The collective making of temporal aspects in public debates

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The present paper deals with the processes by which actors involved in controversies produce competing representations of the temporal modalities of action and judgment, which play a crucial role in the dynamics of arguments. By examining, from a dual (both linguistic and sociological) perspective, the way argumentative processes and world events are connected, we investigate the functions and uses of argument schemes (e.g. causal reasoning, precedent, slippery slope argument …) and linguistic indicators supporting the stakes of temporality (such as "now", "fatally", "so inevitable," "possibly", "later"). Our contribution will be grounded on a computerized analysis of a large series of major controversies and polemics. The analysis will focus on significant situations, in which the relationships between past events and visions of the future constitute a major issue of the debate. Many examples will be taken from issues like nuclear power and radioactive waste, climate change, GMOs, pesticides, nanotechnologies, etc..

1. A crossed perspective on argumentative indicators in contemporary public controversies

The starting point of this paper is the observation that arguers engaged in the defence of their standpoint in a controversy devote a significant part of their discursive activity to the representation of the debate in which they take part. Such a representation does not contribute directly to the exchange of arguments. It nevertheless provides the addressee with an interpretative frame which may be called upon in order to reach the real, deep meaning of the arguments that are being presented. To take an example, in the controversy surrounding astrology, the representation of the debate as the struggle between reason and obscurantism, or between light and darkness, is one that is favoured by the astrology detractors. As far as the astrology supporters are concerned, they portray themselves as the Galileo of modern times, as being the victims of a dominant institution – the Inquisition in Galileo's case, the "official science" in the case of astrology supporters (Doury 1993).

When representing the controversy, the construction of a temporal frame may constitute an important strategic stake for the participants. This construction has a double nature: it is events-constrained in that it depends on the factual chronology of the debate; it is also fundamentally discursive, in that the participants make a choice among the available events which punctuate the controversy in order to select some of them which will be given a specific argumentative relevance. The combination of the order of events and the order of discourse, to borrow Foucault's terminology, makes the temporal dimension a privileged ground for the integration of sociological and argumentative insights into the study of controversies.

Such a discursive construction of the temporality of a controversy may serve as a basis for various argumentative moves, such as arguments from the precedent, arguments from consequences, and analogy arguments. It can be realised linguistically by a number of grammatical or lexical elements. In this paper we will adopt a lexical approach and focus on the French adverb "désormais", [from now on], in particular. We will show how "désormais" can be used to introduce a temporal breach in the chronology of a debate and how this temporal breach may be exploited in order to fulfil various argumentative purposes.

2. Ways of arguing: a pragmatic approach to argumentation

This part of our paper will briefly present some aspects of a new trend in contemporary French sociology, which tries to articulate a long-term analysis of public controversies, especially controversies involving science and technology issues, with an argumentative approach that takes a close look at the linguistic surface of discourse. In this approach, as mentioned in the introduction, temporality is a key topic. Taking seriously the way in which actors and arguments are evolving over time, through a long series of events, trials, debates or crisis, invites us to consider each argumentative or discursive activity in its context (*e.g.* occurring before or after an event or a public declaration) and to take a closer look at the ways in which arguers – commonly named actors, players or protagonists in sociology – manage the temporal aspects of the dispute or discussion: how do they invoke the past, the present and the future? How do they deal with emergency, delay, expectancy, anticipation or prophecy, and even more complex cases such as visions of the future already projected in the past? Let us take a short example:

(1) I *have alerted very early* about the problem of lack of technical control on off-shore platforms and *now* we are *in front of* the *biggest* oil slick *in American history*! How would we avoid this kind of catastrophe *in the future*? How to be sure that it will *never occur again*? (intervention by an inspector, in May 2010, in the course of the big controversy surrounding the management of the disaster caused by the explosion of Deepwater Horizon Platform - fragment extracted from a corpus built from American news sites)

By following and comparing a great number of public controversies or conflicts, on issues like asbestos, radioactivity, pesticides, endocrine disruptors, genetically modified organisms (GMOs), electro-magnetic fields, nanotechnologies, climate change, and many other issues, we have built a theoretical frame called "socio-ballistics", in order to analyse and explain the different trajectories that public issues follow – especially concerning risk and uncertainty, technological promises and prophecies of doom (Chateauraynaud 2009). Some main questions asked by this sociological approach are: on what context does an argument or a counter-argument emerge? What kind of trajectory does it take, and through which modifications? What does it mean for an argument or a set of arguments to resist to criticism? Are the arguments immanent of the actor networks or are they produced by the disputing process itself with a contextual relevance impossible to reproduce at a distance? How can an argument travel from small communities through different kinds of arenas and groups, winning in strength and in surface, and becoming, step by step, a watchword, a political tool, a rule of law or a common sense feature?

To understand the turning moments in the trajectories of arguments, we need to engage, in our conceptual and analytical toolbox, a good theory of argumentation able to study as close as possible the actors' practical and critical reasoning. It is with the aim of describing accurately the argumentative bifurcations – by which some arguments may get more legitimacy or strength in public opinion, or, on the contrary, can lose their relevance, or even definitively mark a clear opposition between camps (*nuclear can help fighting against climate change versus nuclear is too dangerous and toxic to help in anything concerning*

the environment!) – that specific investigations on temporal modalities, adverbs and indicators become necessary – even if this level of analysis is seldom taken into account in the toolbox of sociologists. While we have focused on "désormais" [from now on] in this paper, we acknowledge that the analysis of complex controversies obviously requires one to treat the whole range of temporal indications used by arguers. Consider this interesting example from the World Health Organization taken during the "avian flu" alarm process in 2006 (markers of temporality are in italics):

(2) The world is *now closer to* another influenza pandemic *than at any time since 1968*, when *the last of the previous century's three pandemics began.* While influenza pandemics are *infrequent events*, they are rightly feared as they spread *very rapidly* to affect all countries and cause abrupt and significant increases in morbidity. *Neither the timing nor the severity of the next pandemic can be predicted*, but severe pandemics *in the past* have resulted in tens of millions of deaths. *As the SARS experience* clearly demonstrated, *the first influenza pandemic of the 21st century could have* significant economic and social consequences that go well beyond the absolute impact on health. (WHO pandemic influenza draft protocol for rapid response and containment, 27 January 2006)

Before elaborating on the analysis of an adverb like "désormais", let us try to summarize a few properties linked to our "argumentative sociology scheme". A working definition of argumentation, particularly relevant for sociological analysis can be the following: argumentation is a discourse or a device which may be linked to an ongoing action and which is organized through a disputing process – or its anticipation – in order to defend a standpoint, an opinion or a thesis, and designed to resist against hard and relevant contention or criticism. In this sense, argumentation contains, at least as implicit requirement, one or many counter-argumentations.

On the basis of this soft definition, coherent with a pragmatic approach, we can study the different forms of evaluation of the arguments used by protagonists in controversies or debates such as: "This is not a good argument", "This is an argument ad hominem", "His reasoning lies on totally simplistic economic arguments ...", "it is not enough argument for ..." etc. (Doury 2004). Here is another example, showing how this level of analysis is helpful for finding key moments in large corpora of texts:

(3) For example, the US EPA uses this methodology for estimating the risk for different combustion processes (Teuschler & Hertzberg 1995). Employing this approach implies that reliable data for a mixture are at hand that *is judged to be sufficiently similar* in its chemical composition and *consequently* in its (eco) toxicological properties to the mixture of interest. *This situation is rare and hence argumentation by analogies is often not an option. Furthermore*, there is a considerable dynamic in the number of pollutants and their concentrations and *thus* a virtually unlimited number of different mixtures, which further hampers the application of this approach for the assessment of environmentally relevant mixtures. A means to gain further insight into the behaviour of a chemical mixture is based on physiolocally based pharmacokinetic / pharmakodynamic modelling (PBPK/PD) modelling. As the name implies, this methodology strives to model the uptake and distribution of chemicals in an organism. (Kortenkamp, *State of the Art Report on Mixture Toxicity, Final Report*, 22/12/2009)

The pragmatic strategy for argumentative analysis is to take seriously the techniques by which protagonists themselves perform the tasks of identifying, classifying and evaluating arguments. By analyzing in detail argumentative activities in many arenas, including informal ones – like in everyday life conversation, or in specific negotiations involved in ordinary routines – the integration of external and internal aspects of disputes provide powerful analytic grids to detect what kind of arguments or counter-arguments an actor takes in charge and what kind of argumentative movement is produced in interactions or monologic texts and discourses.

There are three levels of analysis that a pragmatic approach needs to articulate:

1. Frames, situations and arenas in which actors are faced with an argumentative constraint – with different strategies to escape (Goffman 1974, Boltanski & Thévenot 1991, Jasper 2005…);
2. The making of arguments as an activity around argumentative nodes or cores (Anscombre & Ducrot 1983, Perelman & Olbrechts-Tyteca 1988, van Emeeren *et al.* 2004, Plantin 1990, Doury 1997 …);
3. The transformation of arguments over time through a long series of redefinitions generated by disputes and controversies and through which some arguments are selected and become strengthened enough to join common representations and ordinary discourses (science studies revisited by Socio-Ballistics …).

How is an alert, a criticism or a judgment taken into account by different actors and how does it enable them (or not) to transform collective devices, norms and institutions? What kind of disputing procedure is available and how do actors deal with the plurality of debate arenas or with the different forms of public discussion? How do controversies, public debates, court trials and political mobilizations affect the course of social transformations? These questions are asked in the context of a larger programme on dispute resolution mechanisms. In this programme, the key issue is: in what conditions can new arguments appear, be transformed in common features and inform the design of standard devices? Here we observe a circular property which describes a social learning process: it is through disputing trials that common grasps based on tangible assertions, resulting from collective tests, are gradually embedded in ordinary practices and social representations.
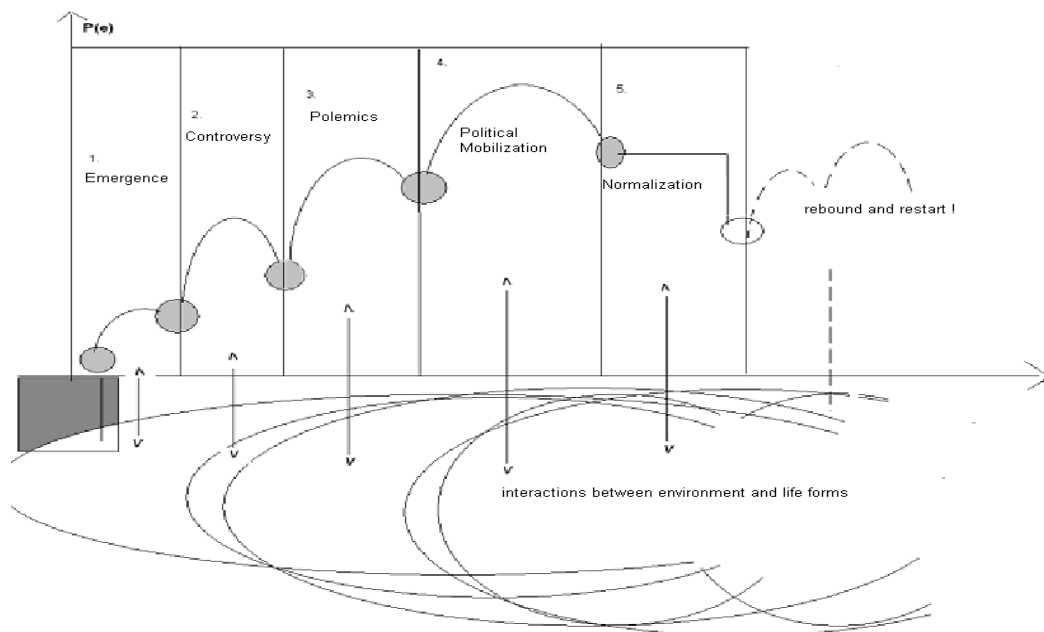
Engaging into an argumentative process puts one's basic beliefs at risk: a first reason for this is that one is confronted with other beliefs; a second reason lies in the fact that elements derived from different arguments come into contradiction with the principles underlying our beliefs and our fundamental values. This explains why, in many debates, accepting to enter a genuine dialogic process quickly leads players to seek a compromise if they are oriented towards consensus and cooperation – having recourse to various processes that can help them to close as soon as possible the discussion ("we will not argue on this point", "this would lead us too far"). In the case of a dissensus orientation, however, the figure that Lyotard (1988) describes as the concept of *différend* (or "deep disagreement"), leads to a defence crystallization in order to reduce the views of others and to literally bomb one's opponent's arguments so that the latter cannot respond, aiming at reducing the latter's scope of intervention. In both cases, the passage by argumentation involves the faculties of both action and emotions.

3. The Sociological Ballistics and the dynamics of public issues

In *Les Sombres Précurseurs* ("The Dark Forerunners", Chateauraynaud & Torny 1999), we have tried to distinguish the main configurations (or "regimes of action") which operate as social frames and help actors to organize their actions and judgments. Events, actors and argumentations, and, *a fortiori*, scientific expertise, do not play the same role according to the configurations in which they are mobilized.
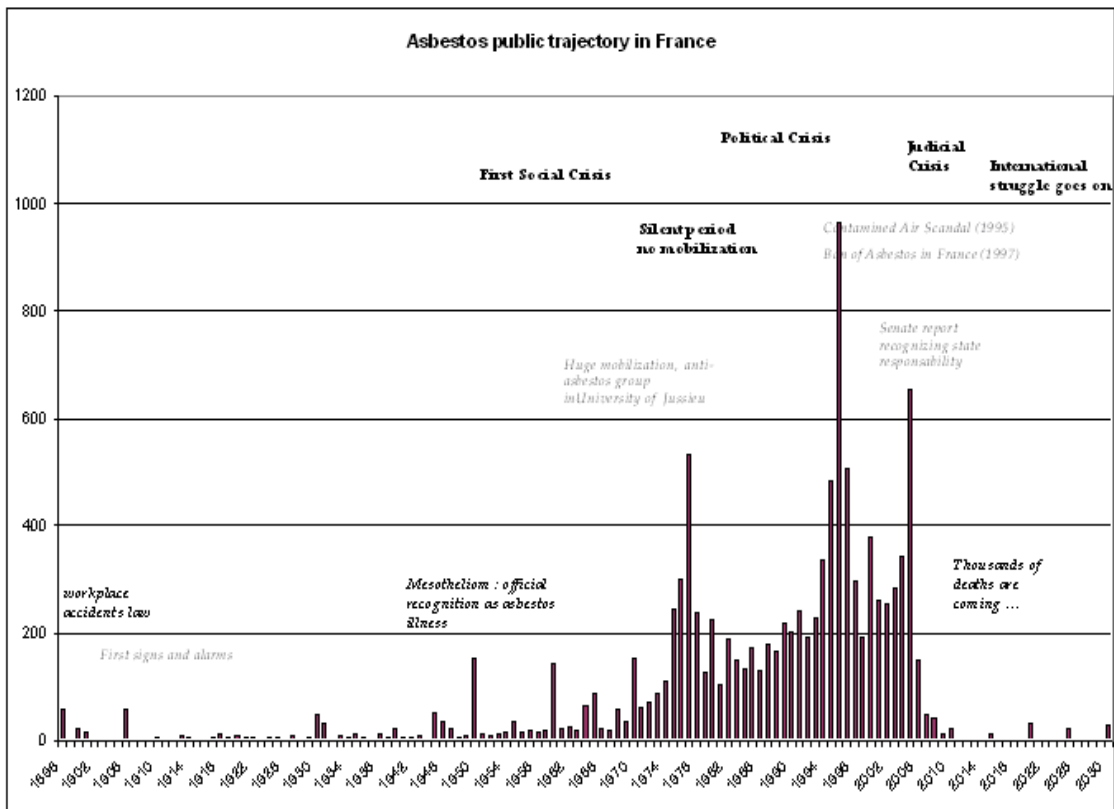
This graph is based on statistical distribution of the citation of years in the discourses and texts that compose the asbestos French corpus studied by Prospéro

P(e)

1. Emergence

2. Controversy

3. Polemics

4. Political Mobilization

5. Normalization

rebound and restart !

t

interactions between environment and life forms

A Ballistics of collective action

Ballistics seems to be a very deterministic notion. The question one can ask is: how do actors follow the right trajectory for an alarm, criticism and mobilization, and symmetrically, how do they fail to convince, to mobilize and to achieve their goals? Here is the link with the focus on radical criticism and activism: what is an activist job?

- to push or to pull forward a problem – or a solution;
- to open or close controversy or public debate – in order to have the last word;
- to target public opinion and political sphere – by campaigns, demonstrations and performances (Tilly 2008);
- to change law or institutions, or to defend them;
- to implement real actions on the ground and get tangible effects, after resolutions are officially taken.

Then collective actors are intentional ones and develop a ballistics. But does our ballistics imply a teleological rationality? Not necessarily! We can take it in a pragmatic sense: that is if we look at variations and bifurcations, unexpected movements and effects, and at the same time, the capacity of actors to adapt, or not, from one context to another, to change their targets in the course of action. Unexpected events and intense moments of

argumentation are key frames for understanding the turning points in a long series of disputes and mobilizations. The key moments of argumentation are crucial (critical) and play an important role in the shifts, from vigilance to alarm, from alarm to controversy, from controversy to polemics.

Different programmes, called "mapping controversies", deal with such conceptual and methodological problems. But, better than "topics", we can follow "sets of actors and arguments", and in place of reifying "networks", we can deploy long-term transformations, in which visions of past, present and future are taken seriously with a strict symmetry. Furthermore, it allows us to distinguish different phases: emergence (making new signs and problems visible), controversy (agree or disagree on facts and matters of facts), claims, denunciations and polemics (defining victims, responsibilities and guilt), political mobilization (with the aim of modifying or defending law and conventions), normalization and regulation (putting in practice texts and rules, by involving many actors in a process of governance ...).

What is an argumentative convergence? We shall speak of argumentative convergence when different arguments are brought together in order to strengthen a standpoint or a position in a field crossed by tensions and forces, creating a system around an argumentative node. There is a big difference between convergence and juxtaposition or addition – think of the arithmetics model of argumentation A + B + C used by Bruno Latour (Latour 2005): convergence supposes devices and tools to articulate different argumentative logics which are linked by a form of solidarity – in the case of addition, you can cut one element without affecting the others. For instance, the strength of argumentative devices like the ones used by many activists comes from the articulation of risk issues, democratic questions, governance of sciences by competition and the critique of the "new big brother" developed by states and firms under the concept of "global security". Another good example of argumentative convergence is provided by the GMOs case: in France, anti-GM movement has succeeded in bringing together a health and environmental issue and an economical struggle about property on seeds in agriculture. In order to identify and analyze the way in which a convergence or a divergence occurs, over time, in argumentative devices, we must focus on indicators and marks, often forgotten by social analysts.

4. The temporality of debates: events and discourse. The case of "désormais"

Let us now try to illustrate how the observation of specific linguistic devices may serve the general research programme outlined above. According to French grammarians (*e.g.*, Pinchon 1969, p.74), "*désormais*" [from now on] is considered as having a durative value, as is the case with "always" or "never": it marks the beginning of a period which is supposed to continue unbroken for a certain time. In that, it contrasts with adverbs indicating the moment in which an action takes place ("yesterday"), its frequency ("often", "seldom") or the ordering of the events ("then", "before", "after").

"Désormais", like "depuis" [since] and "dorénavant" [from now on, henceforth], indicates the beginning of a period that is at stake. It may have a framing function (Le Draoulec & Bras 2006) when it appears at sentence initial position. From this position, the adverb has scope over all the sentences that follow it in paratactic coordination as in example 4:

(4) *Désormais*, on connaît parfaitement l'état des centrales à l'Est ; on les inspecte régulièrement ; leurs opérateurs sont formés en Europe ou aux Etats-Unis ; on leur fournit simulateurs, ordinateurs, systèmes d'alarme. (corpus nucléaire)

From now on, the condition of the nuclear power station in the Eastern Europe is well-known; inspections are carried out on a regular basis; the operating staff is trained in Europe or in the United States; they are provided with simulators, computers, alarm devices.

"Désormais" poses a temporal scheme characterized by the stop of an ongoing process at the present moment. The so-called "present moment" may be identified with a specific event that occurred recently, or may be assimilated with the very moment in which the sentence is being uttered. The period which follows this stop is presented as homogeneous and lasting, if not as irreversible.

When combined with future tense, and under certain conditions (which will be detailed below), "désormais" may gain a performative value: it is presented as if, by its very utterance, it could make happen the period that starts after the temporal breach. This performative value may be illustrated with the use of "désormais" introducing local conventions in scientific papers as in example 5:

(5) Cet article s'inspire des réflexions issues de la théorie de l'Argumentation dans la Langue (*désormais* AdL).

This paper builds on insights from the Argumentation Within Language Theory (*henceforth* AwL).

Along the same lines, the performative value of "désormais" may be illustrated by examples issued from political discourse. For instance Nicolas Sarkozy, since his election as President of France, hammers in his public speeches his will to profoundly re-orientate French politics and to inaugurate a new era through various political reforms. Such an ambition is associated with the recurrent use of the adverb "désormais". Here is an example of the speech he delivered in July 2008 at the Conseil National de l'UMP:

(6) Nicolas Sarkozy : moi j'ai été élu pour agir/ (.) j'ai été élu pour conduire un mouvement de réformes SANS précédent\ (.) dans notre pays \ (.) et j'veux dire à nos partenaires européens\ (.) la France est en train d'changer\ (.) elle change beaucoup plus vite\ (.) et beaucoup plus profondément qu'on ne le croit\ (.) *désormais*/ (.) quand y a une grève ne France personne ne s'en aperçoit [souriant, bras ouverts en fin de phrase] [applaudissements, rires] *désormais*/ (.) cher Jean-Claude Gaudin (.) on peut réformer les ports (.) parce qu'on est JUSTE (.) *désormais* on peut dire que l'problème de la France (.) c'était qu'on travaillait pas assez (.) alors que le monde ne nous attend pas (.) on peut réformer profondément (.) les 35 heures (.) *désormais* (.) on peut faire la politique pour laquelle on a été élu\ (.) tout simplement parce que j'n'ai pas

menti aux Français (.) avant l'élection/ (.) et j'n'ai pas davantage l'intention (.) de leur mentir (.) après\ (.) je vous remercie\ [fin du discours]

Nicolas Sarkozy: I have been elected in order to take action, I have been elected in order to lead a reform movement WITHOUT precedent in our country. And I want to tell our European partners that France is in the process of change. It is changing faster and a lot more profoundly that one can imagine. *From now on/* (.) when there is strike in France none will notice [smiling, opens hands at the end of his sentence] [applauds, laughs] *from now on/* (.) dear Jean-Claude Gaudin (.) we can reform the ports (.) because we are CORRECT (.) *from now on* we can admit that the problem of France was (.) that we were not working ENOUGH (.) but the world is NOT going to wait for us (.) we can reform PROFOUNDLY (.) the 35 hour workweek (.) *from now on* (.) we can take the political decisions for which we were elected \ (.) simply because I did not lie to the French people (.) before the elections/ (.) and I do not have the intention (.) to lie to them (.) afterwards\ (.) thank you\ [end of speech]

The expression of the will to change French political scene comes before a succession of four instances of "désormais". Nicolas Sarkozy identifies the turning point that is marked by this adverb with his accession to the Presidency. The first instance of "désormais" introduces some kind of mockery dear to the President. The following three "désormais" characterize the opening era by the emergence of new potentialities, marked by the repetition of "désormais, on peut" ("from now on, we can …")

"Désormais" gains a performative value because of various characteristics of the speech situation:
-   First, the fact that it appears at the end of the speech, which is usually a strategic position for public, media-covered, political discourses;
-   Second, the sentence initial position of "désormais", which constitutes a linguistically strategic position;
-   Third, the fact that the speech, at this moment, is addressed to Nicolas Sarkozy's European partners, which confers a certain degree of solemnity on it;
-   And finally, the fact that "désormais" is uttered by the Head of the State, who is (or at least, is supposed to be) in a position to make the announced change happen.

In brief, it is because Nicolas Sarkozy says that, under the above specified circumstances and in this specified phrasing, that the periodization introduced by "désormais" stands for a political commitment.

On the basis of the preceding linguistic observations, one can suggest that "désormais" constitutes an interesting indicator of the construction and modification of the key moments of a controversy. It often testifies for the arguers' disposition to leave behind them a disowned or, on the contrary, idealized past and to picture themselves in a more or less reversible future which may be hoped or feared. In close connection to this temporal function, "désormais" may re-define the repertoire of arguments available at some point of a controversy.

From this perspective, the case of the nuclear controversy is exemplary: no doubt, there is a "before" and an "after" Chernobyl. The accident of the Ukrainian nuclear plant was argumentatively constructed as a breaching point of the debate, and was used to disqualify

former acceptable arguments, such as the accusation of gloom-mongering addressed to the anti-nuclear activists. In example 7, "désormais" helps to elaborate a chronology of the events discussed in the nuclear debate that is argumentatively significant:

(7) Or la catastrophe de Tchernobyl a porté un rude coup aux programmes nucléaires occidentaux, *désormais* en pleine récession. (*L'Evénement du Jeudi*, 18/04/1996)

Now the Chernobyl disaster has dealt a serious blow to western nuclear programs, which suffer *from now on* from a severe recession.

The last point of this paper will be a brief case study on the role of "désormais" as a temporal organizer of a debate on four main controversial issues: GMOs, Nuclear power, Asbestos and Nanotechnologies.

The first range of observations that the study of "désormais" permits is the identification of the events presented as turning points, as marking breaches in the controversy that may re-define the arguments considered as relevant at a given moment of the debate. Such a turning point may be explicitly matched with a specific event in the sentence that contains "désormais" or in the larger co-text. It may consist in:

- An administrative or judicial decision that imposes new norms:

(8) La directive EURATOM du 13 mai 1996 fixe *désormais* les coefficients de dose pour chaque tranche d'âge. (corpus nucléaire)

Euratom n°96-29 directive of 13 May 1996 sets *from now on* the maximum permissible doses for each age bracket.

- A political decision which may have consequences on connected domains:

(9) Dans l'ex-Union soviétique et aux États-Unis, en raison des programmes de démantèlement des armes nucléaires, des quantités considérables de plutonium sont *désormais* disponibles et peuvent être utilisées à la production d'énergie ou doivent être mises à l'abri de détournements à des fins belliqueuses. (corpus nucléaire)

In former Soviet Union and in the United States, because of nuclear weapons disarmament programmes, considerable amounts of plutonium are *from now on* available and may be used for the production of energy or they have to be protected from any traffic for military purposes.

- A technical test which may define a new state of knowledge :

(10) Mais nous avons fait des tests et nous sommes *désormais* sûrs qu'il n'y aura pas de problème lors du passage à la nouvelle année. (corpus nucléaire)

But we made some tests and *from now on* we are sure that there won't be any problem on the arrival of the New Year.

In connection with the identification of the event pointed at by "désormais", the analyst may also discern the characteristics of the new period.

- The rupture may be epistemic, and "désormais" may introduce a period characterized by a new state of knowledge. In turn, this state of knowledge may act upon the arguments that may henceforth be advanced on the issue at stake. From a Perelmanian perspective, arguers try thus to re-define which "facts and truths" are likely to provide "points of agreement" on the disputed matter (Perelman & Olbrechts-Tyteca 1988, p. 89).

Example 11 shows *a contrario* the connection between the definition of new points of agreement and argumentation. The speaker, who is a scientist, admits the validity of studies which establish a connection between nuclear tests and increasing thyroid cancers. Nevertheless, he tries to disconnect these factual assertions from political or judicial claims they might support (claim for a compensation for the Mururoa and Fangataufa veterans).

(11) Si le lien entre essais nucléaires et taux anormalement élevé de cancers thyroïdiens est *désormais* "acquis", la prise en charge des soins des vétérans de Moruroa et Fangataufa paraît-elle légitime ? Je ne veux pas me prononcer là-dessus, je suis un scientifique.

Assuming that the connection between nuclear tests and an abnormally high rate of thyroid cancers is *from now on* established, are the Moruroa and Fangataufa veterans justified in demanding the reimbursement of their treatment? I don't want to take a stand on that, I am a scientist.

It's up to scientists to bring an epistemic breach in a controversy; it is up to the social actors to draw the political conclusions from the new state of knowledge. The fact that this scientist has to make explicit his argumentative neutrality shows how plausible the argumentative interpretation of his epistemic claim was.

- The rupture may also be deontic. A statistical survey of our four corpora shows an important rate of "désormais" associated with deontic expressions or markers of normativity or juridicity, such as "we must / have to", "we cannot… anymore", "it is mandatory to…", "it is imperative that…".

(12) Le POE rapproche encore un peu plus toutes les fonctions nécessaires à l'exploitation des tranches, mais sa situation interdit *désormais* la reproduction d'une tranche 2 par simple translation de la tranche 1. (corpus nucléaire)

The Operational Pole of Exploitation brings even closer all functions necessary for the exploitation of the blocks, but its location precludes *from now on* the reproduction of a block 2 by a simple transfer of block 1.

(13) Le Conseil des Ministres de la Communauté a également définitivement approuvé la directive concernant l'étiquetage des produits à base d'amiante et les recommandations qui devront *désormais* y être incluses. (corpus amiante)

The Council of Ministers of the Community has also approved permanently the directive dealing with the labelling of asbestos-based products and the recommendations that will have to be included *from now on.*

The event pointed at by "désormais", in this case, is often a political, administrative or judicial decision, which induces a characterisation of the period in terms of emerging constraints on rights and obligations.

Finally, given the content of the controversies we studied, which are connected to science and technology, "désormais" often introduces a new era characterized by new technical possibilities. "Désormais" is then associated with terms such as "to permit/allow", "be able", "be capable", "can", "possible"…

(14) Il est *désormais* capable d'effectuer 135,5 mille milliards d'opérations par seconde, laissant loin derrière lui son concurrent direct, le japonais Earth Simulator de NEC. (corpus OGM)

From now on it is capable of carrying out 135,5 thousand billions operations per second, leaving far behind its direct rival, Japanese NEC Earth Simulator.

(15) L'homme sait *désormais* intervenir à cette dimension, qui est celle de la molécule, là où les lois de la Physique classique ne s'appliquent plus et où les effets dits quantiques permettent des réalisations inouïes. (corpus nanos)

From now on one knows how to operate at the scale of molecules, where laws of classical physics do not hold anymore and where the so-called quantum effects allow unprecedented achievements.

The connection with argumentative matters here might lie in Aristotle's locus which specifies that in a deliberative context, what is possible should be preferred to what is impossible. More generally, claiming that a given line of action is feasible is a prerequisite for taking a stand on this action, be it for supporting it or for deterring the audience from adopting it.

To conclude, the present paper is part of a research on the temporal dimension of controversies. Of course, the focus on "désormais" we adopted here does not claim to exhaust the question. We only suggest that adverbs like "désormais" constitute interesting clues to investigate the discursive elaboration of the temporal dynamics of controversies. "Désormais" thus allows the analyst to identify the events presented as significant by the arguers, inasmuch as they constitute turning points of the debates. The periodization introduced by "désormais" may then be characterized in terms of the constraints imposed on the argument repertoire, to the redefinition of which this adverb contributes.

References

Anscombre, J.C. & Ducrot, O. (1983). *L'Argumentation dans la Langue*. Bruxelles: Mardaga.

Boltanski, L. & Thévenot, L. (1991). *De la justification*. Paris: Gallimard.

Chateauraynaud, F. (2009). Public controversies and the Pragmatics of Protest. Toward a Ballistics of collective action. Text for the Culture Workshop, Harvard University.

Chateauraynaud, F. & Torny, D. (2009). *Les sombres précurseurs. Une sociologie pragmatique de l'alerte et du risque*. Paris : Editions EHESS.

Doury, M. (1993). L'Appel à Galilée. In C. Plantin (ed.), *Lieux Communs. Topoï, stéréotypes, clichés* (pp.123-132), Paris: Kimé.

Doury, M. (2004). La classification des arguments dans les discours ordinaires. *Langage* 154, 59-73.

Doury, M. (1997). *Le Débat immobile.* Paris: Kimé.

Eemeren, F.H. van & Grootendorst, R. (2004). *A Systematic Theory of Argumentation. The Pragma-dialectical Approach*. Cambridge: Cambridge University Press.

Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. London: Harper and Row.

Jasper, J.-M. (2005). *The Art of Moral Protest : Culture, Biography, and Creativity in Social Movements*. Chicago: University of Chicago press.

Latour, B. (2005). Reassembling the Social: An *Introduction to Actor-Network-Theory*, Oxford University Press.

Le Draoulec, A. & Bras, M. (2006). Quelques candidats au statut de « connecteur temporel ». *Cahiers de grammaire* 30, 219-237.

Lyotard, J.-F. (1988). *The Differend: Phrases in Dispute*. Minneapolis: University of Minnesota Press.

Perelman, C. & Olbrechts-Tyteca, L. (1988). *Traité de l'argumentation. La nouvelle rhétorique*. Bruxelles: Editions de l'Université de Bruxelles (5th ed.).

Pinchon, J. (1969). Problèmes de classification. Les adverbes de temps. *Langue française* 1-1, 74-81.

Plantin, C. (1990). *Essais sur l'argumentation*. Paris: Kimé.

Tilly C. (2008). *Contentious Performances*. Cambridge: Cambridge University Press.