

## **Saying and writing the flowing waters. What methods to analyze the discourse? Call for Papers for a special issue of *Géocarrefour***

The rivers entail oral and written discourses that the development projects, festivals or crises sustain and renew. These discourses reveal the public perceptions, uses, and management of the river. With similar methods, researchers from the Social Sciences analyze these sources to explore the practices and thinking/knowledge of experts, managers, stakeholders, users and residents. This special issue will provide an update on the complementary nature of methods to collect writings and talks, and to prepare, to analyze and to interpret a corpus. In particular, the crises and breaks provoke verbal productions that techniques known as content analysis and analysis of textual data (ATD) endeavour to explore (Collomb and Guerin-Pace, 1998).

### **Thematic issues**

#### *The discourse on the river: mirror or mould?*

The transcribed interviews and various writings serve as receptacles for common and scientific knowledge, but they are also likely to influence attitudes towards the river. These discourses spread pieces of information on public policies and social events. Newspapers have been proved suitable for the analysis of paroxysmal hydrological events (Allard, 2005), of land-use conflicts in terms of proximity in rural areas (Caron and Torre, 2006), or of environmental services (Vicard *et al.*, 2005). Some questions remain unsolved. To what extent may the "discourse on the river" be considered a material relevant to the analysis in social sciences? How its biases and partial features allow us to learn about a fluvial system? What attitudes (confidence, caution, distrust ...) should the researcher hold towards such a source?

#### *The plurality of discourses*

The discourse on flowing waters varies from one stakeholder to another depending on the values, interests, practices... As any multifunctional space, the river is a place of production, protection and recreation, but also a cause for concern. It is therefore important to describe the set of stakeholders involved in the process of managing the river, to present the elements of cognitive structure, and to assess how hydrological crises destabilize the social system. The discourse allows to apprehend how an event disturbs the functioning of riverine communities and to identify what kinds of tensions and conflicts arise near the river (Labeur, 2008).

#### *Spatial and temporal variations in the discourse on the river*

The diachronic analysis of the writings highlights the evolution of a system around the notions of rupture or trend. The time of river development through constructing waterways, hydroelectric facilities, chemical and nuclear activities, or protection works is followed by a renewed vision of aquatic environments. Nowadays a study of writings is a way to question the environmental awareness in the management devices: Is it progressive or related to more local events, such as the hazards that accelerate the regulatory process (eg. the flood of 2003 on the Rhône River)? The discourse may also vary in space according to local inheritance and issues. Can we identify environmental attitudes towards the river across the river continuum or should we consider finer spatial scales?

### **Methodological issues**

Fairclough (1995) defines the discourse as a form of social practice and analyses it in terms of three dimensions: the micro-analysis of texts (by describing their linguistic properties), the meso-analysis of the discursive practice (by interpreting the relationships between the

production, distribution and consumption processes and the texts) and the macro-analysis of social practice (by explaining how the discourse is constitutive of the cultural context and how it contributes to (re)produce it). Although it is not exclusive of the two others, the first entry, focusing on text, is highlighted here. Writings and transcripts of interviews are indeed at the heart of the work of social sciences. At the time of numeric data, technological innovations are such that the entire process of collect, treatment and interpretation of texts is experiencing profound changes. Not only the quantity of available material is growing in unprecedented proportions, but the permanent enrichment of the software package opens up exciting analyses. The discourses held on an environmental object such as rivers lend themselves particularly well to the implementation of techniques known as content analysis and analysis of textual data, in addition to methods more qualitative. The applications are particularly designed to enrich the knowledge and to question the complementary nature of content analysis and textual data analysis (TDA).

### *Content analysis*

The content analysis has emerged in the early twentieth century to categorize news content. Berelson (1952) defined it as "a research technique for the objective, systematic, and quantitative description of manifest content of communications" (p.18). Although this method may also be used in more exploratory approach of an existing corpus, the researcher is likely to make explicit assumptions to develop a grid of consistent and relevant categories. The strongest criticism specifically addresses this categorization, particularly when the analyst is required to identify semantic categories (that is to say themes) without objectively identifiable formal unity. The step of coding and counting of units of analysis comes then, and finally the interpretation (Bardin, 1977; Bouillaguet and Robert, 2007). Thus this technique allows the qualitative analysis of textual data in the form of quantitative data (Hayward and Osborne, 1973). If the categorization and coding of the texts derive from a qualitative process, the counting of these categories entails statistical analyses (Boholm, 2009). Although properly speaking the content analysis focuses on the manifest content, the discussion and interpretation of results lead to the latent content. Some variations in the manifest content are used to allow a researcher to make (statistical) inferences.

### *Textual data analysis*

In response to the system of categories defined *a priori* (and inherent in content analysis), textual data analysis was first sought to postpone any interpretation as late as possible (Lebart and Salem, 1988). The software now accompany the researcher throughout the work of reading, exploration, analysis and interpretation by offering diverse tools: manipulation of the corpus (development of a sub-corpus or a partition), production of alphabetical and hierarchical lexicons, creating sophisticated queries that result in concordances or indexes, analyses of descriptive statistics, calculation of specificities and co-occurrences, making lexical tables needed to multivariate analysis (correspondence analysis and hierarchical clustering), or graphical visualizations more and more persuasive. The latest products are breaking the traditional boundaries between qualitative and quantitative analyses and between content analysis and textual data analysis. They offer the possibility of various import formats that may encourage the operator to encode the text in advance or to collect metadata useful in the analysis, and allow the return to the text at any time. The texts of the corpus can be analyzed for themselves but also with regard to the characteristics of producers and consumers, which facilitates the testing of hypotheses concerning some spatial, temporal and socio-cultural variations in discourse.

### *Qualitative analyses*

In the 1970s, some scientists have refuted a form of positivism and decried surveys based on measurements and statistics. They have promoted a qualitative research able to recreate the real world experienced by the actors (Paille, 2006). This approach stands closer to the sources and avoids altering the text. It permits more easily the adjustments to initial assumptions. The originality of these methods may derive from a floating reading of the operator who looks for news and assume his subjectivity. These analyses are often based on an immediate relationship between the text and its interpretation.

### **Information for authors**

Authors can contact Yves-François Le Lay, yves-francois.le-lay @ ens-lyon.fr, coordinator of this special issue, to manifest their interest and ask any scientific question related to this call for papers. According to our new submission procedure, the articles will be deposited on our online interface before March 31, 2012 (<http://manuscripts.revues.org/index.php/geocarrefour>). The manuscripts may be sent in French or English. Their optimum size is of 40,000 characters, including spaces. The editor reserves the right to reject articles exceeding 60,000 characters. The manuscripts will meet the standards of the review described on the site (<http://geocarrefour.revues.org/index1017.html>). Articles will be evaluated by a double-blind peer review. Authors will receive notification of the decision (and remediation instructions) before June 30, 2012.

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