Scientific Knowledge Circulation Discourses

Ana-Maria FLORESCU
École doctorale, Université de Suceava

Résumé: Notre étude est une approche du discours académique scientifique et de ses voies de transmission, plus exactement de cette trajectoire-là causée par l'extension des canaux usuels de communication de l'information scienti-fique, provoquée par l'intrusion de plus en plus forte des informations à caractère scientifique spécialisées dans la vie quotidienne, par les média. Ainsi, dans «la culture scientifique populaire» dans «les connaisances scientifiques générales», peut-on parler d'une diversité de genres discursifs, parce que leurs voies de transmission, plus ou moins que la didactique, sont elles aussi nombreuses. Dans le même cadre, nous mentionnons l'aspect didactique du discours «ordinaire», manifesté sous plusieures formes, fait déterminé surtout par le degré de réception des discours, qui a pour conséquence la production des effets sur les formes discursives et la modification de la typologie de cette catégorie discursive. Plus qu'une dimension scientifique, dans les discours médiatiques et dans les conversations ordinaires, l'actualisation du discours scientifique et son infiltration dans des discours de plus en plus variés, sont devenues une caractéristique constante de la société contemporaine.

Mots-clé: connaissances scientifiques, circulation, transmission, diffusion, dissémination discours scientifique, discours didactique, discours social, discours média.

Scientific academic discourse has lost much of its original form since scientific knowledge is no longer transmitted only through a one-way channel of communication. This is evident in the extension of the usual communication channels of scientific

discourses brought about by the diffusion of a popular scientific culture derived, in part, from social problems in which science and technology are deeply involved. Thus, we may speak about the distinction between discursive forms specific to scientific communities and forms adopted by scientific knowledge in general everyday discourse.

The didactic discourse represents the second stage of scientific knowledge transmission (according to Moirand[1], 1992), transmission based on the assumption that knowledge spreads out in a linear way from source discourses to didactic discourses and then via the media to the general public. The concept of *didactic transmission* may categorize the didactic discourse as follows: a discourse which displays specific markers such as the form of the definitions, explanations, examples, etc.; a discourse which aims to teach and demonstrate – not to make people believe; a discourse produced "in a communicative situation in which the knowledge of one participant is superior to that of the other – knowledge which he or she must, or wishes to, share".

The channels of knowledge transmission to non-specialists (less homogenous than those of internal use) appeal to varied discursive forms such as: school and university textbooks, televised documentaries, broadcast reports, 'scientific literature' for young people, journals focusing on general or specialized transmission of scientific knowledge (computer science, archeology, economics, etc.), magazines or journals for the general reader (*Science et vie*) or for more interested ones *(La Recherche)*; encyclopaedias, etc.

Taking into consideration this diversity of channels of didactic knowledge transmission some commentators mentioned a "secondary, indirect and sometimes explicit didacticity" in the case of discourses whose primary aim is not didactic transmission, originating in an "intended didacticity, be it real, simulated or feigned"[2]. There is a certain category of so-called "ordinary"

[1] Moirand, S, «Un lieu d'inscription de la didacticité: Les catastrophes naturelles dans la presse quotidienne», *Les Carnets du CEDISCOR*, 1.

[2] *Ibidem.*

discourses – which can be negatively defined as neither scientific nor belonging to openly didactic genres – which exhibit this characteristic of secondary didacticity.

The above-mentioned category of different forms of discursive genres constituting the external output of scientific communities is almost impossible to analyse in terms of their transmission functions, therefore of their relationship with the discourse source; we can, however, analyse it in terms of its readership, and, for some of these genres, of the status of the texts as commodities – texts meant for consumption, which resort to relevant linguistic means. For instance, the non-serious tone adopted in some of the articles in the science section of a daily newspaper such as *Le Monde*, the absence of structuring, narrativisation, use of general or even trivial vocabulary, of verbs introducing quotations of a very subjective non-scientific nature: *to deplore, to marvel at*, etc. – all these can be explained by the concern to attract readers, the aspect of the reception of discourses and the non-discursive conditions of their production becoming two inseparable *sine qua non* elements. Or, it is obvious that a scientist can write articles with a didactic aim in the non-specialised press which scientists themselves may read, and the discourse produced by the media or the general public may influence the scientific discourse to a greater or lesser degree: "looping effects"(*effets de bouclage*) are possible: discourses produced by the media or the general public (*unofficial forum*) may have some effect upon "esoteric" scientific discourses (*constituent forum*, Collins and Pinch, 1991, *in* Beacco *et al.*: *Science in media and social discourse, in Discourse Studies*, 2002, SAGE Publications, London, Thousand Oaks, CA and New Delhi, Vol. 4(3): 277-300).

It is more and more evident that influences circulate both ways between these discursive genres; science is present more and more within many ordinary discourses, whether in the media or not. One can often read in the press articles on economics, politics, social issues: a discovery, a scientific congress, debates on pollution, nuclear energy, genetics and its relation to the quality of food, public health, an earthquake or volcanic eruption

– events which require scientific explanations. This supports the idea that the dissemination of science takes multiple varied forms and the diffuse linguistic presence of science is not apparent only in the usual channels of circulation, but also tends to saturate informative media discourses, being detected in ordinary discourses of the general public, too. We may therefore speak about "scientific diffusion" as a form of knowledge circulation which is no longer systematically ascribable to separate discursive genres, but which also adopts a diffuse intertextual form.

The Bakhtinian "dialogical principle" has long been active in discourse analysis. It states that a discourse is not and should not be considered in isolation, but as part of a "dialogue with the previous discourses held about the same subject, as well as with future discourses the reactions of which it anticipates and foresees"[3]. Almost whatever corpus we may choose, no matter how "scientific" or "ordinary", it is difficult to miss the existence of an intertext, of interdiscursive links which confer certain coherence on this intertext, contributing to the understanding of the information, through the existence of certain words, syntactic constructions, which reactivate in the reader's memory previously held discourses.

This principle of intertextuality "as inevitable reading"[4] is obvious in the fact that the scientific, technical, media, social, ordinary discourses are interwoven in that part of contemporary media which proves to be a complex discursive space, although this space was not initially intended to the dissemination of science.

CEDISCOR, the research centre of the Sorbonne Nouvelle University, founded in 1989 by Sophie Moirand, Professor at the same university, is mainly preoccupied with the analysis of all forms of various discursive genres which convey knowledge. It states the existence of new linguistic forms (change of the discursive role of the journalist, which appears as polymorphous,

[3] Bakhtine, M., 1981, *Le principe dialogique*, Seuil, Paris.

[4] Riffaterre, M., 2002, "Textul literar nu e niciodată desuet", *România literară*, nr. 6.

changing diachronically and synchronically according to the domains concerned (Moirand: 2000); the issue of a new discursive agent – the general public; the notion of "inferred enunciation" referring to the new form of interaction between the non-specialist web-surfers, "who feel authorized to defend their opinions even against specialists" (Beacco *et al.*: 2002) in general media discourse, hypothesis studied by means of texts taken from the media.

In what follows, we will display an example from the French written media meant to illustrate our beliefs about new ways of science diffusion:

> *Corn, soya or potatoes, a genetically modified plant is a plant like any other, except that one or many foreign genes were introduced into its genome conferring a particular agronomic characteristic on it (resistance to weed killers, production of insecticide toxins, etc.).* **(Le Monde**, 28 February 1998)

> *What is a **GMO?***
> *A transgenic plant is a normal plant to which was added a foreign gene, in a laboratory, from another plant or from a bacteria, a virus, an animal or even from a human being. The plant manipulated in this way then acquires a new property that definitively belongs to its genome and will thus be transmitted from generation to generation.* **(Le Point**, 13 June 1998)

The journalists no longer play the role of mediators between the scientists and the public. They prefer to insert words borrowed from the scientific discourse, rather than adhering to their own specific role – that of popularising science; they use information from multiple sources (not only from the discourse of the scientific community), mostly because they oscillate between information and opinion, "in a state of what seems to be a permanent discursive insecurity"(Beacco *et al.*).

The general public has also changed its role, the passive recipient turned into an active agent in media discourses through the technical-scientific decisions he was implied in, although symbolically or temporarily. Some would say that the general public has an official role in media discourses, being a "new discursive agent, with a specific voice in the polyphonic concert of discourse" (Reboul-Toure, 2000).

As far as the general public debate on the internet is concerned, the special enunciative context, characterized by the absence of any institutional moderator, determines a new form of legitimacy with a unique character due to the electronic mediation between numerous unknown individuals. The scripto-visual materiality of their discourses, the transmission speed. made Cusin-Berche take into account a form of enunciation which does not correspond to the one established by print media:

> "...we resort to the notion of inferred enunciation in order to avoid a negative designation: this is neither a different enunciation, the interlocutors act as if this were not the case, their discourse denying the temporal and spatial distance between enunciation and reception (hence the allusion to inference), nor a direct enunciation as there is phy-sical distance".

We mentioned above the "inevitable" presence of an intertext in the complex discursive space of the contemporary media, and we shall proceed by analysing this issue in the following article:

> *With regard to GMOs, I knew it was a new technology. At first, I had nothing against them but I had some doubts. Today, I still have nothing against them but I'm really worried", declares Gilles Rozet, 38, a salesman in Lyon. Finding this public forum "great", he feels invested with "a big responsibility". But he fears that we are already "bound hand and foot to the*

big agricultural multinational firms". **(Le Monde**, 23 June 1998)

The general public has given its opinion [...] Even if the result is a little confused, it contains explosive propositions. When they write for example that "it seems_indispensable to develop the research linked to the ecological risk before developing the widespread use of GMOs and to wait for the conclusions of this research prior to intensive farming", they innocently put their feet right in it. **(Liberation,** 23 June 1998).

This article presents a real example of the polyphonic (or plurilogal) characteristics of the intertext on which they are based. More precisely, this text of general information is made up of words in brackets, fragments coming from different sources (speech is reported from various speakers and, also, often quoted); actually, it is only the use of identical discursive objects that gives inner coherence to these articles. At the same time, this article is, to a certain extent, an example of "traditional" discourse. There is a reported discourse, but without being introduced by any indication. The journalist makes his or her voice less heard in favour of that of the speaker, and this procedure creates an effect of reality (given by the plurilogal mode of presence of the intertext) – that validates the predication and corresponds to the general expectation from the media discourse: the requirement of truth. These are the circumstances under which Beacco *et al.* speak about the "disintegration" of the intertext; we would rather name this phenomenon "dissipation", keeping in mind the idea of persistence and M. Riffaterre's notion of intertextuality, which is the condensed expression of all-long discussed textual relations. The same circumstances are a very good example of what Maingueneau calls "particitation" (*Langages*, 156) although he didn't explicitly create a special framework for the use of this notion, we think it is representative for our point of view concerning the "plurilogal" scientific discourse. Readers of

contemporary scientific discourse ("particitateurs", actually) make more use than ever of the intertext as "inevitable reading".

The appeal to scientific discourses (and their interdiscourses) and their relationship with discourses of a very different nature has definitely become a characteristic of the contemporary knowledge society.

References

Bakhtine, M, 1981, **Le principe dialogique**, Seuil, Paris.

Beacco, J.-C., «Ecritures de la science dans les medias», *Les Carnets du CEDISCOR*, 6, pp.15-24.

Beacco, J.-C.; Claudel C., Doury M., Petit, G., Reboul-Toure, S., 2002, "Science in media and social discourse: new channels of communication, new linguistic forms", *Discourse Studies*, 4, pp. 277-300.

Charaudeau, P., Maingueneau, D., 2002, **Dictionnaire d'analyse du discours**, Seuil, Paris.

Detrie, C.; Siblot, P.; Verine, B., 2001, **Termes est concepts pour l'analyse du discours**, Honore Champion Editeur, Paris.

Dospinescu, V., 1998, **Semiotica si discurs didactic**, Editura Didactica si Pedagogica, Bucuresti.

Goffman, E., 1991, **Les cadres de l'experience**, Editions de Minuit, Paris.

Kerbrat-Orecchioni, C., 1995, **Les interactions verbales**, Armand Colin, Paris.

Maingueneau, D., «Le tour ethnolinguistique de l'analyse du discours», *Langages* 105, pp.114-25

Maingueneau, D., **L'analyse du discours,** Hachette Livre, Paris, 1991.

Maingueneau, D., «Hyperenonciatuer et «particitateur»», *Langages* 156, pp.111-127.

Moirand, S., «Un lieu d'inscription de la didacticite: Les catastrophes naturelles dans la presse quotidienne», *Les Carnets du CEDISCOR*, 1.

Ion Pop, "Textul literar nu e niciodată desuet", *Romania Literară*, 2002, no. 6.