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# Comparative application of two methodological approaches to the analysis of discourses

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## ABSTRACT

*The analysis of discourses involves problems and choices related to the integration of quantitative and qualitative methodologies, the formalisation of qualitative analysis, the software used and the identification of the units of analysis. These are issues that can be solved considering the typology of discourses analysed and the topic under examination.*

*We present results of research that examined the integration of two different methods of analysing data using the two computer programmes Alceste and NUD\*IST. The corpus examined is made up of articles published in two leading news magazines about 'the Di Bella affair', which exploded in Italy at the end of the 1990s. The affair concerned an anti-tumour therapy introduced as an alternative to chemotherapy by Doctor Di Bella, but rejected by the Ministry of Health.*

*This issue flared up in the mass media and public opinion seemed mainly to side with the Di Bella treatment. Our general hypothesis is that this affair gave rise to a conflict between 'the reified universe' – scientific and governmental institutions – and 'the consensual universe' – laymen, patients and their relatives. An important role was played by the mass media that inflamed the conflict at the same time as representing it. We suggest that this case is understandable only if viewed within the context of the Italian political, cultural and ideological situation.*

*The description of the results stresses the usefulness of integrating the two methods of analysis since what emerges from one method serves to corroborate and clarify that which emerges from the other.*

**Keywords:** mixed methodologies; quantitative and qualitative analysis of discourses; software; Alceste; NUD\*IST; social representations; mass-media

## THE PROBLEM

Within the constructionist perspective, which has become established in social psychology from the last decades of the 20th

century, the analysis of discourse<sup>1</sup> has taken on a central importance. At the origin of psychology, the discipline was constituted as a science based on the method of introspection and self-

1 We are not referring to discourse analysis as a specific method but to discourse in general, namely any text consisting of propositions that make assertions to the Other, for example the reader of a magazine.

observation (Boring 1950). Today, more complex questions are being posed due to the diversity of discourses and of the ways in which they are expressed.

A central issue is the relationship between quantitative and qualitative analysis. By its very nature, discourse always requires qualitative analysis since thought processes and their modes of argument must be reconstructed. Quantitative and qualitative analyses do not stand in opposition and exclude one another; on the contrary, they complement and add to one another. Integration of quantitative and qualitative methodologies makes it possible to avoid the drawbacks with either methodology used individually. Analyses of correspondences and similarities are on their own correct and sophisticated from a formal and statistical standpoint; but if they refer solely to the words, they run the risk of losing sight of the meaning of discourses and texts.

The widespread practice in some constructionist psychosocial research of analysing sentences and arguments extrapolated from texts (free quotation), without any explicit methodological criterion or in the name of a theoretically ungrounded methodological freedom, greatly reduces the transparency of the studies carried out. Qualitative analysis does not in itself exclude the rigour and hallmarks (verifiability, validity, reproducibility) that are required in scientific research.

The entire field is pervaded by computer-assisted analysis with a growing variety of methods and software available. Although these methods and software are useful and perhaps indispensable aids, on their own computer programmes are unable to resolve the methodological problems posed by discourse analysis. The criteria used in choosing from among the various programmes need to be identified, especially when the programmes underlie different methods. Even more importantly, it is important to weigh up the potentials and limits of computer-assisted analysis and, above all, examine relation between the software's potential and the researcher's freedom. Another often neglected,

problem is that of identifying the units of analysis in order to avoid being arbitrary and to foster transparency, particularly where a qualitative analysis is being carried out.

The general problems mentioned here – the integration of the quantitative and qualitative methodologies, the formalisation of qualitative analysis, choosing which computer software to use, the comparative utilisation of different programmes, identification of the units of analysis – cannot be resolved once and for all and in an abstract fashion. The solutions sought and the choices made depend on the typology of discourse to be analysed and the concrete characteristics of the case or problem under examination. Every study needs a suitable method of analysing discourse, which can draw in part on existing methodologies. The utility to integrate qualitative and quantitative methodologies is underscored by the literature (Bauer & Gaskell 2000). One reason is that what emerges from one method serves to corroborate and clarify what emerges from the other. This is necessary in a still problematic field of research, as shown by the vast literature on the subject (see Degrada & Bonaiuto 2002).

## THE QUESTION EXAMINED

### The Di Bella affair, an 'alternative' cure for cancer

Luigi Di Bella, a retired university physiology professor, over a period of about twenty years treated his cancer patients with a therapy consisting of various drugs, the main one being a hormone, somatostatin. The anti-tumoral effectiveness of somatostatin has only been partially acknowledged by the international scientific community.

In early 1997, the Istituto Superiore di Sanità (the body under the Ministry of Health in charge of determining which drugs are to be covered by the National Health Service) after consulting the scientific literature, concluded that somatostatin could be supplied free of charge only for the treatment of *apudoma*, a tumour composed of APUD cells. As a result, a few thousand patients being

treated by Professor Di Bella suddenly found themselves having to bear the rather stiff cost of their therapy. Mobilised in various associations, the patients and their relatives contested this decision.

In November 1997, a magistrate upheld the complaint of a patient and ordered to provide somatostatin free of charge on the basis of the constitutional principle that all citizens have a right to health care. The affair came to a head when newspapers began to highlight the Di Bella issue. At the time, the centre-left government was headed by Romano Prodi. Criticism from the centre-right opposition prompted the Health Minister to review her position and numerous surveys showed that over 80% of Italians were convinced that Di Bella's therapy was effective and considered it more 'humane' than chemotherapy because it avoided what they considered to be unnecessary suffering on the part of patients. In March 1998, with the rise in public and parliamentary protest, the Minister made provision for an experimental trial, which lasted six months and involved approximately one thousand patients. It caused a great stir even worldwide and *Nature* published a letter from a group of Italian scientists condemning the experiment, which they considered both useless and a dangerous precedent. The trial period ended in October 1998 and its results proved to be negative for the Di Bella therapy. Despite this, four Italian regions still reimbursed their residents for expenses sustained while undergoing Di Bella's therapy.

## Theoretical framework and hypotheses

The relationship between common sense and science is a current issue and from a theoretical point of view also refers to the concept of social representations, starting from the dichotomy posed by Moscovici (1981, 1984) between 'the consensual universe' and 'the reified universe'.

Our general hypothesis is that the Di Bella issue gave rise to an intense conflict between 'the reified universe' of science, official medicine, health and ministerial institutions and 'the con-

sensual universe' of the sick, their families and common citizens, in which the mass media played an important role. The latter contributed to the emergence of the conflict and at the same time represented it. Equally, it is suggested that an understanding of the entire event is greatly facilitated by placing it within the *context* of the Italian political, cultural and ideological situation. In this way a central role is attributed to the *ecological* dimension (Lewin 1943, 1944): ie the historical, economic, social and cultural factors.

Within this theoretical framework, our hypotheses are that:

- a. the Di Bella affair and its representation were influenced by the 'ecological context', ie the Italian situation of the period;
- b. in the media the conflict between the consensual and the reified became evident;
- c. the representation of the affair, together with its conflictual aspects, was influenced by the media's political orientation.

It should be pointed out that here we can formulate hypotheses, also of a general nature, due to the fact that in analysing this empirical case, we refer to a particular theory, that of Moscovici on social representations. Nevertheless, the analyses made in the attempt to integrate qualitative and quantitative methods using different computer programmes do not permit a strong or full verification of these hypotheses; this verification would be possible for example through experimental research. Rather, our analysis makes it possible to explore the hypotheses and their adequacy. In this respect, one could – to use a neologism – speak of an 'exploratory verification', whose main aim is to clarify the hypotheses put forward. Consequently, the analyses undertaken will highlight how, in this specific case, the formulated hypotheses are made explicit and take shape. For example, they will bring out the forms in which the differences and the conflict between the different 'discursive universes', between the reified universe of science and the consensual universe of common sense, are expressed.

## Texts analysed

The sample comprised 124 articles (news, interviews, commentary) on the Di Bella affair published in the period from December 1997 (eruption of the case) to November 1998 (temporary conclusion of the case with the publication of the negative results from the official testing of this alternative therapy) in two major Italian weekly news magazines of opposing political tendencies: anti-government right-wing *Panorama* (43 articles) and pro-government left-wing *L'Espresso* (81 articles). A total of 107,923 words were analysed.

## METHODS

All the texts were analysed using two different methodologies. After a first careful reading of every article, a thematic content analysis was undertaken using the programme NUD\*IST<sup>2</sup>. The grid of categories applied for this analysis was constructed on the basis of the research's fundamental hypotheses relative to the explanatory function attributed to the situation in which the event occurred and to the relation between the consensual and the reified. As in traditional content analysis, the categories should be understood as questions in a structured interview and the texts as the subjects to be interviewed. Furthermore, the applying of these categories by at least two independent researchers' leads, especially in the initial phase of analysis, to adjustments and changes that lead, in turn, to some categories being modified and others eliminated. As well as allowing a reduction in the time for data analysis, the use of NUD\*IST allows to

control and reproduce the procedure, which has to follow precise stages. The analysis carried out in this way made possible an also quantitative comparison between the two weeklies (that is arguments predominant in one as opposed to the other or common to both) and an analysis of the sentences, or propositions, regarding the various categories set in relation to one another.

Furthermore, using the programme Alceste, an analysis was made of the lexical correspondences (ACLs)<sup>3</sup> in which the two weeklies were taken as passive variables. This method provided with an overall synoptic view of the textual corpus examined. From the analysis emerged the main aspects characterising *L'Espresso* as against *Panorama* or that are common to both. Analysis of lexical correspondences is held to be particularly suitable for studying social representations (Bauer & Gaskell 2000). But this is true only if single words, as well as the quantitative indices (their frequencies and connections) are interpreted with reference to the sentences and context in which they are inserted. The reason for this is that thought is not expressed in words but in sentences, as we are reminded by an authoritative voice (Wittgenstein 1969). The definitions that we used for the classes emerging from the Alceste programme have the same value as the labels or definitions normally used to indicate the latent dimensions arising from factorial analysis. If the definitions have a meaning that can be recognised and interpreted on the basis of the initial hypotheses, this indicates that the analysis carried out can be meaningful and valid.

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- 2 NUD\*IST is a programme for the analysis of unstructured data. Its functions include, among others, the possibility to: attribute codes to text segments that constitute or help to constitute the units of analysis, defined according to determinate criteria; construct a hierarchy of categories; identify the co-occurrences of categories both within the same text segment and by taking this segment as the pivot; look for words or expressions and categorise the results in nodes; create matrices that describe the weight of each category.
  - 3 ACLs allow application to text data of the analysis of correspondences developed by Benzecri (1964 1973 1980) in order to study tables of co-occurrences of different categories of words or of vocabulary and text. To this end, Alceste divides the corpus into text segments (called 'elementary contextual units: 'ECU') and builds up a dictionary starting from the lexical forms in the texts examined. Analysis of the distributions is made by constructing a table that puts in columns the lexical forms considered and in rows the aggregations of contextual units called 'classes' that make up the corpus. Statistical study of the table has the aim of bringing together and describing the vocabulary typical of classes and the graphic and textual representation of the results of analysis identifies the 'lexical worlds', the set of mental places invested by a subject so as to form a point of view (Reinart 1995: 203-4).

As mentioned above, a problem given priority in discourse analysis is that of identifying the criteria for defining the units of analysis. It is maintained that there is no generally valid solution to this problem given that the type of discourses analysed and the aims of the research have to be taken into account. In our case, in running both programmes we singled out as units of analysis the *propositions de forme simple* in *Analyse Propositionnelle du Discours* (Ghiglione & Blanchet 1991), which correspond to the 'declarative or indicative sentences' as defined by Stoic logic<sup>4</sup>. These sentences – which correspond to the elementary contextual units (ECU) in Alceste – may already have a full meaning in themselves or the meaning (referable to the categories identified for the content analysis conducted using NUDIST) can be given or completed from the set of two or more connected sentences. The first step is to decompose (*découpage*) the 'surface textuelle' of the text (*ibid*) into these basic units of analysis or 'propositions de forme simple'. Then, we can combine two or more inter-connected sentences into sets or broader units which have a full meaning in themselves. These sets are comparable to what Ghiglione and his collaborators call *propositions de forme composée*. It is above all these broader units that allow us to highlight the processes of attribution, arguments, figures of speech, commonplaces and so on: in short, the universe of discourse that constitutes the 're-constructions' of social representations or, more generally, of common sense<sup>5</sup>.

After identifying the units of analysis and applying the chosen programmes, the final stage involves interpretation: the researcher is 'free' to discuss his hypotheses. However, this freedom is legitimate and the interpretation of the results and the entire research will be public and transparent to the extent to which the criteria for analysis are made clear, starting from those that

explain the identification of the units of analysis and the choice of programme.

Overall, therefore, the two computer programmes differ in their logic of analysis and the ways in which they work. Analysis made using Alceste is word-driven and bases its inferential processes on the distribution of frequencies. By contrast, analysis undertaken with NUD\*IST is theory-driven and not frequency-based, and is founded on the presence or absence of attributes taken into consideration according to the theoretical framework and research hypotheses. In this second case, then, each step in the analysis is mediated through interpretation and theoretical elaboration, whereas in the case of Alceste interpretation focuses on the output generated by the programme through applying statistical techniques.

It is worthwhile to point out that the difference between the two computer programmes does not, in our view, correspond to a clear-cut distinction between qualitative and quantitative. Although it is more strictly speaking qualitative, NUD\*IST also gives interesting results in quantitative terms; for example, the co-occurrences of categories and their weight, as is mentioned in Note 2. In turn, though its results are really quantitative and formalised, Alceste brings out the discursive units of analysis (ECUs) that permit a guided and controlled qualitative analysis. Indeed, this property – namely, not being confined to an analysis of the correspondences between words – is in our opinion its most important value. Also because of this aspect, we hold that this programme cannot be applied automatically but requires in its turn a careful preliminary 'reading' of the text. For this reason, it was decided to apply NUD\*IST first. This by no means implies that the Alceste analysis was consequent upon the codes and categories emerging from the NUD\*IST analysis. In fact, comparison of the two methods is only meaningful if coherence or consonance emerges as a result and is not presupposed or predetermined.

4 The stoics defined the sentence (*axioma*) as that which can be true or false and distinguished it from the question, command, oath, apostrophe and dubitative expression.

5 In what follows, some examples are given of these basic or composite units of analysis.

In presenting the results, the order in which the analysis was carried out ('procedure of discovery' or heuristic procedure) is reversed and we have preferred to start from the picture furnished by Alceste – its synoptic character provides an overall view – and then, subsequently, explain the most significant elements emerging from NUD-<sup>\*</sup>IST, which makes a more analytical qualitative exploration of several aspects possible. Finally, we maintain that comparison of the analyses based on two distinct programmes referring to different methodologies is important for clarifying the formulated hypotheses.

### Analysis of lexical correspondences using the Alceste programme

Classes 1 and 3, connected as shown in Figure 1, delineate the framework of the Di Bella affair. The first (Class 1) relates to the conflict between the reified universe of science, with its 'certainties' and official medicine, with its 'guarantees' and the consensual universe of the alternative cure with at times the 'illusion of miracles' to which it may give rise. The second (Class 3) to the 'setting' and the 'actors' in the Di Bella affair and to the likewise conflictual, Italian political situation in which this affair was inserted. More typical of *Panorama*, Class 2 is centred on the concrete material nature of the illness and the resulting 'pain', particularly the devastating consequences of 'conventional treatments', first and foremost chemotherapy. It is for this reason that it is quite different from the elements and problems that mark out the general framework of reference in the classes 1 and 3. Linked to Class 2 is Class 5, also typical of *Panorama*, which is centred on the 'hopes' placed in alternative treatments. These are two distinct discourses even though the one (the reality of the existing situation and the pain it causes) relates to the other (the hope and expectation of something new) and they are both grounded in existential realities far removed from any theorisation: pain, fear and hope. Lastly, there are Classes 4 and 6, which complete the overall picture with respect to, in particular, the

political conflict delineated by Class 3 and highlight the different positions of the two weeklies.

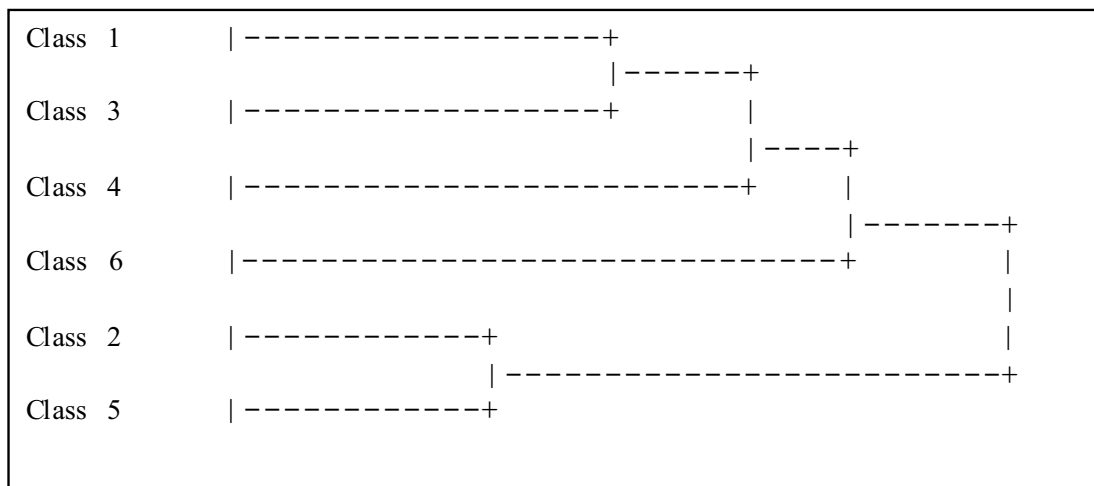
Characteristic of *Panorama*, which is professedly more interested in the material problems of the ill, Class 4 focuses on the problem of the 'cost and difficulty of obtaining somatostatin', the essential ingredient in Di Bella's cure, and on the speculation that has been unleashed and the unreliability of those selling the drug. Class 6, in contrast, is characteristic of *L'Espresso*, which pays more attention to the consequences and the more political aspects of the case. This class is entirely centred on the 'political manoeuvring' of Di Bella's supporters with their right-wing connections.

We will dwell on the analysis of the Classes 1 and 3, starting with Class 3 since it provides a general view of the Italian situation; namely that 'ecological context' which, according to the general hypothesis formulated, allows us to explain the 'Di Bella affair' more precisely by placing it in context. For each class, the most characteristic words (since their presence is significantly high in the chi-square test) are shown in Table 1. Then, a *qualitative* analysis of some of the most meaningful ECU or set of ECU (our units of analysis) is presented in Table 2.

### Class 3 'The setting and the actors'

Common to both weeklies, class 3 in Table 1 delineates the setting – *Italy, the nation* – and the main actors in the Di Bella affair: on one side the people and, on the other, politicians and as a third party magistrates, whose intervention complicated the relation between the first two even further. Here emerges the commonplace, also prompted by a book by the then premier, Massimo D'Alema, that Italy is abnormal:

A country where health policy decisions are made under pressure from public protest and fax messages is not – to use one of D'Alema's favourite expressions – 'a normal country' (*L'Espresso*, 22 January 1998).



**FIGURE 1: DENDOGRAMME OF THE CLASSES GENERATED BY DESCENDING HIERARCHICAL CLASSIFICATION**

- Class 1 - The certainties of science and the illusion of miracles
- Class 3 - The setting and the actors
- Class 4 - The cost of Di Bella's cure
- Class 6 - Political manoeuvring
- Class 2 - Pain
- Class 5 - Hope

The classes are calculated using a descending hierarchical classification algorithm constructed by combining different techniques, including in particular factorial analysis of correspondences. (Reinart 1986, 1990). The result is a hierarchy of classes, which is represented in a dendogramme.

The relations between the actors within the Italian setting are considered to be inadequate for a 'normal' country. In conformity with what is their strongest and most widespread image, politicians are 'far from the problems of ordinary citizens'; in other words, they are shut up inside the reified universe of their offices and bureaucratic routines – and this is true despite their being on the Left just like the ministers of the then government. As now frequently happens in

**TABLE 1: VOCABULARY OF CLASS 3: THE SETTING AND THE ACTORS**

<b>The setting</b>	<b>N°</b>	<b>Public opinion</b>	<b>N°</b>
Country (Italy)	22	People	20
Normal	6	Students	3
<b>Politicians and politics</b>		Fax	5
Politics	42		
Government	14	<b>The magistracy</b>	
Ulivo (The centre-left government coalition)	13	judge + magistrate	15
Left wing	12	Madaro (a magistrate)	15
Right wing	12	Sentence	12
D'Alema	8	Court	6
Parliament	6	Di Pietro (a famous 'Bribesville' investigating magistrate)	5
PDS (the main party of the Left)	4	To judge	5
		Investigation	4



‘this abnormal country’, the vacuum left by the politicians was filled by the magistrates who thereby took on role that is not theirs.

**Class 1 ‘The certainties of science and the illusion of miracles’**

In Table 2, Class 1, which characterises *L’Espresso*, contrasts the ‘seriousness’, ‘guarantees’ and ‘certainties’ of ‘scientific experimentation’, of ‘science’ and its ‘method’ with the ‘illusions’ and ‘miracle-mongering’ of Di Bella’s and other alternative therapies. Di Bella’s way of thinking is presented as being far removed from the scientific criteria of evaluation:

Everyone wants to try and verify his results, to be able to quantify and evaluate them publicly.//But he isn’t interested and seems to say: what do you want from me? Let me treat my desperate patients my way.<sup>6</sup>

(*L’Espresso*, 8 January 1998)

The whole analysis depicts Di Bella and his therapy as the symbol of an old, almost Romantic, conception of medicine grounded in the ‘relationship between the individual doctor and the sick individual’. As the following quotation reveals, this conceptualisation would not in itself be mistaken except for the fact that it leads to rejection of the ‘collegiality’ required by modern

science, including that of the commissions whose task it is to follow experimental protocols in their evaluation of a drug’s effectiveness:

[Di Bella – Ed.] refuses any kind of collegiality because for him science is the individual doctor’s work with the sick individual.//If this were not so, he would not say things such as: if I use retinoid acid because I hold it to be useful under those [particular – Ed.] conditions, I don’t have to submit it to any commission; [my – Ed.] science tells me that it’s effective.

(*L’Espresso*, 21 May 1998)

In the conflict between the certainties of the scientific method and the illusions of Di Bella’s therapy, ‘public opinion’ is presented as a protagonist. Public opinion is the subject *par excellence* of common sense (consensual universe) to which the emergence of the illusions and even the affair itself is ascribed. This is because public opinion is characterised by emotivity and irrationality and therefore structurally opposed to science and its methods:

In questions where hypotheses, proofs and counter-proofs unfold slowly, public opinion is not always a reliable authority as what it thinks is often formulated too hastily.

(*L’Espresso*, 29 January 1998)

**TABLE 2: VOCABULARY OF CLASS 1: ‘THE CERTAINTIES OF SCIENCE AND THE ILLUSION OF MIRACLES’**

Scientific Methodology	N°	Public Opinion	N°
To experiment + experimentation	99	Public opinion	70
Science + scientific	83	<b>Di Bella and his therapy</b>	
Method	64	Illusion	10
Certainty + undoubted	42	False	10
Guarantee	16	Miraculous	8
To examine	16	Absurd	5
Truth	12	<b>Background</b>	
Serious	15	Medicine	149
Statistical	8	Therapy	94

<sup>6</sup> // separates the single ECU (ie basic units of analysis or *propositions de forme simple*).

On the other hand, an aspect emerges that is confirmed by the analysis carried out using NUD\*IST: public opinion is presented as the bearer of legitimate demands in that it acts as the voice of the sick, of their family relations and, more generally, of the imagination stirred by the illness.

### Content analysis using NUD\*IST

As explained in the section on methodology, the NUD\*IST programme was used to apply a grid of categories, defined according to our hypotheses, to the whole corpus. The grid is composed of a total of seven categories and 23 sub-categories, organised into two thematic groups:

- A. The actors and the setting
  - A1. Direct protagonists in the Di Bella case (A1.1 Di Bella, A1.2 his entourage, A1.3 doctors using his method and pharmacists 'close' to him);
  - A2. Representatives of the reified universes (A2.1 the Ministry for Health and its Minister, A2.2 politicians, A2.3 magistrates, A2.4 scientists, A2.5 doctors, A2.6 representatives of the pharmaceutical industry);
  - A3. Mediators in the conflict (representatives of the media);
  - A4. Representatives of the consensual universe (A4.1 ordinary people, A4.2 public opinion, A4.3 the Italian people, A4.4 the sick and their families, A4.5 the activists in the pro Di Bella movement).
- B. Themes and questions
  - B1. The consensual universe (B1.1 common sense; B1.2 conventional wisdom with respect to problems relating to health and sickness; B1.3 the way public opinion, the Italian people, the sick, and supporters of Di Bella's cure feel, think and act; B1.4 alternative medicine);
  - B2. The mass media (their role as a linking element between the consensual and the reified universes)
  - B3. The reified universes (B3.1 science and its epistemic-experimental criteria, B3.2

official medical practice towards illness and patients, B3.3 the economic interests behind the pharmaceutical industry, B3.4 the rules of politics, B3.5 the way magistrates operate).

The categories used do not have an evaluative character; nonetheless the analysis was carried out by two independent coders. In order to increase the validity of the coding processes, the two coders compared the results from 15% of the sample and discussed the problems that arose. Among other things, this made it possible to eliminate the category of 'public opinion' since, as often happens in content analysis, it ended up being indistinguishable from 'the Italian people' and its synonyms. After coding, a comparison of the respective results enabled elimination of the ambiguous units, that is those not attributed to the same category, amounting to about 20% of the total sample. The internal validity of the categories used for the analysis with NUD\*IST was confirmed also in the subsequent analysis made using Alceste given that the contents and the meaning of the classes identified by Alceste essentially correspond to the categories in NUD\*IST.

Here the results are analysed for some of the categories of major interest: official medicine and science as representative of the reified universe and public opinion as relating to the consensual universe.

#### ***Official medicine (B3.2) and its representatives (A2.5)***

There emerge elements in the representation of medicine and doctors that are common to both weeklies but expressed differently. In *L'Espresso* two themes are linked: on one side that of the specialistic and technological nature of modern medicine and on the other, as a consequence of this process, the inability of doctors to establish a satisfactory relationship with their patients:

Medical practice needs rigid standards, protocols, that is therapy models necessarily based on statistics and prior experience. This natu-

rally leads doctors to be more detached and often ends with them no longer seeing the subject in front of them but only the object under examination.

(*L'Espresso*, 29 January 1998)

The way to overcome the limitations of a medical practice viewed as 'reductionist' is consistently equated with the necessity for a holistic approach, in which the patient's psychological needs are also taken into consideration:

So that science can become medicine, it is necessary for the acquired knowledge of science and technology to be balanced by that of anthropology... This means that doctors need to know the individual, somatic, familial, communitarian, working, environmental and social reality of a patient.

(*L'Espresso*, 29 January 1998)

Through a process of anchorage typical of social representations, this medicine 'with a human face' refers back to a mythicised nineteenth-century medicine, which the figure of Di Bella brings to mind:

Medicine today is no longer the humane medicine in the early years of the last century when the benevolent general practitioner was a sort of magician with some extra knowhow...he either cured his patients or he didn't, but he was close to them.

(*L'Espresso*, 22 January 1998)

In *Panorama*, criticism of medicine is aimed on one side at the failings in the health service's facilities and treatment and, on the other, at the power structure and economic interests that would be threatened if Di Bella's method were adopted (*Panorama*, 15 January 1998).

### **Science and its universal rules (B3.1)**

More than with any other alternative therapy, the Di Bella case set off a dispute that extended from

official medicine to science and its procedures. This led both weeklies to express clear representations of science, which showed no significant differences between them. This representation is grounded in the concept of 'rule'. It is pointed out that the rules 'imposed by the scientific community' are 'codified' by national and international institutions. Their validity is 'beyond doubt' in that it is based on both a spatial criterion – 'planetary', 'universal', 'international' – and a temporal criterion – they have 'always been followed' and underlie the progress made in medicine over the last 'hundred years':

Why has experimentation following rules universally accepted by the scientific community never been carried in order to verify the effectiveness of Di Bella's cure?

(*Panorama*, 29 December 1997)

The undisputed universality and necessity attributed to these rules entails the use of categorical language:

The oncologist at San Raffaele Hospital is intransigent: 'If it doesn't get through all the stages of clinical research, Di Bella's cure will continue to have the same status as the waters at Lourdes'.

(*Panorama*, 29 December 1997)

Much stress is placed on the appeal to the principle of authority; for example that of the Nobel prize-winners:

Rita Levi Montalcini, who is no novice, wants a very rigorous experimentation carried out with great expertise.//And another Nobel prize-winner, Renato Dulbecco, warns that results obtained in single cases do not count.

(*L'Espresso*, 22 January 1998)

Apart from being grounded on the principle of authority and the assumption that they are universal and necessary, these rules of science are

nonetheless justified by making explicit in scientific language some of the criteria for experimentation. Here the articles use scientific terms and expressions including 'experimentation in vitro', 'formulate hypotheses', 'comparative studies with placebo' and 'falsify'.

At the same time, bearing out what emerged from Alceste, the public response and behaviours are poles apart from the manner in which science proceeds. This leads to the discourse on the relation between science and democracy:

Science is not democratic; at least not in the political sense of the word.//In science the majority view has no value.//Galileo might have had everyone against him, but he was right. The crowd could change its mind, besiege Di Bella's house and lead him to the stake; but this would not prove that his cure is wrong.

(*L'Espresso*, 29 January 1998)

### ***People, the Italian people, the crowd (A4.1, A4.3)***

Though essentially playing the same role, the protagonist of the consensual universe assumes different names: 'public opinion', 'people', 'the crowd', 'the mob', 'the masses'. More rarely used is the term 'citizens' which implies instead a different role.

This actor is mainly described as being dominated by irrationality, ready to 'have faith' in what it needs to believe in ('This is what public opinion wants to hear': *L'Espresso*, 22 January 1998). In particular, when it is called the 'crowd', 'mob' or 'masses', it is emotion that predominates: 'by the people' is one of the most frequent expressions in both weeklies. The nineteenth-century image of the 'mob storming the bakeries', prone to changes of mood and attitude, is explicitly evoked, and here too a process of anchorage emerges:

We are faced with a kind of collective suggestion, a typical mental contagion where the masses are concerned.//And if you try to oppose it, to open their eyes to this big dream

or, rather, this big illusion, the people destroy you because they totally refuse to be brought back to reality.//These are the same people that sometimes lynch innocent individuals or break into and set fire to shops.

(*L'Espresso*, 22 January 1998)

The use of expressions such as 'collective suggestion' and 'mental contagion' make a clear, though perhaps unintentional, reference to the late nineteenth-century psychology of the crowd [eg '*Psychologie des foules*', Le Bon (1895)]. If people are irrational, it follows that – as already emerged from the Alceste analysis – they are intrinsically opposed to science and would not believe in the results of experimentation with Di Bella's cure. This is underlined by the articles in *L'Espresso* that talk of a 'medicine of the mob' set against an 'official medicine'.

This emotive and unreflecting public opinion is conditioned and manipulated by various actors who 'unleash the mob' for their own ends (*L'Espresso*, 5 March January 1998): above all television, Di Bella's followers, magistrates seeking the limelight (*Panorama*) and political parties, especially on the Right (*L'Espresso*). This does not stop the very same public opinion – to a predominant extent for *Panorama* – from adopting an active role and 'influencing', 'conditioning', 'imposing', 'frightening' and 'provoking' the intervention of certain magistrates or supporting their actions with street demonstrations or 'an avalanche of faxes'. In this case public opinion – mainly for *Panorama* – expresses 'what the heart desires' and 'the real needs of people' (*Panorama* 19 February 1998) and is opposed to the state apparatus (the Ministry and its commissions), to the 'arrogance' and 'inhumanity' of official medicine.

According to some minority views, the actors who are against the various manifestations of the reified become 'citizens', who are or can be 'aware':

Certainly, the exercise of full therapeutic freedom, that is everyone having the option to

choose even therapies that have not yet been scientifically validated, could still make the citizen a guinea pig, though a conscious one.//And the difference is not insignificant: it's what distinguishes the citizen from the subject.

*(Panorama, 26 February 1998)*

## DISCUSSION

The essential aim of our work is an attempt to integrate quantitative and qualitative methodologies while pointing out certain problems such as, first and foremost, the need to identify the units of analysis. This is related to an old problem in psychology, which is still topical even though it is sometimes forgotten. It was posed by, among others, Kurt Lewin in one of his writings on methodology (Lewin 1940). After reminding us that the very formalisation of mathematics is first of all a qualitative process, with reference to Ernst Cassirer's epistemology, he remarks that qualitative and quantitative methods are not antithetical but of necessity complementary. Moreover, this complementarity, which helped physics to develop, should have been taken up by psychology. In the same writings, in connection with this question, Lewin emphasised the need to identify and make clear the units of analysis. Here we have tried to tackle these questions by comparing two different programmes of analysis with respect to a concrete research theme.

The comparative application of the two computer-based analytical methodologies has allowed us first of all to compare the two programmes used, bringing out the main advantages and disadvantages though, most importantly, demonstrating the utility of their integrated use.

At the practical operational level, the Alceste analysis shows, from a general perspective, two main advantages. The first is the rapid processing of data even on broad corpuses since, once the parameters for the analysis have been defined, the production of the report with its main results requires only a few hours. The second is connected with the fact that only a single researcher is

needed to complete the analysis as the process is almost entirely automatic. At the level of validity, moreover, it is the very automatic nature of the analysis that makes it possible to avoid the issue of reliability that arises with human coding because the coding is in itself a subjective processing of the information (Schonhardt-Bailey 2005). Finally, Alceste offers a way to surmount the difficulties of traditional content analysis, while at the same time producing results that are entirely consistent with it (Allum 1998). It must be said, however, that the contribution made by the programme is in itself mostly descriptive and is not as deep-reaching as qualitative analysis, though it does allow us to gain a general idea of the thematic network in the discourse analysed (Dargentas & Le Roux 2005). In fact, as the software is insensitive to meaning and context, this may result in missed nuances (Brugidou 2003). These aspects, or limitations, together with the ease of applying and repeating the program mean that that for programs such as Alceste and others in the same program family, that there is the risk of introducing a kind of research that is not very reflective of actuality. In the attempt to avoid such risk and remedy the programme's limitations, before applying it, a careful reading of the texts and analysis using NUD\*IST were undertaken. But, most of all, importance was attached to the qualitative aspects of Alceste.

As for the analysis of the predominantly qualitative contents undertaken using NUD\*IST, we can say that the data codifying process is undoubtedly slower and more laborious. It needs to be carried out by more than one researcher so as to verify that the data are coded in the correct categories. In this case, the content analysis is configured as a social construction given that reliability is defined as agreement among interpreters (Bauer 2000). Of course, there is the risk that the thematic categories predefined by the researchers are unable to take into account the complexity and polysemy of the textual corpus. Apart from the ability of the researchers and the solidity of the theoretical framework they refer to, it is by making a compar-

ison with a different type of programme, such as *Alceste*, that this risk can be avoided or reduced. Nevertheless, unlike with *Alceste*, the analysis is certainly more deep and at the same time more specifically guided by the research objectives.

On the whole, it seems to us that the two methods of analysis integrate one another successfully, first of all due to their complementarity in the sense that the limitations of one are compensated by the advantages of using the other. Secondly, by applying them to the same corpus, we have a 'methodological triangulation' whose usefulness is pointed out by many (Tashakkori & Teddlie 1998).

In the case of the research presented here, the qualitative analysis based on NUD\*IST has made possible a theoretically guided and thoroughgoing interpretation of the data, from which emerged, in particular, a representation of science as a closed universe and a critique of dehumanised medicine. This apparently corroborates our interpretation of the Di Bella case as an episode that catalysed the conflict between the reified universe of science and the consensual universe of patients, their families and wider public opinion.

By allowing the main contents in the representation carried by the mass media and the role played by the two magazines in constructing these contents to be identified, *Alceste* made it possible to point out in particular the role of the historical-political context in constructing this case, as well as the different stances towards it adopted by the two weeklies in line with their political orientation and editorial strategies. For example, though it seems at times to support an anti-government manipulation of the case, *Panorama* is first and foremost attentive to the real needs of the sick, the fears of those faced with illness, the illusions that may be created by any alternative therapy lacking scientific validation. For its part, *L'Espresso* addresses its criticisms to the government, which, coming from the same part of the political spectrum, are particularly well-aimed and effective, as immediately highlighted by the analysis of Class 3 in *Alceste*.

There emerges with marked clarity from both analyses the more usual and conspicuous aspects

of the consensual or common sense. Among these are irrationality and emotivity on the part of public opinion. Thus re-emerges, in a typical process of anchorage, the nineteenth-century crowd that storms the bakeries and is prone to sudden swings in mood, a phenomenon that is interpreted according to the old crowd psychology of Gustave Le Bon (1895). However, among all this and the most entrenched commonplaces there clearly appears something different and more important. Both weeklies do not confine themselves to representing the differences, conflicts and incommunicability between the consensual and the reified (public opinion that follows criteria intrinsically different from those of science). They also give voice to the needs of the sick and of all those ordinary people who find themselves facing or fear having to face cancer, a prototypical disease that arouses dread and anxiety.

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