ARTICLES

PAGES OF REVOLUTION, PROMISE AND HOPE:

metaphors of cloning and stem cell research in Brazilian newspapers

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ABSTRACT - Metaphors not only contribute to cognitively accommodate new information and concepts, but also to mobilize political, social or ideological meanings. In the popularization of biotechnology-related facts and achievements, the metaphors chosen to construct newspaper articles may influence both positively and negatively the general public perceptions of its several applications. This study reports a discourse analysis of metaphors used in Brazilian opinion-leading newspapers to popularize cloning and stem cell research: "revolution", "opening new ways/doors", "promise" and "hope". Predominantly associated with positive sense, they may have contributed to reduce the resistance against animal and/or therapeutic cloning and to construct a moral imperative in favor of embryonic stem cell research, which would lead to therapies or cures for incurable diseases.
Keywords: Discourse. Metaphors. Cloning. Stem Cells. Brazilian Press.

PÁGINAS DE REVOLUÇÃO, PROMESSA E ESPERANÇA: metáforas da clonagem e das pesquisas com células-tronco em jornais brasileiros

RESUMO - Metáforas contribuem para a acomodação cognitiva de informações e conceitos novos, como também para que sentidos políticos, ideológicos e sociais sejam mobilizados. Assim, as metáforas utilizadas nos discursos de diversos atores sociais em notícias, reportagens, artigos e editoriais sobre biotecnologias podem influenciar a maneira como o público geral forja percepções sobre diversas de suas aplicações. Neste estudo, faz-se uma análise do discurso de metáforas utilizadas para abordar em jornais de elite brasileiros a clonagem e a pesquisa com células-tronco: "revolução", "abrir caminho/portas", "promessa" e "esperança". Predominantemente conotadas de modo positivo, elas podem ter se prestado à redução da resistência à clonagem animal e à terapêutica e à construção de um imperativo moral em favor das pesquisas com células-tronco embrionárias, que levariam ao tratamento ou à cura de doenças.
Palavras-chave: Discurso. Metáforas. Clonagem. Células-Tronco. Imprensa Brasileira.

PÁGINAS DE REVOLUCIÓN, PROMESA Y ESPERANZA: metáforas de la clonación y de las investigaciones con células madre en periódicos brasileños

RESUMEN - Las metáforas contribuyen a acomodar cognitivamente nuevas informaciones y conceptos, así como a movilizar sentidos políticos, ideológicos y sociales. En la divulgación de noticias y hechos relacionados con las biotecnologías, las metáforas escogidas para componer las piezas periodísticas pueden influir de modo positivo o negativo en las percepciones del público general acerca de muchas de sus aplicaciones. Este estudio es un análisis del discurso de las metáforas utilizadas para abordar en periódicos líderes brasileños la clonación y las investigaciones con células madre: "revolución", "abrir caminos/puertas", "promesa" y "esperanza". Estas imágenes, predominantemente cargadas de sentido positivo, pueden haber contribuido a disminuir la resistencia contra la clonación animal y terapéutica, y a construir un imperativo moral a favor de las investigaciones con células madre embrionarias que llevarían al tratamiento o la cura de dolencias.
Palabras clave: Discurso. Metáforas. Clonación. Células madre. Prensa brasileña.

INTRODUCTION

European and North-American longitudinal studies observed that press coverage of biotechnology, from the 1970s through the end of the twentieth century, was predominantly positive, presenting them as scientific advancements and profit opportunities. In general, the short history of modern biotechnology is made of a series of "breakthroughs" and/or "revolutions" (MARKS et al., 2003; LIAKOPOULOS, 2002; NISBET, LEWENSTEIN, 2002). The adjective "revolutionary" is also "routinely annexed to science and technology to convey the sense of moving forward into a new era, in which the old ways of the past are cast aside" (FRANKLIN, 2008, 10). The image of revolution promotes scientific activities as progress, advancements leading to a better future, able to provide humankind with a healthier, more comfortable and wealthier life.

In the British press, from 1970s through the mid-1990s, Liakopoulos (2002) found a great diversity of metaphors linked to biotechnology, among them "promise" and "revolution". Images of promise referred to advancements that will have a significant impact on the way people live, eat and face the need to take care of their health. But the most often used metaphor was "revolution", to signify progress, improvement, transformation. Those metaphors not only play a cognitive role, rending familiar or concrete unknown or abstract concepts or achievements; but they also carry ideological, political and social senses. They are part of people's daily construction of knowledge and communication and become particularly relevant when they have to deal with something new (HOLMGREEN, 2008; WAGNER, 2007).

In Brazil, similarly to many other countries, the birth of Dolly the sheep in 1997 was announced and then discussed by the media as a "revolution" – even though ambivalent, due to the possibility of cloning human beings – and potential medical benefits: mostly, the acceptable utility of animal clones were opposed to the unnecessary immorality of human clones (HELLSTEN, 2008; MEDEIROS, 2012). In December 1997, a physicist who used to perform embryo transfer experiments, Richard Seed, told North-American radio journalists that he was planning to clone humans.

In the beginning of the following year, this announcement would run the world – arriving in Brazil as well –, apparently evoking the nightmare of human cloning and making urgent to legally prevent the accomplishment of those plans in countries where laws on the subject

were nonexistent or vague, leaving loopholes. British authorities, in a document submitted to public consultation, proceeded to distinguish part of the potentially beneficial applications with a proper name: "therapeutic cloning" which would allow scientists to cure degenerative and other currently incurable diseases, so called in opposition to "reproductive cloning". And this distinction became a subject of dispute.

In 1998, two North-American science teams also announced their success in cultivating human stem cells in laboratory. These achievements (that approached the promises to reality) decisively helped to displacing cloning from the central stage in debate, increasingly occupied by stem cell research, a displacement that was equally covered by Brazilian press. Coverage in Brazil dealt mainly with imported facts until 2004, when the national debate gained prominence over the international one.

Cloning debate reached a peak in 2001, opposing both reproductive cloning to therapeutic cloning and adult to embryonic stem cells. Its main focus was on the decision to be taken by US President George W. Bush regarding federal funding to stem cell research. Bush ended up restricting federal support to research using the preexisting lineages (and not the creation of new ones). Besides this North-American debate, Brazilian news dealt with other facts, such as: liberation of research on therapeutic cloning in the United Kingdom; the controversial announcement of human cloning by Severino Antinori and Panayiotis Zavos; the birth of calf Victoria, Brazilian first mammal clone, obtained from embryonic (and not adult, as in Dolly's creation) cells; clones of various animals and the presumed human cloning by Advanced Cell Technologies, a North-American biotechnology company.

There was also an increasingly intense controversy in Brazil, along 2004 and 2005, when a new Brazilian bill regulating biotechnology was discussed, voted and finally approved. Through these years, still, south-Korean Hwang Woo-suk team faced glory and then disgrace. After therapeutic cloning have reportedly shown to be possible in 2004, they issued an article in Science magazine in 2005 reporting the creation of many human stem cell lineages from adult cells of patients suffering from a few diseases. These achievements were given attention and prominence by Brazilian press. However, one only achievement of Hwang's team remained confirmed after the investigation conducted by the University of Seoul – where he used to work –: Snuppy, the first cloned dog (HARAN, KITZINGER, 2009).

In 2005, few months after the adoption of the new national

bio-safety law, the former General Attorney of the Republic Claudio Fonteles filed an Action of Unconstitutionality in Brazilian Supreme Court questioning the Article 5, dealing with embryos allowed to be used in research (CESARINO, LUNA, 2010; JURBERG et al., 2009). The debate would be encouraged once again, it only changed in 2008, when Supreme Court's decision was taken, ending one more attention cycle (NISBET, HUGE, 2006) over cloning and stem cell research.

A preliminary analysis of Brazilian newspapers coverage between 1997 and 2005 showed that several metaphors were used to signify cloning and stem cell research. Through their potential meaning effects, they may have influenced the general public perceptions about these issues. Articulating the fables of imagination with the formulations of the imaginary, metaphors are emotionally charged; they do carry ideologies, and are shortcuts to the construction of meanings about sciences and technologies (HELLSTEN, 2003; LIAKOPOULOS, 2002).

Few studies have analysed discourses on biotechnology found in Brazilian press. Due to the influence they may have had over national public(s) perception(s), this study reports an investigation, through discourse analysis, of four metaphors associated with cloning and stem cells in Brazilian elite newspapers along 1997, 1998, 2001, 2004 and 2005: "revolution", "opening new ways", "promise" and "hope".

1 METHOD

In this study were analysed the articles published by three Brazilian prestige papers (Folha de S. Paulo, O Estado de S. Paulo and O Globo) along five years: 1997, 1998, 2001, 2004 and 2005. These media outlets inform about issues relevant to the whole nation not only the general public, but also members of Parliament, law and public policy makers. They also set the agenda and served as references to regional and local communication outlets, as well as other media, such as radio and television (BAUER et al., 2001; NISBET, BROSSARD, KROEPSCH, 2003). They help to shape the ways biotechnology is defined and symbolized by the public (NISBET, LEWENSTEIN, 2002).

The articles were obtained from the electronic archives of O Globo, O Estado de S. Paulo and Folha de S. Paulo through the following key words: "cloning", "reproductive cloning", "therapeutic cloning", "Dolly", "stem cell", "stem cells" and "embryo". The study corpus was built in order to typify unknown attributes in the social space studied (BAUER, AARTS, 2008): the diversity of images associated with cloning

and stem cell research in Brazilian newspapers. The metaphors used as "ways of providing meaning" (ORLANDI, 2000, 15) about these issues for the general public were here investigated through discourse analysis.

This kind of analysis is intended to "understand the language making sense as symbolic work, being part of the general social work, constitutive of humankind and its history" (ORLANDI, 2000, 15). In discourse analysis, language is a "condition of possibility" for speech. And, as discourse, it is embodied in language, it materializes ideology (ORLANDI, 2000, 17): the discourse is the "place" where the relationship between language and ideology can be observed (PÊCHEUX, 1975 apud ORLANDI, 2000), once it is constructed by choices – constrained by ideology, history and power shares –: "it could always be another saying" (ORLANDI, 2000, 35).

Taking into account that meanings are both "below and beyond words", this analysis focused on fragments of discourses that composed Brazilian press coverage, seeking to interpret in their own context and according to the broader historical and social context what was said and what was silenced about cloning and stem cell research, seeking to make explicit the effects of meaning they may produce (GILL, 2008; ORLANDI, 2000). These meanings are related to what is said elsewhere and also to what could have been said and was not; one could say that "text margins" are also part of it (ORLANDI, 2000, 30).

This article analyses discourse fragments in which cloning and stem cell research were approached as "revolution", "opening new ways", "promise" and "hope". Fragments were extracted from 28 articles – editorials, opinion pieces, news and reports – in which those metaphors were used; they were delimitated according to a "principle of parsimony": the minimum necessary of words to make sense.

2 RESULTS

2.1 Revolution

In one of the first stories about Dolly the sheep in the Brazilian press, the "revolution" is said to be a technical "evolution" of cloning from embryonic cells, an achievement until then considered unattainable: "Until today, it was considered impossible to do the same operation with adult animal cells. The new experiment is an evolution of the previous one, and considered a major scientific revolution" (GLO, February 24th1997). In spite of Roslin Institute and PPL Therapeutics attempts to limiting discussion to potential benefits of animal cloning, human

cloning phantom haunted the first reports that announced the new achievement (one in Observer, the other in New York Times) throughout the world. The ambivalence of the revolution could also be noticed in Brazilian coverage:

> Saturday, Scottish scientists caused a revolution in the international scientific community when they announced that a sheep was cloned from an adult animal. [...] While it is ethically reprehensible, it is technically possible to use the same technology in humans (GLO, February 26th 1997).

Many different countries were forced to review their laws and to create or mobilize the existent national advisory bodies on bioethics to investigate the issue. Unsurprisingly, so, cloning technique was considered a threat to Brazil, a country unprovided with legal mechanisms dealing with its application:

> The revolutionary technique of producing clones by using cells from adult animals poses a threat to Brazil. The country has no law regulating the issue and could become a testing ground for experiments, both by domestic and foreign groups (AZEVEDO, March 2nd 1997).

Seeking to allay fears and decrease resistance, a physician said that human clones were nothing but a "fantasy" triggered by animal cloning, once more the metaphor "revolutionary" was used: "- This is a fantasy triggered by Dolly - the doctor said, referring to the revolutionary experience developed in Scotland which resulted in the animal world's first copied from an adult mammal" (PASSOS, March 10th 1997). Dolly was also said to be a "symbol of revolution of the clones that came directly from science fiction films to reality" (TELLES, September 2nd 1997) and "great symbol" of revolution that science has promoted through the creation of test-tube babies and reproduction of homosexuals, "while Catholic church still criticizes contraceptive pills" (GLO, October 16th 1998).

Consequently, the birth of Polly, a cloned and transgenic sheep, led to the resumption of Dolly's creation in a dramatic tone: it was a "disconcerting experiment" that "opened new doors for scientists engaged on achieving one of the biggest dreams of medicine" – to cure cancer and Aids –. "For them", those dreamers scientists, "besides having broken enormous scientific, ethical and psychological barriers", Dolly was particularly revolutionary to have improved "man's ability to manipulate genes" (GLO, July 25th 1997). She was also said to be a"result

of a revolutionary experience" that "scared the world and raised ethical discussions on the possibility of man to clone himself" (VIEIRA, July 26th. 1997).

"She" was also said to be "opening" for a medical revolution that would soon bring benefits: "Dolly left the ground free for a revolution in transplantation. By 2010, experts believed it would be possible to clone human organs and develop tailormade hearts" (AZEVEDO, February 28th 1998). Thus, an experiment by researchers in Hawai that created dozens of mice, "considered revolutionary by the British journal Nature", was treated as evidence of the feasibility of cloning and authenticity of Dolly:

> The birth of the legion of clones, announced yesterday, removed any doubt about the authenticity of Dolly the sheep, the first mammal cloned from an adult animal in the world. But, more than saving the reputation of Scottish sheep – originated from a technique that was being questioned – Hawaiians mice have proved that cloning adults is feasible and can lead to hundreds of identical animals (GLO, July 28th1998).

Years later, embryonic stem cells were considered controversial in a report about US President George W. Bush's meeting with the Pope. Bush had not yet decided whether or not to fund research with them when the Pope asked him to refuse "the production of embryos for research". Revolution here also ended up being ambivalent, associated with the broad differentiation capacity of cells (in vivo) and moral resistance to manipulation of embryos: "Stem cells, that can give rise to any tissue in the human body, promise to revolutionize medicine. However, they open an ethical discussion because embryos are the best sources for these cells" (GLO, July 24th 2001).

Due to the politicization of the issue in 2001, an editorial said that there was no "limits to what research on stem cells from human embryos can produce in terms of medical progress" and there is no impediment for "future good cells to be produced to replace defective or damaged cells". The world would be free of diseases: "Scientists are beginning to learn to control the growth of cells, in principle, they may in the future find ways to direct the process altogether. It's the beginning of a revolution" (GLO, July 24th 2001). As stated on cloning years before, the importance of research on embryonic stem cells would have the power to "revolutionize medicine" through tailormade organs, that would eventually end "the rows of transplants", and the "development of efficient therapies" and treatments to retard aging (GLO, July 24th 2001).

The image of a "medical revolution" was also tied to the "brave

new world" one, lending it a positive meaning, in spite of the needed "sacrifice" – of cells, protolifes or human lives –. On the other side, the liberal revolution of medicine opposed to the political and religious conservatism, composing Bush's dilemma. In the fragment below, discursive formations of religion (make somebody walk, give life back, sacrifice) are mixed to discursive formations of science/medicine (cell engineering, more efficient treatment, transplantation) to dramatize a technology that would work miracles:

> Cell engineering promises a medicine able to treat cancer more effectively, allowing disabled people to walk, ending queues transplants, returning to normal life those who have Parkinson's and Alzheimer's illnesses. However, for this "brave new world" to become concrete, embryo sacrifice is needed. And this is Bush's dilemma: turn his back to a medical revolution or deny his own conservative political and religious convictions (AZEVEDO, July 29th 2001).

However, setting concrete fears that the technique is incorporated to assisted reproduction, maverick Panos Zavos promised a "revolution" and, seeking to create a demand for cloning, attributed a low success rate to in vitro fertilization: "The share of couples who can not have a child through these techniques is still great. [...] this is our area, and we will lead a revolution" (COSTA, August 12th 2001). Besides human reproductive cloning, another dark side of the revolution would be the commercialization of life: "This revolution that helps infertile couples also creates trade of eggs and mothers" (COSTA, August 19th 2001).

Therapeutic cloning, in its turn, had in general a positive valence, as shown in the subheading of a story on the announcement, in Seattle, of the first major achievement of Hwang's team: "Revolution in medicine: South-Korean defends law allowing therapeutic cloning, but preventing use in reproduction" (BRAGA, February 13th 2004). "This revolution is once again haunted by the potential use in reproduction: "South Korean experts announced yesterday the biggest breakthrough ever achieved in research trying to make cloning a revolutionary way to treat diseases", but recognize fear that their research is applied in human reproduction (BRAGA, February 13th 2004).

2.2 "Opening new ways"

Instead of the violent change from preexisting order suggested by "revolution", advancements brought by biotechnology are sometimes more smoothly described (LIAKOPOULOS, 2002): opening new ways or

doors to innovative techniques, products and therapies. This image was used to affirm the birth of two ewes, cloned from fetal cells and also transgenic (carrying human genes), George and Charlie, as evidence that the technology could be more effective than that used to create Dolly at the Roslin Institute, bringing the possibility of large profits with "living factories":

> Their birth at a ranch in Texas proved the effectiveness of a faster and simpler technique of cloning animals with human genes, paving the way for commercial exploitation of clones, a market that could be worth billions of dollars per year (GLO, January 21st1998).

This image appeared in headings and subheadings of articles on therapeutic cloning and embryonic stem cell research, such as "Cloning of Dolly opened the way for tailor made organs transplants" (AZEVEDO, February 22nd1998) and "Experience opened the way for treatment of Parkinson's disease" (GLO, February 25th 2001). But it was also used to say that cloning could open a bad path: the production of monsters (GLO, March 1st1997).

This metaphor also appeared linked to a research that would create human neurons in animals, awarding the company responsible for pioneering the achievement: "The research of the California bio-tech company StemCells Inc opens a new path and shows that stem cells from the human brain […] can be induced to grow inside the skull of a mouse" (GLO, February 25th 2001). This metaphor was also associated with adult stem cells found in human heart (GLO, June 7th 2001): "Discovery opens path for more effective treatments against heart attack".

Similarly, it was used to approach the relevance of stem cells, that have "the potential to transform medicine, opening the way for treatments against cancer, Parkinson's and Alzheimer's illnesses, paralysis, diabetes, osteoporosis, and dozens of other diseases" (AZEVEDO, August 11th 2001). A variation, "paving the way", was used to celebrate, in the beginning of 2004, the supposedly pioneering research led by South-Korean Hwang Woo-suk, published in Science journal, that would have created "universal cells" of inestimable therapeutic value:

> The experience of South Korean researchers showed that the so-called therapeutic cloning – for use in medicine – is possible. And it paved the way for the development of treatments for currently incurable diseases [...] (AZEVEDO, BRAGA, JANSEN, February 13th 2004).

2.3 Promise

In an editorial, therapeutical cloning was said to be "science promise to cure degenerative diseases and also to recover damage tissues." Its prohibition by the Biosafety law, which would be voted in the Senate after being approved by the House, would deny to the people the benefits to be gained in this field. Senators were urged to reject this obscurantist attitude, which equate Brazil with "the most backward theocracies" (FSP, February 8th 2004).

The promise is established between the potential (the ability of differentiation) of stem cells and their embodiment in therapeutic tools. The fragment below suggests that there may be adult stem cells with similar potential to that of embryonic stem cells, according to a study published in a science journal. This kind of news may have contributed to reinforce the need of embryos as sources for cells:

> Publishing their findings in the journal "Applied Physics A," they report the extraction of cells of glandular tissue of rats and humans from the pancreas that have similar properties to embryonic stem cells, capable of becoming all types of tissues – therefore considered one of the great promises of medicine (FSP, May 29th 2004).

Another editorial addressed therapies with stem cells as the "main promise of science for the treatment of diabetes, Parkinson's and other degenerative diseases, in addition to bringing the prospect that one day, laboratories can develop organs for transplant" (FSP, August 11th 2004). There were, however, stories criticizing the hyped promises or making it clear that they would not take place quickly. Leite (November 21st 2004) for example stated that: "The current biotechnology, in which is invested public's disproportionate hope, is the promise of stem cells". A scientist brought a decade or more onto the path leading to therapies:

> Macklis […] urges caution for people who think that stem cells (capable of producing any type of tissue in the body) are an immediate promise of treatment for ailments such as Alzheimer's and Parkinson's. "I think this task will take 10, 20, 30, 50, depending on the complexity," says Macklis (ANGELO, August 14th 2004).

2.4 Hope

An editorial addressed "cloning of human embryos" by south-Korean scientists as being "a remarkable scientific achievement". It was not destroying fetuses or lives: the embryos would become blastocysts that would not be implanted. "They are, at most, potential lives, no more than isolated sperm or eggs". Reproductive cloning was one more

time condemned; therapeutic cloning, however, was a "very different" case with an additional advantage (expressed through "better still") of eliminating the possibility of rejection of the transplanted tissue:

> Stem cells are the great hope for medicine in the future to cure degenerative diseases such as diabetes and Parkinson, and also to repair organs and tissues damaged by any cause (FSP, February 15th 2004).

In a short story on the opening of what would be the biggest centre for embryonic stem cell research in the whole world, which took place in United Kingdom, hope was reaffirmed: "Cells that can be transformed into many types of tissue are hope for various diseases" (FSP, June 22nd 2004).

DISCUSSION

Metaphors analyzed in this study, used in cloning and stem cell research coverage by Brazilian newspapers, "revolution", "opening new ways", "promise" and "hope", are predominantly connoted in a positive way. These images may have helped to raising public support and/or reduce resistance to "good" cloning uses – animal and therapeutic – and to construct a moral imperative in favor of embryonic stem cell research.

Metaphorical preferences may affect the development of media coverage and public debates; in Germany, after being used by the nation's president in a speech, the metaphor of crossing of Rubicon helped to shape further discussion on embryonic stem cell research (NERLICH, 2005; HELLSTEN, 2008). But we should also emphasize that they influence without shaping the way issues are addressed. Had they produced an effect on meaning, if any, it would necessarily be limited. After all, therapeutic cloning ended up legally forbidden and embryonic stem cell research allowed under strict conditions after a long and intense debate (CESARINO, LUNA, 2010; JURBERG et al., 2009). Furthermore, eminently negative metaphors (such as Frankenstein, "playing God" and "brave new world") were used by several social actors to fuel fears and compose dystopian scenarios (MEDEIROS, 2012).

Our results showed that "revolution" and "opening new ways" were associated with animal cloning, therapeutic cloning and stem cell research, while "promise" and "hope" were associated with stem cells (particularly embryonic). All point to the future that technical achievements constantly redesign (HYDE, 2006). The word revolution "is used to

describe the enormous effect the technology might have in many areas of human activity", such as medicine, agriculture and chemical industry. "Revolution denotes a sudden break with the status quo and a fast rate of social change that, although dubious about the final effect, definitely contains a strong sense of positive developments" (LIAKOPOULOS, 2002, 10). Similarly to the word breakthrough, "revolution" refers to "major steps" in great narrative of progress and contributes to inflate hopes and create promises that may not be fulfilled (BROWN, 2000, 87). Thus, the adjective "revolutionary" "is increasingly associated with divided opinion, mixed feelings, and professional, as well as lay ambivalence" (FRANKLIN, 2008, 17). In this study, the "revolutions" have also shown to be ambivalent, especially when associated with reproductive cloning.

In the "great embryo debate" in the United Kingdom along the 1980s, in both the press and Parliament, advocates and opponents of research have also put in question the future and "regularly slipped into the prophetic mode" (MULKAY, 1996, 172). In the dispute between the possible futures, the "rhetoric of hope" triumphed; the Human Fertilization and Embryology Act, passed in 1990, established in 14 days limit for manipulating a human embryo. After the announcement in 1998 of the successful cultivation of human embryonic stem cells in the laboratory, the British government decided to assess whether it was necessary to amend the 1990 Act. The task was performed by a team led by chief medical officer Liam Donaldson staff and generated a fierce parliamentary battle, in addition to extensive media coverage (KITZINGER, 2008). The Donaldson report proposed expanding the law to cover the use in research of stem cells from embryos discarded from fertility clinics and those created by therapeutic cloning.

In media coverage of this debate, opponents and advocates assumed a prophetic tone similar to the one Mulkay had found in the 1980s. "The real battleground is about the plausibility of diverse visions of utopia and dystopia and about who can claim the authority (in terms of both morality and expertise) to produce a credible version of the future" (KITZINGER, WILLIAM, 2005). Hope was among the central notions of the discussion, being used to eliminate the gap between "wishful thinking" and reality, and allowing scientists to invoke generic positive visions of the future. Both the "right to" and the "power of" hope were used in media to make any resistance to therapeutic cloning and embryonic stem cell research "appear reprehensible" (KITZINGER, 2008; KITZINGER, WILLIAMS, 2005). The use of "hope" as metaphor of stem cells in an editorial, in addition to its use in news, in Brazil may be regarded as

evidence of its political relevance in the context of discussions over a new biosafety law.

In this study, "opening new ways" served as metaphor of cloning and stem cell research, similarly to what Kitzinger (2008) observed in British media, in which images of this kind were used to reify in the cure of diseases the destination of the announced achievements. This metaphor is tied to one of the most powerful representation of "Science", present even in the discourses of those who claim to set limits to its activities: a journey that expands the frontiers of knowledge, increasing the comfort and well-being of humanity (HELLSTEN, 2008; BROWN, 2000).

Certainly contribute to such representation the words used in the media popularization of sciences and technologies. Words are neither neutral nor innocent. If the relationship between language and ideology is observed in discourse (PÊCHEUX, 1975 apud ORLANDI, 2000), then we dare to say that a "scientistic" ideology runs through the metaphors analyzed in this study. Its use must at least partly result from the fact that they reflect the dominant view in science journalism, which tends to reinforce status quo, socially legitimizing the authority of scientists (HILGARTNER, 1990).

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