and taking the whole Brazilian population into account, the affected percentage is not very big. Additionally, since the Zika flu is transmitted through mosquitos, it is a seasonal problem and the summer has already ended in these areas of the world. Lastly, the media outlets could ignore the problem,

intentionally as a political agenda or simply because there are new scandals coming up and stealing the spotlight from the Zika virus.

We consider this outcome rather improbable, because the virus will ultimately spread to the middle-class and influential women, not just the poor and non-influential population, and more importantly - it might spread throughout the whole world, so there is a lot of international pressure on Brazil to deal with it, especially since the Olympic Games will take place in Rio de Janeiro a few months from now.

Since new information is appearing every day and since countless actors and factors are influencing the abortion issue in Brazil, a variety of outcomes can be expected. Throughout this paper, we have argued that the Zika epidemic and the resulting microcephaly could lead to a paradigm shift in the way abortion is regarded in the Brazilian society. A paradigm shift in the moral consensus of the society would lead to a paradigm shift in the official public opinion and that would lead to a new legislation on abortion.

## **Concluding Remarks**

In conclusion, the possible outcomes of the highly topical abortion debate in Brazil anno 2016 are numerous and this paper has argued strongly for one of them to prevail the others. Whether or not the Zika epidemic could act as the crisis that would trigger a change in the abortion debate in Brazil has been analyzed using Thomas Kuhn's theory about paradigm shifts combined with Miziara and Miziara's concept of moral consensus. The probability of a paradigm shift occurring was then argued and evaluated based on three main points. First, the highlights of the historical context and development of the abortion debate in Brazil were presented and commented in order to better understand the current state of the question on abortion in the society and legislative system in Brazil. Building upon that, the second point argued that the Zika epidemic could be treated as a historical crisis following Kuhn's theory. Here, three empirical cases of earlier public health issues with an enormous impact on the society's

opinion and policies were used as evidence - the yellow fever outbreak in Rio de Janeiro in 1850 that led to the prohibition of slave trade, the rubella outbreak in the UK that led to the legalization of abortion in 1967 and the advancement of technology that put doctors in a dilemma that led to orthothanasia in 2012. The third and most poignant point in this paper is the logical synthesis of the aforementioned and it follows Kuhn's theory on how a historical crisis can provoke a paradigm shift - it has been argued that the Zika epidemic really does have the potential to trigger a change in the current paradigm on abortion and with it a change in the moral consensus in the Brazilian society.

Subsequently, other possible outcomes of the debate were presented and evaluated, all derived from other aspects of Kuhn's theory and all of these were supported by earlier historical developments of the abortion debate in other countries. The outcome suggesting that the current paradigm might handle the crisis is backed by three possible ways and exemplified with cases from USA, Brazil and Switzerland. The outcome implying that the crisis would be ignored and left out is consequently evaluated as less probable given the dimensions of the epidemic and the pressure from within and outside Brazil. It has been the goal of this paper to argue that a paradigm shift in the abortion debate in Brazil very likely could occur while maintaining other possible outcomes and taking as many factors into consideration as possible. Given the methodological considerations of the theory as being generalist, as well as the scope and time frame of this paper, together with the rapid changes in the day-to-day debate, the limitations of the paper have been recognized and taken into account.

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