

Human Cloning and the Raelians

Media Coverage and the Rhetoric of Science

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In this article, the author analyzes the reported coverage on human cloning and the Raelians in the Spanish newspaper *El País*. On December 27, 2002, Brigitte Boisselier, the director of the biotechnology company Clonaid, part of the International Raelian Movement, announced they had successfully cloned a baby girl. This news report enlivened the controversy on human cloning, which originated in February 1997 with the news of Dolly's birth. *El País* constructed the controversy as a fundamental problem of scientific policy. This study suggests that *El País* wants to persuade policy makers to establish limited regulations on experimentation with embryo stem cells for therapeutic purposes. To achieve this goal, this newspaper used scientific sources selected ad hoc and a series of well-defined rhetorical strategies.

Keywords: *human cloning; newspaper coverage; Raelians; El País; actor network theory; framing*

On December 27, 2002, Brigitte Boisselier, the director of the biotechnology company Clonaid, run by the International Raelian Movement (IRM), announced they had successfully cloned a baby girl who they called Eve. The claims of the IRM members not only enlivened the ethical debate surrounding human cloning but also provoked the reaction of the "scientific community,"¹ calling for science as the legitimate repository of knowledge and source of future development of research using human embryos (Table 1). In the Spanish newspaper *El País*, the debate was focused on the defense of genuine scientific progress. The newspaper and its scientific sources demanded from politicians a precise and fair definition of the question in order to protect serious research from the damaging

Table 1
Chronology About the Raelians and the Human Cloning Debate

Date	Event
December 27, 2002	Brigitte Boisselier (Raelian bishop and director of biotechnology company Clonaid) announces, in a press conference, the imminent birth of a cloned baby named Eve
December 28, 2002	Reaction of the "scientific community" to the announcement of the Raelians
December 29, 2002	American pharmaceutical authorities' reaction to the announcement of the Raelians
December 30, 2002	Scientists complain that announcements such as the Raelians' could stop scientific research of "therapeutic cloning"
December 31, 2002	Experts doubt the credibility of the journalist designated by "the world press" to verify the authenticity of the Raelian announcement
January 4, 2003	"Scientific community," represented by Robert Lanza, scientific vice president of the biotechnology company Advanced Cell Technology, discredits the International Raelian Movement
January 5, 2003	Clonaid announces birth of a second cloned baby
January 7, 2003	El País publishes an editorial that disqualifies the Raelians and warns of the danger that announcements such as these have for the future of therapeutic research
January 13, 2003	The legal system orders the Raelians to furnish evidence of Eve's cloning

effects that announcements such as the Raelians' might cause with respect to future regulations on experimentation with embryo stem cells for therapeutic purposes.

However, the controversy that arose from the Raelian announcement might be understood in the context of a wider debate about the risks associated with, and social implications of, human cloning, which originated in February 1997. Then, it was announced in all the headlines in the media around the world that a team of researchers associated with the Roslin Institute, near Edinburgh and whose patron was the biotechnology company PPL Therapeutics, had cloned a sheep called Dolly from an adult cell. From the news of Dolly's birth, human cloning became an issue of heated debates in the public arena of the media, and it acquired the public status of "scientific fact" (Neresini, 2000). The high point of the global debate was in December 2002, with controversial messages about the cloning of several babies carried out by IRM, a group considered sectarian that has a doctrine based on an extraterrestrial cult.

Method

The Data

In order to study the public debate sparked by the Raelians' announcement of an alleged successful human cloning, I used the database of *El País* to identify all of the texts. I have compiled the texts published by *El País* on the subject between December 28, 2002, and January 13, 2003, inclusive. In total, 16 different texts were studied, all of them retaining a strong discursive and argumentative cohesion. They constitute a "micro debate" that begins with the press conference given by Brigitte Boisselier (Raelian bishop and director of Clonaid) and ends in a quite illuminating editorial on the position of *El País* and two pieces of news about accusations of fraud against the Raelians. Therefore, the data corpus consists of the whole of the texts published by *El País* relating to the Raelian announcement. The choice of *El País* as the object of the study is justified by the fact that it is a reference newspaper in both the Spanish-language and the general European media.

The research starts from intellectual amazement: If Raelians are people who lack credibility, why does the "scientific community," through the newspaper pages, bother to discredit their extravagant announcement? Moreover, why is Robert Lanza, vice president of a biotechnology company, the only scientist consulted as a source of authority who gives the Raelians any amount of credibility?

It is also important to remark that during the debate the Popular Party (*Partido Popular*, or PP, in Spanish) ruled in Spain. The PP is a conservative party, whereas *El País* has a progressive tendency.

Theoretical Focus

In order to study the network of actors involved in the media surrounding the main subject of human cloning, I follow actor network theory (ANT). This theory allows us to observe how several social actors negotiate and expose their divergent interests that nevertheless create a convergent sociocognitive establishment of specific issues of the debate. ANT is associated with the work of Michel Callon, Bruno Latour and John Law (e.g., Callon, 1986; Callon & Law, 1982; Latour, 1983). In this study, the ANT approach is adopted as a sociocommunicative analysis tool. In this theory, there are not a priori givens (identities, facts, or interests); everything is a consequence of an ongoing reconfiguration of actors when negotiating their identities and interests as well as the assertions they have for the world (both social and natural) within

heterogeneous networks. ANT provides a conceptual framework and a terminology that allows one to deal with the actors involved in a debate in a symmetric way. Furthermore, it suggests that interests (and other social phenomena) are as negotiable as the natural phenomena themselves. If I adopt this approach, the role of the analyst will be to reveal the mechanisms or processes by which actors and collectivities construct these conceptions of the social and the natural world and try to impose them on others, as well as to measure to what degree they succeeded in doing so.

ANT assumes that "scientific facts" are products of human activity, and they are recognized as such thanks to complex negotiation processes that succeed only by involving an ever-growing network of actors motivated by diverging, though on the other hand incredibly convergent, interests. This convergence of diverging interests takes place through "translation processes" (Neresini, 2000, pp. 361-362). During the translation process, the identity, possibilities of interaction, and margins of maneuvering of actors are negotiated. Likewise, along the translation process establishing a "scientific fact" or formulating an important problem to be solved requires the support of actors interested in its consideration for a number of reasons. As a consequence, the "scientific fact" (or its problematization) moves from one context to another, attracting the attention of new and varied actors.

ANT is an appropriate tool of analysis to understand the role of the media in building the network of actors that supports the establishment and stability of a "scientific fact" beyond the restricted realm of the "scientific community" (Neresini, 2000, p. 362). Thus, it is possible to observe how media carry out an active role in this establishment when they lead debate toward specific contexts of opinion. This active role is made evident, for instance, in the selection of authority sources that help to form certain claims about the "state of the world" as well as the controversy, emphasizing those aspects of the problem that contribute to defining it in a given way and not in any other.

There is abundant evidence that the process of construction of scientific truth does not limit itself only to the restricted area of the scientific community. The mass media seem to have a fundamental role in expanding those boundaries (e.g., Gregory & Miller, 1998; Lewenstein, 1995; Neresini, 2000; Shinn & Whitley, 1985; Weingart, 1998). Therefore, the media could be understood as constituting public forums where experts and nonexperts negotiate their particular perspectives on the nature and social function of science. Thus, the media frame the social debates according to certain parameters, such as the selection of the sources of authority, the definition of the problem, or possible future consequences. According to

Gurevitch and Levy (1985), the media become “a site on which various social groups, institutions, and ideologies struggle over the definition and construction of social reality” (p. 19).

The concept of “framing” is taken here from several works (Entman, 1993; Goffman, 1974; Scheufele, 1999; Semetko & Valkenburg, 2000). This notion emphasizes that the presentation of certain subjects, facts, controversies, actors, demands, and assertions is always *selective*. By selecting certain elements among others, therefore emphasizing them, in the elaboration of the journalistic discourse, the media actually frame social events, or what amounts to the same, and give them a cognitive and interpretative frame. For Entman (1993),

To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, casual interpretation, moral evaluation, and/or treatment recommendation. (p. 52)

By framing these events in a predictable way, the media construct the news according to certain narrative patterns, assigning them images and stereotypes taken from popular culture. Thus, the media actively seek to provide frames of reference that the audience needs in order to interpret and discuss public affairs. Framing analyses and ANT belong to the studies of representation and meaning (Goffman, 1974). As Priest (1994, p. 168) pointed out, it is by this framing process that the media may exercise their most powerful influence, accounting for certain interpretations but not others. This is what has happened with the debate constructed by *El País* in association with the expectations of scientists involved in the promotion of genetic research on human cloning.

Data Analysis

The method used to analyze the texts that represent the technoscientific controversy of human cloning and the Raelians in *El País* is based on *critical discourse analysis* (CDA) (Fairclough, 1995a, 1995b; T. A. Van Dijk, 1988, 1993). CDA is an interdisciplinary method that combines traditional content analysis with a more interpretive approach to language use, discourse, and text images, placing them in their proper sociocultural and political context. Being an integral methodology, it allows for observing and relating different elements in each text (e.g., iconic, contents, and narrative) with the purpose of deriving consequences

for the meaning of a particular communicative act. Some of the subjects that can be tackled with CDA methods are the following key topics: the identity of actors involved in the debate, their discourse, the construction of interests, phraseology and meaningful metaphors, rhetorical strategies, complementary visual material as an audience attractor, and other pieces of information having a contextualizing function. All of these are elements of sense.

Carvalho (2000) proposed a specific method for CDA of media texts. Basically, her method integrates several ideas of Fairclough's and Van Dijk's approaches. The standpoint is an open-ended reading of the corpus of texts, that is, not constrained by very specific research questions or hypotheses. For Carvalho, it is very important to make use of critical thinking during this stage. This first reading of the data will permit the identification of significant debates, controversies, implicit ideas, and silences and possibly raise the initial research questions.

In the second stage, the texts are thoroughly analyzed. This analysis has two parts. First, a *textual analysis* is realized. Later, a *context analysis* is carried out (for all intents and purposes, a comparative-synchronic analysis and a historical-diachronic analysis). Because of the nature of this study (a single newspaper and a very short temporal period), I focus on the first one. The textual analysis allows the research to identify the following elements: (a) *surface descriptors* (the date of publication, the newspaper in which it was published, in this case *El País*, the author, the page number, the size of the article, etc.) and *structural organization* (headline and paragraph organization in each text); (b) *objects* of discourse (themes, topics, events, specific issues), which are not always obvious, so clearly identifying them is an important step toward deconstructing and understanding the role of discourses; (c) *actors* in the debate and how they are represented in the discourse; (d) *Language and rhetoric* involving the identification of key concepts and their relationship to wider cultural and ideological frameworks; (e) *discursive strategies and processes*, which as pointed out by Carvalho are the forms of discursive manipulation of reality (i.e., intervention on that reality in order to achieve a certain effect or goal) by social actors, journalists included, and involve wider effects on discourse and on its relations to social contexts, for instance, the structuration-domination discourse of the terms of the debate; and (f) *ideological standpoints*, possibly the most fundamental shaping influence in a text. According to Fairclough (1995b), "Ideologies are propositions that generally figure as implicit assumptions in texts,

which contribute to producing or reproducing unequal relations of power, relations of domination” (p. 14).

Research Questions and Hypothesis

From the sociocommunicative perspective,² which is adopted in this article, the hypothesis postulates that *El País* constructed the debate as a problem of scientific policy more than an ethical problem. In addition, *El País* might have directed the controversy with the acquiescence of scientists. Those involved in the debate, who were selected ad hoc as sources of authority, were the ones that conditioned the selection of the subjects, the treatment, and the style given to the information. The discussion was of a bipolar shape channeled by *El País* in order to establish both a rhetoric in agreement with the thesis of the scientists advocating the research with embryo stem cells for therapeutic purposes and a rhetoric addressed to discredit the claims of IRM members.

According to Callon's (1986) terminology, it seems that *El País* instituted an “obligatory passage point” through which the debate was channeled.³ With that purpose, two different but mutually complementary rhetorical strategies were used: the rhetoric of scientific rationality (Coleman, 1995) and the rhetoric of invasion (Lizcano, 1996). The first was used in order to establish an unmistakable delimitation between objective facts and subjective beliefs that helped to undermine any discourse “not based on science” or based on a science considered to be spurious. The rhetoric of “scientific rationality,” which is based on epistemic values such as progress, truth, and objectivity, contributed to establish a discourse based on the defense of determined technoscientific postulates and on scientific discredit of the Raelians' announcement. On the other hand, the rhetoric of invasion, which appeals to both qualitative judgments of ethical and moral character and values of a sociopolitical nature, contributed to establish a discourse based on the social discredit of the Raelians.

With these arguments, it is possible that *El País* attempted to stem the negative image of eugenics historically rooted in popular culture. It is suggested that *El País* tried to delimit precise boundaries between “responsible scientists” and “irresponsible rogues,” the reasonable and the immoral, and what is permissible and desirable or otherwise aberrant and detestable; to summarize, between “good” and “evil” science. Therefore, *El País* “framed” the debate on human cloning, building a double discourse in order to discredit the Raelians.

Results

Assumptions and Arguments

A critical and careful reading of the 16 texts that *El País* published suggests that the debate is based on several assumptions that attempt to discredit the Raelians, both scientifically and socially. In my opinion, the assumptions made by *El País* in order to frame the debate in the science policy field are these: (a) cloning a mammal, such as Dolly, is an incontrovertible scientific fact; (b) “reproductive” cloning is basically undesirable for its intrinsic technical problems; (c) “therapeutic” cloning is an ideal area for research that eventually will generate spectacular medical innovations in the near future; (d) the Raelians belong to a dangerous and unscrupulous sect that advocates “reproductive” cloning for profit; and (e) the scientific community is the legitimate repository of truth, and it has the moral authority to sanction aims of knowledge.

These assumptions are related to five arguments that allow the newspaper to construct the public controversy as a problem of scientific policy rather than an ethical or moral one. These five arguments are as follows:

1. *The negligible scientific credibility of the Raelians' announcement*, based on the very low rate of success (less than 2%) that the technology of cell nuclear replacement presents (as used by Ian Wilmut and his colleagues on Dolly) as well as the lack of “scientific evidence” to corroborate their claims
2. *The lack of moral authority and legitimacy of the Rael Sect*, based on their reprehensible history and the allegation that the Raelians were looking for self-promotion with such claims
3. *The moral authority and credibility given to scientists representative of several biotechnology companies*, based on the assumed legitimacy and homogeneity of an abstract entity called the “scientific community”
4. *The nonviability of—and consequently the unacceptability of—“reproductive” cloning*, based on ethical (“why”) and technical (“what for”) arguments, with the debate biased in favor of the technical rather than ethical argument; that is, although “reproductive” human cloning was implicitly considered as a moral aberration, it was primarily criticized as involving too much risk in the development of the alleged clone (premature aging, genetic malformations, etc.)
5. *The need for political authorities to articulate legislation capable of differentiating between the absurd and dangerous “reproductive” cloning and the social benefits of “therapeutic” cloning*, based on a wide consultation of scientific sources that support research with human embryos to obtain stem cells

Consequently, the framing process accomplished by the newspaper moved the debate on human cloning from the field of ethics and morality—the debate originated by the Dolly affair—to the field of scientific policy.

Rhetorical Strategies

The analysis suggests that rhetorical strategies were used to persuade citizens and policy makers of the need to regulate aberrant practices (identified with the Raelians' announcement) separating them from serious research (identified with the declarations of Lanza, noted scientist from the biotechnology company Advanced Cell Technology [ACT]). Thus, Table 2 shows different strategies used by both *El País* and the "scientific community" to rhetorically dissociate "therapeutic" from "reproductive" cloning.

Several consequences derive from a close examination of Table 2, regarding how the debate on human cloning and the Raelians evolved from the moment of their announcement. At first, the texts exploit the argument of the low rate of success of cell nuclear replacement. By the end, the debate pivots on the lack of scientific corroboration, the need of policy makers to consider the difference between "therapeutic" and "reproductive" cloning, and the "rhetoric of future benefits." A discourse pattern repeated throughout the debate is the lack of moral and scientific authority of the Raelians. That means that while at first the aim was to discredit the Raelian announcement with technical and scientific arguments, later on the stress was placed on the need for politicians to regulate a research area that, no doubt, will produce enormous medical advances for society in the short term. From the very beginning, the arguments discrediting the Raelians morally and socially were constantly used.

Below, I illustrate each key point of the debate with examples taken from the texts.

Poor credibility of the Raelian announcement: Low rate of effectiveness and lack of scientific evidence. Two mutually supporting arguments were used in order to discredit the Raelian announcement. Both are based on the positive norms of proper scientific behavior, known as Mertonian ethos (Merton, 1942). The first is a technical one because scientific literature shows that effectiveness of the technology of cell nuclear replacement is less than 2%, so what the Raelians declare is improbable—that is, not believable:

Table 2
The Strategies That Both *El País* and Scientists Made Use of to Separate “Therapeutic” and “Reproductive” Cloning

Strategies for Rhetorically Separating “Therapeutic” and “Reproductive” Cloning							
	Low Rate of Effectiveness	Lack of Scientific Evidence	Lack of Moral Authority of the Raelian Sect	Problems With Clonal Development	Cognitive Authority and Social Legitimacy of “Scientific Community”	Distinction Between “Therapeutic” and “Reproductive” Cloning	Future Benefits of “Therapeutic” Cloning
Text 1	×	×		×			
Text 2			×				
Text 3	×		×				
Text 4	×	×	×				
Text 5	×			×		×	×
Text 6			×				
Text 7			×				
Text 8				×		×	×
Text 9		×	×				
Text 10		×	×		×	×	×
Text 11		×	×	×	×	×	×
Text 12		×					
Text 13		×		×			
Text 14		×	×	×		×	×
Text 15		×	×	×	×	×	×
Text 16		×					

Their company has achieved 50% effectiveness in the processes. . . . Furthermore, she [Brigitte Boiselier] claimed that out of ten, five had given satisfactory results. (Townsend & De Benito, 2002; Text 1)⁴

In another piece we can read the following:

In the best of conditions, and only in a few mammals, the rate of success achieved is below 2%. That is, it has been necessary to manipulate 100 eggs to attain one complete gestation. The method is so complicated that not a single scientist has been able to test it on apes, the animal closest to man. (De Benito, 2002; Text 3)⁵

The second one is an evaluative argument: It is not only that the announcement lacks credibility given the inherent technical difficulties of the method used but also that the Raelians have not produced scientific evidence to support their claims. The “scientific community” resorts to the Mertonian norms of universalism and organized skepticism to disqualify their claims. According to the moral imperative of universalism, any assertion on the veracity of anything must adjust and be submitted to the evaluative criteria previously accepted by the scientific institution. Furthermore, according to the organized skepticism, in the lack of confirmatory data, scientists must call on their judgment until evidence becomes available that can be critically and independently observed, applying the logical and empirical methods on which scientists rely. For their part, while at first the Raelians declared that independent DNA tests would be carried out to confirm the cloning of Eve, they later discarded such a possibility. In the debate conducted by *El País*, this evaluative argument was profusely used. Generally, the main users were scientific institutions and consulted experts (direct discourse), and most of the time the direct discourse was associated with a moral judgment. See the following example:

[The] American Association for Advancement of Science (AAAS), the largest scientific society in the world, asked policymakers and the public in general to “treat skeptically” announcements such as the Raelians “until confirmed scientific evidence becomes available.

“Such unverified announcements,” pointed out AAAS in a press release, “based on the work of clandestine and uncontrolled laboratories are totally contrary to the norms of proper scientific practice.” (Sampedro, 2003a; Text 11)⁶

Lack of moral authority of the Raelian sect. With the purpose of discrediting the Raelian announcement, strategies based on the technical difficulties

of the experiment as well as the lack of corroboration of the statements were used, and a few pieces of text were alleged to be almost wholly devoted to “unraveling” the extraterrestrial origin of the Raelian cult. The postulates of its doctrine, in which cloning plays a central role and is understood as a way to achieve immortality, were also used, as were the extravagant statements of their leader Claude Vorilhon, the weird campaigns of the sect, and their past problems with the law. Such discrediting arguments seem to respond to the “rhetoric of invasion” (Lizcano, 1996, pp. 140-141). In fact, the Raelians are presented as a group that, despite being a hierarchical organization, thrives in a diffuse way and draws on secret resources. Their alleged research is conducted in “clandestine and uncontrolled laboratories” (Sampedro, 2003a) (Text 11).⁷ All this converts them into an obscure and hermetic group and an undefined menace. One of the texts reads, “Now, as it is usual with this sect, no identities, locations or methods are given” (Townsend, 2002a; Text 2).⁸ In another piece we read, “Clonaid has always been a secret entity respecting the location of their labs as well as their human and financial resources” (Dumay, 2002; Text 7).⁹

Furthermore, it is explicitly stated that we are dealing with a group that operates outside the law; one of the texts is subtitled “the Raelian Sect did not apply for a legal authorization for the alleged experiment” (Townsend, 2002b; Text 4).¹⁰ All the distinctive features present the IRM as a clandestine and secretive sect, formed by uncontrolled individuals around the world—a group headed by Claude Vorilhon (Rael), an extravagant journalist who with his claims constitutes a more or less undefined menace to society, portrayed as an unscrupulous man who defies the law and who is ready to carry out his irrational projects.

And so the Raelians are presented as sectarians (in all the pejorative meanings of the term), with a reputation as swindlers and tricksters, absolutely lacking in scientific rigor and therefore without credibility. In spite of this image, the authenticity of their announcement could be neither confirmed nor refuted at the press conference or during the following days. Rael and his acolytes, together with other undetermined groups or individuals, such as the Italian Dr. Severino Antinori, are dubbed as “rogues” capable of carrying out their perverse intentions (Sampedro, 2003b, 2003c; Texts 10 and 15). These unscrupulous characters represent a diffuse menace that puts at risk the unity, respectability, political status, and research prospects of the “scientific community.” In its editorial of January 7, 2003, *El País* writes, “It would be regrettable that the ravings of a group of illuminati would end up preventing the extension of this technology to human beings” (Editorial, 2003; Text 14).¹¹

Nonviability and unacceptability of “reproductive” cloning: Problems with clonal development. It is noteworthy how ethical and moral arguments to refute human cloning have not been preponderant in this controversy, as opposed to the case of Dolly (e.g., Hopkins, 1998; Petersen, 2001, 2002; Priest, 2001; J. Van Dijk, 1999; Wilkie & Graham, 1998). On the contrary, technical arguments, that is, those that emphasize biological problems derived from “reproductive” cloning, were widely quoted. In this way, a clear discursive relationship between the argument about the low rate of success of the method used and that about the deleterious effects on the clone development (whether it be embryo, fetus, or adult) is established.

These arguments mostly appear in the discourse by direct quotations of scientists and, to a lesser extent, other sorts of actors. There are many examples of this argumentative conjunction in the texts analyzed, whose purpose seems to be to relegate “reproductive” cloning to a sort of aberrant and illicit practice, thus giving “therapeutic” cloning a central role. As a token,

Experts point out that, besides the enormous difficulty to obtain a viable embryo, many problems might come up in the first months or years of life, judging by cloning of animals, where many have been born with malformations and have prematurely died or grow old.

Dr. Rudolf Jaenisch, biologist of the MIT Whitehead Institute for Biological Research, opined that “it is not responsible to clone human beings before knowing more about anything that may go wrong. It is using humans as Guinea pigs.” (Townsend & De Benito, 2002; Text 1)¹²

Cognitive authority and social legitimacy of “scientific community.” In the scenario set up by *El País*, the “scientific community” appears to be represented as a homogeneous entity, without cracks, directed as a whole in the quest for true knowledge and its uses in an altruistic way, mainly for basic research and the cure of diseases that affect wide sectors of the population, such as diabetes or Alzheimer’s. Thus, the portrayal of the “scientific community” is shaped as an institution endowed with the cognitive authority and social legitimacy resulting from its mechanisms of self-regulation: a rational and consensus method, publication of results in peer-reviewed journals, and so on. The popular representation of “scientific community” supplied by the media is as strongly related to a positivist and canonical view of science and technology as it is to the Mertonian ethos of the responsible scientist. Members of this community are described as serious, reliable, and expert, as in the phrase “a pretension [cloning of Eve] to which no reliable scientist gives credit” (Sampedro, 2003b; Text 10).¹³ In addition, a profuse and well-characterized number of scientific sources is consulted by the newspaper

Table 3
Antagonistic Features Used by *El País* to Construct Images of the Raelians and of the “Scientific Community”

Raelian Movement	“Scientific Community”
Consisting of impostor and malicious individuals	Consisting of honest scientists (Mertonian ethos)
Research for lucrative purposes	Research for altruistic purposes
Defenders of “reproductive” cloning	Defenders of “therapeutic” cloning
Consisting of charlatans, quacks, and mystifiers	Depository of truth and authorized by their professional credibility
Consisting of illuminated sectarians	Consisting of cautious and responsible scientists
Clandestine and fraudulent research, which does not provide scientific evidence	Research based in application of the scientific method
Secret laboratories	Authorized laboratories
Main purpose of cloning: to achieve eternal life and to create an entirely artificial living being	Main purpose of cloning: to cure millions of people suffering from several degenerative diseases

(e.g., Steven Teitelbaum, professor of pathology at the University of Saint Louis in Washington and president of the Federation of American Societies for Experimental Biology). Occasionally, scientists are positively defined in opposition to the Raelians, for instance: “The technology that the Raelians claim to have used (to the disbelief of experts) is hardly six years old” (De Benito, 2002; Text 3).¹⁴ This fragment implicitly suggests that the Raelians might lie, and that is why experts doubt. If the Raelians are liars, it easily follows that experts are not only honorable but also the only ones authorized on factual matters that may give or negate credibility. Furthermore, the Raelians work in secret, clandestine labs, while scientists belong to well-established institutions that enjoy public recognition or to legal, state-of-the-art firms in the field of genetic research. In Table 3, the images of the Raelians and the “scientific community” are compared.

The text “Two Risks and a Fear” (Sampedro, 2003a; Text 11)¹⁵ provides an interesting discussion on the obstacles that the “scientific community” has to face in order to pursue its research projects:

The scientific community, which already faces enough problems with law as well as religious prejudice in many countries, is really concerned by this possibility [that governments react to the Raelian announcement by forbidding cloning altogether]. (Sampedro, 2003a; Text 11)¹⁶

The text assumes that the “scientific community” is being exposed to external and retrograde influences that may hamper its progression in search of truth. Science is pure and exempt from ideological concerns. Ideological concerns are always external and have the effect of breaking its capacities. In the same line, Lanza, scientific vice president of ACT, expresses his opinion by saying that the Raelians’ announcement favors the religious conservatives and antiabortion groups (*New York Times*, 2002) (Text 8).

Necessity of policy makers to differentiate between “therapeutic” and “reproductive” cloning and future benefits of “therapeutic” cloning. From the analysis, it is possible to infer that *El País* constructed and addressed the controversy on human cloning in terms of a “menace to progress of science” and, as a consequence, attempted to persuade institutions to consider the necessity of adequate unrestrictive political and legal regulations for the management of scientific research on therapeutically oriented genetic techniques. An announcement such as the Raelians’ added to similar ones before and was presented as a threat to further scientific research in that field and, eventually, a menace to research and development and consequently to the “scientific community” taken as a whole. A permissive attitude of politicians and legislators toward stem cells, cloning embryos, and other associated techniques might be expected to diminish in direct proportion to an increase in mistrust of such practices.

In a perfect symbiotic relationship with ad hoc selected sources, the newspaper strived to present “reproductive” cloning, not just as an ethically reprehensible practice but rather as a dangerous procedure producing anomalies in the embryo, fetus, or clone. Furthermore, scientists warn us that statements favorable to “reproductive” human cloning made by sectarians as the Raelians might lead to important prejudices to scientific research by inducing policy makers to introduce generally restrictive regulations. In a similar way to the representation in negative terms of “reproductive” cloning, the same effort was invested in order to emphasize the excellences of “therapeutic” human cloning (*rhetoric of future benefits*). This rhetoric was justified by the fear that policy makers could establish generic prohibitions as a consequence of not differentiating between “reproductive” cloning (evil per se, illegitimate, and pernicious for society) and “therapeutic” cloning (good per se, legitimate, and beneficial for society). Prohibition would have an undesirable effect on the beneficial biomedical and pharmacological research in “therapeutic” cloning.

In my approach, the rhetorical strategy that tries to present as an essential property the differences between “reproductive” and “therapeutic” is the keystone

to the structure given by *El País* to the whole debate on human cloning. Again, the discourse of scientists is essential to sustain this argumentative axis. In the editorial of January 7, 2003, *El País* summarized this line:

[Raelian pretensions] may have undesirable effects, . . . because policy-makers, moved by a desire to impede foolish ventures of this sort, may put in the same bag a different sort of cloning, namely, therapeutic, for which solid scientific reasons and medical research exists. (Editorial, 2003; Text 14)¹⁷

Discussion

Above, I have examined the different arguments and rhetorical strategies that *El País* used to defend the legitimacy of research with cloning human embryos. Now I try to clear up in what way the actors involved in the debate were “strained” to negotiate and make solid determinate interests, arguments, social alignments, several sources of empirical evidence, cultural values, and so on in the network of relationships that *El País* created with the approval of scientists. My thesis is that certain principal actors (in this case, *El País* and ad hoc selected scientific sources) needed to construct and keep a network of allies as wide and heterogeneous as possible to achieve the successful implantation of their ideas, although it might be temporary. This purpose was sustained through the elaboration of a specific rhetoric on human cloning and encouraged other actors—at the beginning not implicated—to change their points of view and accept the postulates of the principal actors. *El País* constructs and spreads, to wide sectors of society, a determined interpretation of reality. To define the relationships that were established among the actors involved, *El País* used texts as intermediaries. Such texts constituted the “form and substance” of the interactions. The texts can be considered as inscriptions that facilitate extending the translation to large distances (Law, 1986).

The human cloning constitutes a problem differentially stated because it is seen as two different sorts of cloning: “reproductive” and “therapeutic.” Though the technique used is the same in both cases, it is understood that in the first case the embryo is implanted in the uterus for its subsequent gestation and birth, while in the second case it is only allowed to develop to the early embryonic stage, which allows one to obtain stem cells with a potential “therapeutic” value. The distinction between “therapeutic” and “reproductive” served the actors involved in the debate to consolidate human cloning as a “scientific fact” and, most of all, to construct it as a problem

of scientific policy, thus calling on political authorities to take it into account in further legislation. Media journalists, scientists, and experts in ethics consulted, plus members of biotechnology companies, are linked to make an interaction network led by *El País* with the purpose of rebutting, on scientific and moral grounds, the Raelian announcement.

Such a distinction also allowed them to move human cloning from the ethical context (moral opposition to the Raelian announcement) to the scientific-political context (rational defense of the therapeutic research). With this translation the debate surrounding human cloning was mainly established as a legislative problem that required a rational regulation if it were not to slow down the progress of scientific research—research that not only is good in itself, given the basic knowledge it provides, but also has important social consequences such as new therapies destined to help ease the deleterious effects of certain degenerative diseases.

From the analysis of the several strategies that were used to discredit the Raelians' announcement, it is possible to infer that *El País*, in association with the scientists who are interested in promoting research with human embryos, tried to consolidate a "robust opinion" of the benefits of "nonreproductive" cloning. A strong point of view is therefore an articulate and consolidated position—although in a kind of unstable equilibrium—in the sociocognitive network of the actors. Therefore, *El País constructs the debate about human cloning as fundamentally one of scientific policy, and not as an ethical problem.* This reformulation of the *map of interests* became necessary to execute the persuasive action on the public and on the policy makers. Selecting some actors and not others, and defining them in a specific way and not any other, is closely related to the terms in which the debate is framed, that is, to the type of problematization that the principal actors carry out.

El País polarized the controversy. This was manifested in the simplification leading to "scientific community" that can be considered as a homogeneous entity and endowed with moral imperatives as conceived by Merton. Moreover, the Raelians were also portrayed as a diffuse and more or less uncontrollable menace. The public image of the Raelians was shaped on a founding stone: the lack of moral and scientific authority that was assigned to them. This induced both scientists and the newspaper itself to think that the announcement about Eve's cloning was in all probability a response to a campaign exclusively orchestrated to obtain publicity and notoriety in the media.

Scientists, on their part, were seen as an integral part of an intellectual, reliable, and legitimated elite. Lanza, scientific vice president of ACT, was the technoscientific expert with the largest visibility who was designated as

“spokesman” from the “scientific community”; he introduces himself as someone involved in rigorous research, a leader of honesty and proponent of science as an altruistic institution. With this image, it was forgotten that Lanza was working as an expert in a biotechnology company that applied commercial criteria to their research.¹⁸ Despite several prestigious experts attacking both the scientific relevance of ACT’s experiments and the excessive publicity given to their poor results (e.g., Gil, 2001), Javier Sampedro, journalist of *El País*, did not mention anything in his interview with Lanza about these issues (Sampedro, 2003b; Text 10).

When the media defined scientists in this way, they were constructing a homogeneous portrayal of the “scientific community” that, implicitly and/or explicitly, had a set of virtues (ethos of science) that raised the primacy of science. This representation generated an effect of dissociation from all those actors who could tamper and dilute such a solid image. Although Lanza was defined himself as a distinguished member of the “scientific community” as well as an outstanding researcher in the field of biomedicine, it was clear that he was an executive of an American biotechnology company that had an evidently commercial goal.

Thus, for instance, Lanza said,

[The Raelians] have caused a terrible prejudice to the scientific community. It could affect medical research devoted to finding ways of curing illnesses for millions of people and it will be tragic that this announcement carries with it the banning of all kinds of cloning. This is the announcement which the religious conservatives and anti-abortion groups hoped for. (*New York Times*, 2002; Text 8)¹⁹

In the above-mentioned interview, Lanza talked about the importance of ACT’s work:

We were the first to obtain a cloned human embryo. This was published in the peer review scientific journal, *Journal of Regenerative Medicine* on November 26, 2001, so the data could be examined by the scientific community. (Sampedro, 2003b; Text 10)²⁰

It can be deduced from these statements that Lanza imputes to himself, as both ACT’s spokesman and that of the whole “scientific community,” several moral imperatives that Merton (1942) described more than 60 years ago: (a) *communism*, or belonging to “scientific community” and supporting the public dissemination of research results through recognized journals; (b) *disinterest*, or the absence of any interest but the search for genuine

knowledge and the common well-being reported to society, that is, that millions of people who could be cured; and (c) *universalism*, or adscription to common technical standards of evaluation. The references to religious conservatives and antiabortion groups emphasize, yet more, the ideological autonomy and the disinterest that Lanza and his company take for themselves as integral members of the “scientific community.”

The fourth Mertonian imperative, *organized skepticism* (suspension of public dissemination of imprecise or badly checked data), does not seem to affect Lanza in spite of the experimental results obtained by ACT with “cloned embryos” that were strongly criticized by prestigious scientists as being of little relevance (e.g., Gil, 2001). Moreover, the attitude of the company was branded as a matter of engaging in spectacular marketing operations (Fox, 2002).

It is important to observe that Lanza was both the most representative actor of the “scientific community” and also the only one who granted credibility to the Raelian announcement:

There is a very real possibility that someone like the Raelians . . . [could] clone a baby in a near future, especially if they have resources and access to sufficient human ovules. *Therefore, it is not advisable to undervalue those announcements, especially if it is considered that we obtained embryos of this phase* [italics added]. [Lanza makes allusion to phase of six cells] after only three or four tests, and with a very small amount of ovules. (Sampedro, 2003b; Text 10)²¹

Although Lanza’s former and latter discourses seem oriented to delimiting and dissociating their “valuable experiments” from the clearly immoral and contrary to scientific ethics Raelian experiments, it is possible to see that their rhetorical intention has a promotional stress. The scientific vice president of the ACT, in giving publicity to his company, did not hesitate when he said,

The embryos between four and eight cells, like those that we cloned in 2001, could very well produce a cloned baby if these embryos were implanted in a woman’s uterus. (Sampedro, 2003b; Text 10)²²

These statements clearly are in conflict with any strategies that the “scientific community” has argued to discredit the Raelian announcement: both the argument of the very low rate of success that the technology of cell nuclear replacement presents and the argument of the deleterious effects on the development of clone, whether it be embryo, fetus, or adult. It calls attention to “Two Risks and a Fear” (Text 11), a text spatially related to Sampedro’s interview, in which the journalist asserted,

The technology of cloning still is imperfect in experiment animals, *and no self-respecting scientist can guarantee that the development of embryos will be carried out with normality* [italics added]. (Sampedro, 2003a; Text 11)²³

In spite of the fact that the general guideline is the moral and scientific discrediting of the Raelians (including Lanza), Lanza's opinions can be considered to be an exception because he acknowledges a certain credit to the Raelian announcement.

In absence of the least scientific information, it is necessary to carry to an extreme skepticism, specially considering the fact that the Raelians do not have any research credibility at all. . . .

Although [Antinori] has more credibility than the Raelians, he is as scientifically irresponsible as them. Anyhow, since the implanting of a cloned embryo of 4 to 8 cells might work, and even though it is clearly immoral and contrary to scientific ethics, nevertheless there is a very real possibility for someone like Raelians, Antinori or any other group of rogues to clone a baby in the near future. (Sampedro, 2003b; Text 10)²⁴

Ambivalence and ambiguity emerge from the struggle between opposing interests: ACT's promotional strategy outweighs the caution required by some deliberately optimistic assertions. On many occasions—as Nelkin (1995) points out—when scientists exhibit their research in popular forums, they are prone to overestimate the benefits of their work, which reflects the strong promotional tendency of their declarations.

For ANT, scientists are not simply scientists, as we have to also think of them as versatile actors who, using strategies and rhetorical resources, are dedicated to political, sociological, and economic activities in addition to those practices traditionally considered as “scientific.” Thus, scientists, through these strategies, extend their influence beyond the laboratory, for which they must enroll other actors. ANT has developed a conceptual structure in order to account for this complex process (Singleton & Michael, 1993).

El País makes an interpretation of their interests and those of other actors that it wants to enlist. How does it achieve this? According to Callon (1986), it is possible to distinguish four moments of translation that represent juxtaposed phases in a continuous process of negotiation and imputation of interests. I discuss these four overlapping moments below.

First Moment: Problematization, or How to Become Indispensable

During the public debate on human cloning, *El País* did not limit itself to merely posing the relevant questions of the techno-scientific problem but rather selected a series of actors and defined their identities in such a way that the media became the public forum in which to act out the controversy; that is, it positioned itself as an obligatory step in the heterogeneous network of relations that was being formed. Problematization was a bidirectional movement that made the newspaper indispensable for framing the debate in a specific and directed way. *El País* defined the actors with several degrees of precision, but this definition was sufficiently clear for determining in what way they were connected with the techno-scientific questions being raised. The actors that *El País* defined were the Raelians, the “scientific community,” the policy makers, the consumers of journalistic reporting, the “cloned embryos,” and the newspaper itself.

Therefore, *El País* did not limit itself to simply identifying a number of actors, but rather these were defined in relation to the benefits they would obtain if they accepted the technical and moral distinction between “therapeutic” and “reproductive” cloning; that is, determined interests were ascribed to determined actors. In my view, *El País* showed that the interest of the debate was on the distinction between “reproductive” and “therapeutic” cloning in order that biomedical research would be legally regulated in an adequate way. The effect of the network was that “therapeutic” cloning and research with human embryos, in order to obtain stem cells, would arise as legitimate possibilities, without moral obstacles and with evident benefits for society.

Second Moment: The Devices of “Interessement,” or How the Allies Are Locked Into Place

It has been shown above how, by means of Callon’s notion of the “obligatory passage point,” *El País* seems to have established the identities and the goals of the different actors involved in the human cloning public controversy. “Interessement” is the set of actions through which *El País* tries to impute and fix the identities of the other actors. To execute these actions, *El País* used several sorts of different strategies. In general, *El País* used persuasive strategies focused on the “rhetoric of future benefits” together with a rhetoric in order to socially and scientifically discredit both the Raelians

and the idea of cloning babies. *El País* in conjunction with selected ad hoc scientific sources established the distinction between “reproductive” and “therapeutic” cloning as an “objective fact.” The goal was to convince policy makers and public opinion that it was necessary to regulate both “reproductive” and “therapeutic” cloning. Thus, *El País* defined the identity, aims, and trends of their allies.

However, the allies can also be implicated in the problematization of the other actors. Their identities, therefore, are defined in a competitive manner. Thus, attracting other actors consists of constructing persuasive mechanisms that attract them and align them in a determinate manner in detriment to others who want to define their identities in different ways. These strategies might establish social links among these actors. Only if *El País* succeeds in disconnecting other preexisting links between citizens or politicians and other social agents can it be said that enrollment takes place.

Third Moment: How to Define and Coordinate the Roles (Enrollment)

Callon and Law (1982), in their analysis of interests, call the process through which determinate actors use their interests as strategies in order to obtain the adhesion of other actors to their projects the “enrollment” or the “formation of networks.” In order to enroll, for instance, policy makers who could regulate techno-scientific practices that are involved in the manipulation of human embryos, first, policy makers must differentiate between “therapeutic” and “reproductive” cloning as well as the benefits of the former and the damages of the latter. There are, nevertheless, many forces that can go against this aim. The Raelians’ claims seem to be clear, hence the newspaper’s insistence on elaborating its own discourse, coherent with the discourse of scientists. This discourse could undermine not only the announcement itself but also the sect as a whole institution. The enrollment is a process of alliances, adverse forces, negotiations, and consensus.

Fourth Moment: The Mobilization of Allies and the Problem of Representativeness

Although the rhetoric of “standard scientific rationality” leads one to think that the “scientific community” is a uniform and solid entity and that it is governed by Mertonian moral imperatives, it is clear that the scientific community is a heterogeneous entity. It is constituted by several disciplines with diverse methodologies and purposes and various kinds of scholars who

have interests, objectives, and very different expertise. The reaction of scientists to the imminent possibility of humans being cloned was by no means unanimous. However, *El País* mobilized determinate allies to defend the distinction between “therapeutic” and “reproductive” cloning and its legal regulation. The newspaper negotiated both the “interesement” of the political authorities and public opinion through the construction of a discourse that could undermine the Raelians’ thesis as well as the selection of a few scientists who were in accord with these arguments.

Therefore, *El País* established a relationship not with abstract or virtual entities but with individuals who could or could not have been representative spokespersons of these entities. The “scientific community” as a whole was not convinced of the distinction between “therapeutic” and “reproductive” cloning and of the necessity to regulate human cloning in favor of the former but rather only a few consulted scientists. Public opinion as a whole was not convinced, only those people or groups (e.g., the Federation of Spanish Diabetics) who for several reasons urge policy makers to regulate research with human embryos and to authorize the use of the reprogenetic technologies.²⁵ Nor are all politicians interested in “therapeutic” cloning, only those for whom this is not a moral impediment or for those who have a political and economic interest in specific biotechnology companies. Nor are all cloned embryos as conceptual units “interested” in “therapeutic” cloning, only those who will develop to a very early stage of embryogenesis (blastocyte) and, according to determinate criteria, do not have the ontological status of being human. In all cases, “a few individuals have been interested in the name of the masses they represent (or claim to represent)” (Callon, 1986, p. 209).

The cloned embryos are probably the most problematic agents. The only reference to cloned embryos comes from the ACT company, which announced in November 2001 that its scientists had obtained a “human embryo” by cloning. However, this alleged embryo did not develop beyond the six-cell stage. This “achievement,” published in a specialized journal, *Journal of Regenerative Medicine*, was very controversial and received many critiques given that a small cellular mass, far away from the blastocyte stage (100 to 200 cells), does not seem to be the most suitable structure to be utilized as a source of embryonic stem cells. For ACT’s researchers, this stage of six cells constituted a “human embryo.” This “human embryo” represented for them a suitable source of stem cells, and if it was implanted in a woman’s uterus it could develop into a human being. For other experts this was a preliminary and rather limited result. The communication of their results through scholarly and popular channels was based more on commercial than scientific criteria.

Whether the result was a “poor experiment” or a “spectacular advance” for therapeutic research with human embryos, the fact is that ACT, through its announcement, became the company that had the greatest possibility to “achieve a usable human embryo for medicine” (Sampedro, 2003b). In the debate, ACT presented itself as a reliable company that is oriented to saving millions of people affected by diseases that are incurable today. During the debate, no reference was made to the possible publicity interests of ACT’s announcement in November 2001. Although ACT’s embryos were legitimate, the Raelians’ embryos were not. Despite the fact that no references about the controversial human status of embryo were raised in the public dispute, the newspaper implicitly granted value to some embryos over others. *El País* did not exhibit the cloned embryos, but it offered percentages of viably, morally, and scientifically acceptable and/or unacceptable cellular stages, agreed on reprogenetic techniques, plausible experiments, and so on. In this way, *El País* constructed the legitimacy of some embryos (ACT’s) versus other embryos (Clonaid’s). A translation process had occurred.

However, not all actors were represented in the same way. Scientists and scientific institutions selected ad hoc were the most representative actors in both diversity (14 different actors) and total calculation of direct quotes (22 in total). Those actors developed the discourse of the rationality of science. The fact that there are many direct quotes of scientists is an unequivocal mark that scientists are granted the greatest credibility in the debate. After the scientists come the Raelians’ spokespersons (Claude Vorilhon and Brigitte Boisselier), and although they were cited much more than the scientists (43 times for both Raelians), their quotes were direct only 4 times. Politicians were scarcely represented, although they were addressed as the agents entrusted to appropriately regulate the controversy. On the contrary, actors who in the past played an important role in the debates surrounding human cloning (e.g., members of the Catholic Church or experts in bioethics) were not actually represented.

Both the nature and the diversity of the sources indicate to us that the debate was oriented to the scientific policy problems of human cloning. Thus, once the alliances were established, *El País*, in the name of the ad hoc selected representatives, acted as “mediator” between the hopes of the “scientific community” and the interests of public opinion and policy makers.

El País could become influential if it achieves becoming the “visible head” of several actors. The newspaper brought together experts, affected citizens, politicians, cloned embryos, and so forth. As representative of all those actors, *El País* realized progressive mobilizations of actors who by

forming alliances and by acting in synergy made certain claims credible and indisputable, such as the systematic distinction between “reproductive” and “therapeutic” cloning, the nonviability of cloning humans, the honesty and rigor of the “scientific community,” the lack of legitimacy of people and groups in favor of “reproductive” cloning, and so forth.

Conclusion

From the early phases of the debate, *El País* presented the Raelian announcement as a problem of lack of credibility and nonviability of “reproductive” cloning. The ongoing use by the newspaper of the referred-to discourse contributed to discrediting the Raelians. On the one hand, it was used to put the announcement in context *scientifically* (the nonviability of the Raelian experiment, taking into consideration that the effectiveness of the technology of cell nuclear replacement is less than 2%). On the other hand, it was used to put it in context *socially* (the lack of the Raelians’ credibility because of their attitudes in the past and their “disheveled” ideology). Both seem to indicate that the argumentative line of *El País* was based on considering the Raelians as the ideal pretext in order to revive the public debate surrounding human cloning, according to determinate interests. Although ethical arguments were used in the debate, they were not central. Rather, the debate focused on the negative effect that the Raelian announcement could have on both research with human embryos and development of cloning with therapeutic purposes. Therefore, the core of the debate presented by *El País* was channeled to political and legislative issues and to the regulation of scientific research problems.

The coverage of *El País* on human cloning, and in general about technoscience itself, shows the values of the perspective of “scientific rationality” (i.e., progress, facticity, and lack of emotional components that are believed to be an essential part of scientific information). Scientists, therefore, take up a position of cognitive authority over other actors’ authority. Fairclough (1995b) suggests that “the ideological work of media language includes particular ways of representing the world, particular constructions of social identities, and particular constructions of social relations” (p. 12). Indeed, the media coverage constructs a particular representation of human cloning, scientific experts, and the relations among scientists, politicians, and the public.

In the media coverage of a public techno-scientific controversy, the selected sources determine the tone and context of the journalistic discourse. Those sources that tend to sustain an authoritative position are, in

general, scientists and governmental representatives (Conrad, 1999). Such sources are essential for the construction of social reality by media, which implies that a bias toward a kind of source leads to restricted public debates and channels them to definite and exclusive ideological and/or argumentative lines. The profuse quotation of scientific sources in the journalistic discourse of *El País* and their ongoing exhortation to politicians to exercise social responsibility make evident the pretensions of the debate: the construction of human cloning as a problem of scientific policy.

One of the most controversial points of the debate was about the authenticity of the announcement. On the one hand, the consulted scientists (in a sense, except Lanza) devalued the announcement's authenticity for several reasons: (a) because cell nuclear replacement presents undesirable technical problems well documented in the scientific literature, (b) because of the Raelians' lack of evidence, and (c) because of the doubtful credibility of Michael Guillen, the journalist entrusted to establish the truth about Eva's cloning. However, the most "visible" scientist during the debate (Lanza) did not hide his preoccupation with the announcement's plausibility. This preoccupation of Lanza's seems to be related to the overvalued success that ACT proclaims for their experiments with embryos. Lanza might be using the Raelian announcement as a perfect excuse with which to defend the viability of the cloning of human embryos. Nevertheless, nowhere along the debate does he doubt the distinction between "therapeutic" and "reproductive" cloning.

One principal component of the controversy was the fact that for a lot of scientists, above all those linked to biotechnology companies with commercial interests in cloning, the Raelians' announcement was a serious menace to the support and progress of new reprogenetic technologies. For those scientists and businessmen, the development of these technologies is fundamental if it is intended to help basic research and therapeutic applications. The conflict emerges when the proponents of technological development view the Raelians (and other actors considered "dangerous") as forces contrary to the progress of scientific research.

Notes

1. The expression *scientific community* appears to indicate that *El País* used it with rhetorical intentions. In practice, it is not the "scientific community" that reacts or informs as a homogeneous whole but rather only some of its members.

2. A sociocommunicative perspective emphasizes the important role played by the social context in the description and explanation of written or oral texts. As Charaudeau (1997) showed, any communicative process is *intentional*. For communicative process, the symmetry between transmitter and receiver is illusory. Rather, it is a question of a process in which the

meanings emerge thanks to the interaction among the target group of information, texts, and social contexts.

3. Callon (1986) defined obligatory passage point (OPP) as the ability that a determinate actor has to persuade other actors. Actors who or that are enrolled in the network are persuaded to move through these OPPs, and thus contribute to the routinization and durability of the network. Actors who or that successfully define and control an OPP become indispensable and grow in strength. Creating an OPP is dependent on the ability of the actor to enrol and persuade other actors of the value of the OPP.

4. All textual fragments quoted as examples are here presented in their original Spanish version: "Su empresa ha logrado un 50% de eficacia en los procesos. . . . En concreto, afirmó [Brigitte Boisselier] que de diez intentos, cinco habían resultado satisfactorios."

5. "En las mejores condiciones, y sólo en algunos mamíferos, se han conseguido tasas de éxito que como mucho han quedado por debajo del 2%. Es decir: ha habido que manipular cien óvulos para conseguir una gestación completa. El método es tan complicado que todavía ningún científico ha conseguido usarlo en monos, el modelo animal más cercano al hombre."

6. "La Asociación Americana para el Avance de la Ciencia (AAAS), la mayor organización científica del mundo, rogó a los legisladores y al público en general 'tratar con escepticismo' los anuncios de tipo raeliano 'hasta que se disponga de evidencias científicas confirmadas.'

"'Tales anuncios no verificados,' señaló la AAAS en un comunicado, 'basados en el trabajo de laboratorios clandestinos y descontrolados, son totalmente contrarios a las normas de la buena práctica científica.'"

7. "Laboratorios clandestinos y descontrolados."

8. "Ahora bien, como es habitual en esta secta, ni aporta identidades ni paradero ni métodos de trabajo."

9. "Clonaid siempre ha sido una entidad secreta, tanto respecto a la situación de su laboratorio como a sus recursos humanos y financieros."

10. "La secta de los raelianos no solicitó la autorización legal para el supuesto experimento."

11. "Sería lamentable que los delirios de un grupo de iluminados acabaran yugulando la posible extensión de esa técnica al ser humano."

12. "Los expertos señalan que aparte de la enorme dificultad para obtener un embrión viable, pueden surgir problemas en los primeros meses o años de vida, a juzgar por las clonaciones hechas en animales, donde muchos han nacido con malformaciones y han envejecido o muerto prematuramente.

"El doctor Rudolf Jaenisch, biólogo del Whitehead Institute for Biological Research en el MIT, opinó que 'no es responsable clonar seres humanos antes de saber más sobre todo lo que puede ir mal. Es usar a los humanos como conejillos de indias.'"

13. "Una pretensión [la clonación de Eva] a la que ningún científico solvente otorga credibilidad."

14. "La técnica que los raelianos dicen haber usado (ante la incredulidad de los expertos) apenas tiene seis años de vida."

15. "Dos riesgos y un temor:"

16. "La comunidad científica, que ya tiene bastantes problemas con las legislaciones y los prejuicios religiosos en muchos países, está realmente preocupada por esta posibilidad" [se refiere a que los gobernantes reaccionen al anuncio raeliano prohibiendo totalmente la clonación].

17. “[Las pretensiones de los raelianos] pueden tener efectos indeseables . . . porque los legisladores, movidos por su deseo de impedir aventuras descabelladas de esa clase, pueden echar en el mismo saco un tipo distinto de clonación, la terapéutica, para cuya exploración existen sólidas razones científicas y médicas.”

18. Ian Wilmut himself was very critical when he asserted that the Advanced Cell Technology (ACT) announcement, in terms of scientific advantage, was irrelevant and seemed to indicate that ACT needed publicity to obtain funding. According to several experts, ACT’s experiment was not technically complex, and their public dissemination was a strategy of marketing rather than an exceptional scientific achievement.

19. “[Los raelianos] nos han ocasionado un tremendo perjuicio a la comunidad científica. Podría afectar a la investigación médica empeñada en encontrar caminos de curación para millones de personas, y sería trágico que ese anuncio desembocara en la prohibición de todas las maneras de clonación. Es el anuncio que la derecha religiosa y los grupos antiaborto rezaban por vivir.”

20. “Ya fuimos los primeros en obtener un embrión humano clónico. Lo publicamos en la revista científica revisada por pares *Journal of Regenerative Medicine* el 26 de noviembre de 2001, para que los datos pudieran ser examinados por la comunidad científica.”

21. “Existe una posibilidad muy real de que alguien como los raelianos . . . clone un bebé en un futuro cercano, especialmente si tienen recursos y acceso a los suficientes óvulos humanos. Por tanto, no es aconsejable desestimar esos anuncios, sobre todo si se tiene en cuenta que nosotros obtuvimos embriones de esa fase [Lanza hace alusión a las fase de 6 células] después de sólo tres o cuatro intentos, y con un suministro muy escaso de óvulos.”

22. “Los embriones de entre 4 y 8 células, como los que clonamos nosotros en 2001, podrían muy bien dar lugar a un niño clónico si se implantaran en el útero de una mujer.”

23. “Las técnicas de clonación son aún imperfectas, incluso en animales de experimentación, y ningún científico serio está en condiciones de garantizar que el desarrollo del embrión proceda con normalidad.”

24. “En ausencia del menor dato científico, es preciso extremar el escepticismo, especialmente si consideramos el hecho de que los raelianos no tienen ninguna credencial investigadora. . . .

“Aunque [Antinori] tiene más credibilidad que los raelianos, es exactamente igual de irresponsable científicamente. De todos modos, dado que la implantación de un embrión clónico de 4-8 células podría funcionar, y aunque es claramente inmoral y contrario a la ética científica, existe una posibilidad muy real de que alguien como los raelianos, Antinori u otro equipo de granujas clone un bebé en un futuro cercano.”

25. In Spanish, it is Federación Española de Diabéticos.

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