

A Campaign Effect

The Decline in French Opposition to Nuclear Power in 2011-2012

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A CAMPAIGN

EFFECT

THE DECLINE IN FRENCH OPPOSITION TO NUCLEAR POWER IN 2011-2012

Sylvain Brouard, Florent Gougou, Isabelle Guinaudeau and Simon Persico
Translated from French by Alexandra Harwood

On March 11 2011, almost 25 years after Chernobyl, the Fukushima disaster sent the issue of nuclear power hurtling back to the top of the political agenda in industrialised democracies. The “nuclear renaissance”¹ which had characterised the energy policies of many countries since the turn of the millennium ground to a halt and the use of nuclear energy was called in to question in several of these nations, namely Japan, Italy and Germany. The Fukushima disaster also affected the climate of opinion: there is, of course, no doubt that anti-nuclear sentiment has traditionally been more pronounced in some countries (Germany, Belgium, Italy) than in others (United States, United Kingdom). However, broadly speaking, opposition to nuclear power increased the world over following the explosion of the Japanese reactors.²

Despite the fact that France is the country most dependent in the world on this technology,³ there was no sustained increase in opposition to nuclear power in the wake of the Fukushima tragedy. However, it would have been in no way surprising had the media coverage of the risks linked to the use of the 58 reactors active on French soil struck more of a chord with the French people in the wake of the Fukushima disaster. And yet, following a spike in anti-nuclear sentiment among the French population in the immediate aftermath of the explosion, this trend was quickly reversed. Triggered by a negative event, the significant attention given to the issue of nuclear power in the presidential election campaign was accompanied by an unexpected development: public support for nuclear power increased. What exactly was it that prompted this change?

This article seeks to resolve this enigma by studying the dynamics of the 2012 presidential election campaign regarding the issue of nuclear power, and by examining the effects of these dynamics on voters. Election campaigns constitute a high point in the political life of representative democracies. They create a platform for organised effort on the part of political actors, who provide voters with both information and political embodiment, in order to

1. See the examples cited by Trevor Findlay, *Nuclear Energy and Global Governance. Ensuring Safety, Security and Non-Proliferation* (London: Routledge, 2011), 1. See also M. V. Ramana, “Nuclear power and the public”, *Bulletin of the Atomic Scientists*, 67(4), 2011, 43-51.

2. Laurent Bonneval, Cécile Lacroix-Lasnoë, *L'opinion publique européenne et le nucléaire après Fukushima* (Paris: Fondation Jean-Jaurès, 2011); M. V. Ramana, “Nuclear power and the public”.

3. Nuclear energy has been the chief source of electricity produced in France since the mid-1980s. It has become an increasingly significant source of electricity over the decades, stabilising at 80% of electricity generated in France in the 2000s.

achieve their electoral goal.¹ Following a lively debate on whether or not election campaigns did in fact have an impact,² research in the field changed its focus, looking instead at how these campaigns influenced voters. The most recent studies published have concluded that election campaigns are not able to significantly alter “what citizens think”, but that they can heavily influence which issues appear on the political agenda:³ they make it possible to “change what citizens think about”.⁴

Studying the decline in opposition to nuclear power seen in France between 2011 and 2012 offers an opportunity to conduct an in-depth analysis of both the determinants and mechanisms of a campaign effect. This article shows that the decline in opposition to nuclear power was the combined result of three phenomena: historically high levels of media coverage of the issue, its unprecedented politicisation, and its reframing as part of the 2012 presidential election campaign.

This article will begin by demonstrating that the Fukushima disaster was followed by a significant change in the French people’s opinion of nuclear power, but that, against all expectation, this shift in opinion was pro-nuclear from October 2011 onwards. The article will then look to explain this paradox. It will do so by describing the various stages of the media’s coverage of the issue and the mechanisms of party politicisation, as well as the reframing of the issue of nuclear power during the 2012 election campaign. It will then go on to explain how these mechanisms affected opposition to nuclear power on an individual level. The second part of this study will use data pertaining to the coverage of nuclear power in French daily *Le Monde* in order to demonstrate the exceptional nature of both the media exposure and the politicisation of the issue seen in 2011-2012, focusing particularly on the reframing of the issue orchestrated by Nicolas Sarkozy, the presidential majority, and the champions of the nuclear cause. The third section of the article will detail the anticipated effects of the media coverage, politicisation and reframing of the issue on anti-nuclear sentiment among French citizens, before empirically testing the validity of these effects against data gathered by the TriElec surveys. In order to do so, the article will draw upon two types of analysis. It will first examine the responses to an open question on reasons for opposing or supporting nuclear power, before conducting logistic regression analyses of the changes in opposition to nuclear power seen across five surveys, completed between October 2011 and the second round of the presidential election.

In addition to analysing the specific case of opposition to nuclear power in France in 2011-2012, the article will seek to elucidate how campaign effects work, the relationship between issues and party proximity, and the impact of the media on political competition.

1. David M. Farrell, Rüdiger Schmitt-Beck (eds), *Do Political Campaigns Matter? Campaign Effects in Elections and Referendums* (Abingdon: Routledge, 2002); Jacques Gerstlé, *La communication politique* (Paris: Armand Colin, 2nd edn, 2008), 115-34.

2. Andrew Gelman, Gary King, “Why are American presidential election polls so variable when voters are so predictable?”, *British Journal of Political Science*, 23(4), 1993, 409-51. See also Alan I. Abramowitz, “An improved model for predicting presidential election outcomes”, *PS: Political Science and Politics*, 21(4), 1988, 843-7.

3. D. Sunshine Hillygus, “Campaign effects and the dynamics of turnout intention in election 2000”, *Journal of Politics*, 67(1), 2005, 50-68; Shanto Iyengar, Adam F. Simon, “New perspectives and evidence on political communication and campaign effects”, *Annual Review of Political Psychology*, 51, 2000, 149-69; Daron R. Shaw, “The effect of TV ads and candidate appearances on statewide presidential votes, 1988-96”, *American Political Science Review*, 93(2), 1999, 345-61; Sara B. Hobolt, Sylvain Brouard, “Contesting the European Union? Why the Dutch and the French rejected the European Constitution”, *Political Research Quarterly*, 64(2), 2011, 309-22.

4. Bernard C. Cohen, *The Press and Foreign Policy* (Princeton: Princeton University Press, 1963).

The paradox: the decline of opposition to nuclear power in French public opinion

What can be learned from the TriElec surveys

At regular intervals between October 2011 and May 2012, the five waves of TNS Sofres-TriElec surveys¹ measured the level of support among the French population for the production of nuclear energy. They did so by posing the same question as that which appeared in the Eurobarometer survey conducted around the same time. Participants were asked whether they were “totally in favour of, mostly in favour of, mostly opposed to or totally opposed to the production of energy by nuclear power plants?”.

How should the responses to such a polling question be viewed? In French political science, debate between the champions and detractors of opinion polls is fierce. On the one hand, some political commentators, pollsters and journalists generally deem the answers given in opinion polls to be expressions of valid opinions or, in other words, a measure of political preferences. On the other, Pierre Bourdieu and a plethora of French authors after him have refuted such presuppositions. For Bourdieu, “all opinion polls assume that everyone can have an opinion; or, in other words, that the formulation of an opinion is something which is within everybody’s grasp. At the risk of contradicting a naively democratic sentiment, I call this first assumption into question”.² If we agree with Bourdieu, then we should view the analysis of responses given to the opinion polls as devoid of any scholarly validity, on the basis that such opinion polls are nothing more than “a pure and simple artefact”.

This article stands somewhere between the two schools of thought. According to the theory first articulated by Zaller, peoples’ attention to public affairs and interest in politics are not static dispositions. Very few individuals have stable preferences across all political issues. Consequently, the responses given to questions asked in opinion polls must not be considered as the products of fixed and consistent attitudes towards the issue in question. Rather, they should be viewed as the reflection of viewpoints or of “the thoughts that are most accessible in memory at the moment of response”.³ Despite drastically altering the meaning attached to the results of opinion polls,⁴ Zaller emphasises that neither personal opinion nor the results of opinion polls are entirely lacking significance: these results should be seen as a gauge of the relative balance of the views expressed on a given issue at either individual or group level. This approach, both realistic and constructive, is particularly appropriate as a tool with which to study and understand the changes seen in the responses to opinion polls. It extends beyond the overly-simplistic alternatives of a change in attitudes unlikely in the short term and random responses produced by non-attitudes.⁵

1. TNS Sofres-TriElec surveys conducted in October 2011, December 2011, February 2012, March 2012 and May 2012, financed by Sciences Po Bordeaux, Grenoble and Paris as well as by the Ministry of the Interior for the first four waves and the Sopra Group for the last wave.

2. Pierre Bourdieu, “L’opinion publique n’existe pas”, *Les Temps modernes*, 318, 1973, 1292-309. [Citations from French-language publications are translated by this article’s translator unless otherwise indicated.]

3. John Zaller, Stanley Feldman, “A simple theory of the survey response: answering questions versus revealing preferences”, *American Journal of Political Science*, 36(3), 1992, 579-616 (580).

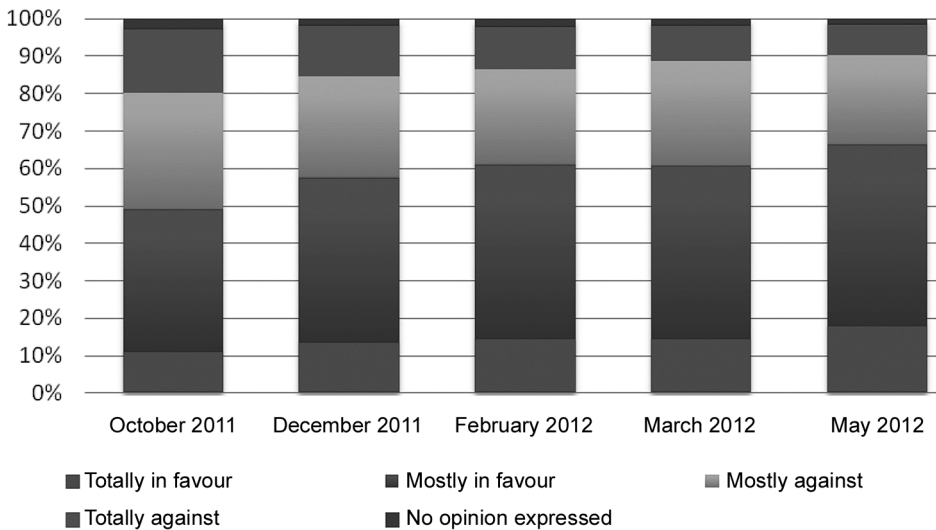
4. For an in-depth discussion of Zaller’s approach and a test of its elements, see Nonna Mayer, “Dispositions et situations: la démocratie mise à l’épreuve”, in Pierre Favre, Olivier Filleule, Fabien Jobard (eds), *L’atelier du politiste* (Paris: La Découverte, 2007), 149-61.

5. Philip Converse, “The nature of belief systems in mass publics”, in David Apter (ed.), *Ideology and Discontent* (Glencoe: The Free Press, 1964), 206-61.

Such an approach provides an analytical framework which proves highly relevant in understanding the development of opposition to nuclear energy over the course of the presidential election campaign. In his thesis on the media and the nuclear energy agenda in France between 1970 and 2000, Philippe Blanchard characterises the majority of those participating in opinion polls on nuclear power as “ill-informed and involved only minimally in the issue; [people] whose choices are made with little conviction and change with the political climate”.¹ If we accept Blanchard’s view, then we cannot consider opinions expressed on nuclear energy as the product of stable attitudes. Moreover, Blanchard contends that “a traumatic event, such as a disaster in France or abroad, or a new scandal regarding the transparency of the authorities, could see the majority shift towards supporting the complete decommissioning of all nuclear power stations. Conversely, a major economic crisis (such as that heralded by the crash of the banks and the stock exchange in 2007) or a disruption to the hydrocarbon supply appear sufficient to prompt a majority shift towards support for a relaunch of the power plant construction programme”.² Within this context, it is particularly interesting to analyse the impact of the Fukushima disaster and the 2012 presidential election campaign, marked by a devastating economic crisis, on the French climate of opinion regarding nuclear power.

As far as this impact on the climate of opinion is concerned, Figure 1 reveals a change in public opinion in the aftermath of the Fukushima disaster which, in theory, should come as a surprise. Less than a year after the tragic events of 11 March 2011,³ the proportion

Figure 1. Support for the production of nuclear energy in France (October 2011-May 2012)



Sources: TNS Sofres-TriElec surveys, October 2011-May 2012.

1. Philippe Blanchard “Les médias et l’agenda de l’électronucléaire en France. 1970-2000”, doctoral thesis in political science, Paris, Université Paris-Dauphine, 2010, 163.

2. Philippe Blanchard, “Les médias et l’agenda de l’électronucléaire en France. 1970-2000”, 163.

3. Support for nuclear power fell in the immediate aftermath of Fukushima. See L. Bonneval and C. Lacroix-Lasnoë, *L’opinion publique européenne et le nucléaire après Fukushima*, and Commissariat général au développement durable, *Le point sur les Français et l’énergie*, 139, August 2012, a fall which our data does not make visible. In any case, the short-term drop in support for nuclear power was very quickly followed by an even sharper spike.

of the French population in favour of nuclear power quickly and sharply increased. The first signs of this development appeared in the last quarter of 2011, more specifically between the end of the socialist primaries and early December of that year. The proportion of those surveyed expressing support for nuclear power went from 50% in October 2011 (39% mostly in favour and 11% totally in favour) to 58% in December 2011 (44% and 14% respectively). In February and March 2012, this proportion stood at 61% (46% and 15% respectively), before finally rising to 66% in May 2012 (48% and 18% respectively).

Confirming an unprecedented trend

Clearly, measuring a phenomenon and the way in which it develops using only one variable can lay researchers open to the accusation of producing entirely coincidental results.¹ In order to confirm the robustness of the trend uncovered by the TriElec surveys, we adopted two validation strategies.

First, in order to account for the bias which might have been introduced as a result of the fact that the TriElec surveys are not specifically devoted to the issue of nuclear power, but rather monitor the presidential campaign in general terms, we compared our results to those of other surveys available which included indicators on this issue. All of the survey series available confirmed the observations produced using the TriElec data. The trends described above are consistent with those identified by the survey “Studies of the perceptions and expectations of the general public”² and by the EDF’s “Energy Barometer”, the annual survey of the French population on energy-related issues. They also tally with the Barometer of Opinion on Energy and Climate³ conducted by France’s General Commission for Sustainable Development. All produce results which evolved in a similar fashion between 2011 and 2012.⁴

Second, we constructed a “longitudinal index of preference”⁵ (or “mood”) on nuclear power, following the method developed by Stimson. This measurement synthesises the changes in public opinion identified from the responses to several questions posed at more or less regular intervals and combines them in one unique indicator which can be compared at different points at time. Having access to several surveys carried out at frequent intervals during the period in question enabled us to gauge a month-by-month “mood” using the

1. On this point, see James Stimson, Vincent Tiberj, Cyrille Thiébaud, “Le *mood*, un nouvel instrument au service de l’analyse dynamique des opinions: application aux évolutions de la xénophobie en France (1999-2009)”, *Revue française de science politique*, 60(5), 2010, 901-26 (903).

2. The surveys “Les Français et la science. Études des perceptions et attentes du grand public” and the TriElec surveys were conducted by TNS Sofres using two different methods (face-to-face and over the telephone respectively) at very frequent intervals (between the 17 November and 2 December 2011, and the 8-9 December 2011 respectively). They posed the same question: “As far as energy is concerned, two solutions are today being considered – which would you prefer? Gradually replace old nuclear power plants with new ones on the same sites; Do not replace these power plants and gradually phase out this form of energy”. The proportion of respondents choosing the second option was the same in both surveys (56%). The proportion of respondents in favour of the first option was greater in the TriElec survey, leaving a smaller percentage of respondents expressing no opinion. The survey “Études des perceptions et attentes du grand public” is presented in Daniel Boy, “Les représentations sociales de la science et de la technique”, in Olivier Duhamel, Édouard Lecercf (eds), *L’État de l’opinion 2013* (Paris: Seuil, 2013), 227-48.

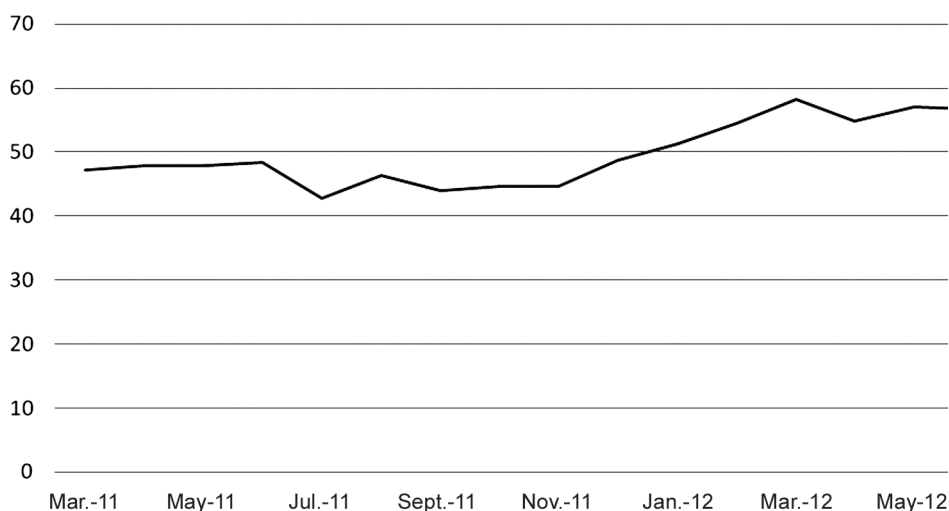
3. Commissariat général au développement durable, “Baromètre d’opinion sur l’énergie et le climat en 2012”, *Chiffres et Statistiques*, 412, April 2013

4. The 2013 barometer of the Institut de radioprotection and sûreté nucléaire also presents results which evolved in a similar way.

5. J. Stimson, V. Tiberj, C. Thiébaud, “Le *mood*, un nouvel instrument au service de l’analyse dynamique des opinions...”. The piece of software WCalc, used to construct “the mood”, can be downloaded free of charge at this address: <<http://www.unc.edu/~jstimson/Software.html>>.

surveys conducted after the Fukushima nuclear disaster, between March 2011 and June 2012 (Figure 2). This indicator, based on the 24 measurements taken from six series of questions on opinions regarding nuclear power, confirms the trend¹ revealed by the TriElec data and rules out the possibility that this trend was merely coincidental or based on biased measurements. The increase in support for nuclear power between November 2011 and March 2012 is plain to see (+14 points), after a period of relatively stable levels of support between March and November 2011.²

Figure 2. Changes in levels of support for nuclear energy in French public opinion (*mood*) between March 2011 and June 2012



Sources: TNS Sofres-TriElec surveys, October 2011-May 2012; Le baromètre d'opinion des Français sur l'énergie, July 2011-November 2012; Le baromètre de l'énergie, EDF, March 2011-June 2012; Ifop survey (March 2011-March 2012); CREDOC survey for the French Energy Observatory (July 2011-January 2012); IRSN barometer.

Measuring the “mood” is also useful in order to place recent developments in their historical context. From this perspective, it is particularly interesting to compare such developments in the post-Fukushima period with those seen in the months which followed the Chernobyl disaster. The problem of not having a long series of questions³ was counterbalanced by the fact that the method used to calculate the “mood” neutralised any bias linked to question headings or the methodologies used to conduct the surveys.⁴ It has already been demonstrated that the level of support for nuclear energy varies according to whether survey respondents are asked about their general position on the production of electricity using nuclear energy, on the need to phase out such technology, or on not replacing end-of-life

1. The six series are positively correlated with the longitudinal index of preference and this correlation was very strong, since the weakest correlation coefficient (Pearson's r) was 0.73.

2. The data included in this analysis do not make it possible to demonstrate the difference between levels of support for nuclear energy before and after the Fukushima disaster. This will emerge in the following analysis.

3. The barometric series of the BVA institute for the CEA, EDF, Framatome and Cogéma, or those of the CREDOC, used by Philippe Blanchard (“Les médias et l'agenda de l'électronucléaire en France...”, 130-3), do not cover all of the period in question and are not available in their entirety.

4. William A. Gamson, André Modigliani, “Media discourse and public opinion on nuclear power: a constructionist approach”, *American Journal of Sociology*, 95(1), 1989, 1-37.

nuclear power stations. These differences in the way questions are formulated explain how two surveys, published in the immediate aftermath of the Fukushima disaster, were able to reach dramatically different conclusions.¹

Our indicator of the annual level of support for nuclear energy (Graph 3) was calculated using 302 measurements, taken from across the responses to 24 different questions from a variety of sources (surveys and barometers), posed a minimum of three times between 1975 and 2012.² In addition to its methodological advantages, the use of this indicator was appropriate for our theoretical approach: Stimson himself explicitly stated that where individual-level research was concerned, the approach devised by Zaller and Feldman was the theoretical basis of his macroscopic approach to changes in public opinion.³ However, as has been emphasised by Stimson, Tiberj and Thiébaud, “the longitudinal index makes it possible to adopt a new approach to context and sociopolitical changes, producing an image of democracy different from that traditionally extrapolated from previous results of analyses of public opinion using classic theories. What the public mood shows is not consistent with either the view that voters operate on the basis of ideology, and have stable preferences and value systems, nor with the theory that only a small minority of citizens who are particularly attentive to public affairs change their opinions in response to the debates and events that unfold in the political sphere”.⁴

In the longer-term perspective, the polarisation of public opinion in support of nuclear energy in 2011-12 appears yet more exceptional still. Contrary to popular belief, French public opinion has remained largely anti-nuclear since 1986 and the Chernobyl disaster. The level of support for nuclear power in 2012, reached following a sudden spike (+7 points), was relatively high and only equaled by the levels of support seen prior to the Chernobyl disaster and during the “nuclear renaissance” at the dawn of the new millennium. The changes in public opinion post-Fukushima are even more astounding when compared with those seen in the months and years following the Chernobyl disaster. This period saw a continued decline in support for nuclear energy (-19 points) – support which had fallen to around 40% by 1990.⁵ It would thus appear that the two disasters had markedly different repercussions on the climate of opinion. From 2009 onwards, support for nuclear energy broadly began to decline once more: the peaks in support seen in late 2011 and early 2012 thus sharply reversed this downward trend to bring our indicator to its current level.

1. In a survey conducted by Sofres on the 15 and 16 March 2011 and commissioned by EDF, 42% of respondents stated they were in favour of phasing out nuclear power. The question posed was as follows: “Are you totally in favour, mostly in favour, mostly not in favour, or not at all in favour of the Green Party's call to stop the production of nuclear energy in France?”. In another survey, conducted by Ifop on 15 and 17 March 2011 and commissioned by Europe Écologie Les Verts (EELV), 70% of those surveyed said they were in favour of halting the production of nuclear energy. The question posed was as follows: Do you wish to see France: “1. Continue with its nuclear programme and build new nuclear power plants; 2. Gradually phase out its nuclear programme over the next 25 or 30 years; 3. Quickly halt its nuclear programme?”. 51% of participants wished to see the nuclear programme phased out within 25 to 30 years, 19% wished to see it quickly grind to a halt and only 30% wished to see it continue.

2. For a detailed presentation of the indicators included, see Sylvain Brouard, Isabelle Guinaudeau, “Policy beyond politics? Public opinion, party politics and the French pro-nuclear energy policy”, *Journal of Public Policy*, to be published in 2014.

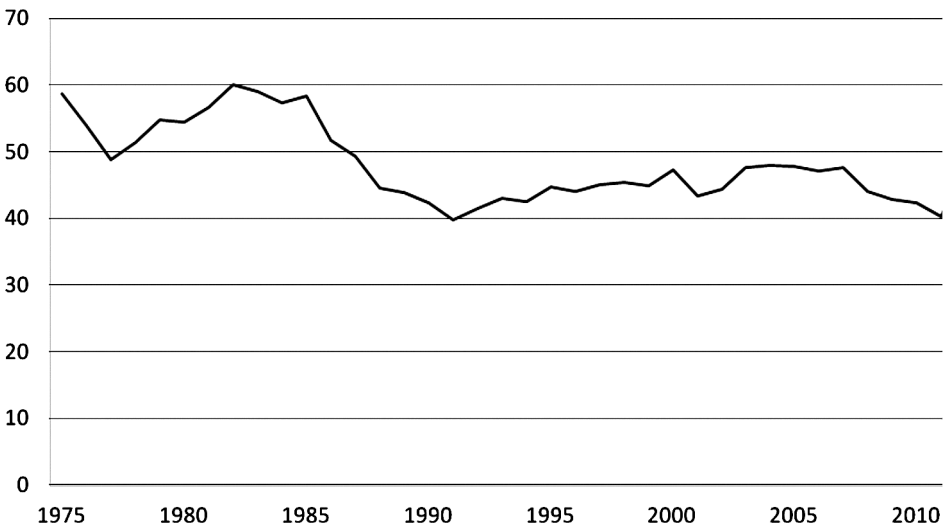
3. James Stimson, *Tides of Consent* (Cambridge: Cambridge University Press, 2004), 28-30.

4. J. Stimson, V. Tiberj, C. Thiébaud, “Le mood, un nouvel instrument au service de l'analyse dynamique des opinions...”, 923.

5. In the months or years following the Chernobyl disaster, public opinion did not “bounce back” as it did after events in Fukushima.

The growing support for nuclear power seen in French public opinion during the 2011-2012 election campaign, a trend confirmed by this first section of the article, is unique from several points of view. It is unique, firstly, from a comparative perspective – anti-nuclear sentiment in other countries broadly continued to grow in the wake of the Fukushima disaster.¹ It is unique, secondly, from a historical point of view, as French support for nuclear power post-Fukushima contrasts starkly with the increasingly anti-nuclear public sentiment in the wake of the Chernobyl disaster. How, then, can we explain this spike in support for nuclear power in the year following a major disaster? The extensive media coverage, unprecedented politicisation, and successful reframing of the issue are key to understanding the paradoxical decline in hostility to nuclear power seen during the 2012 campaign.

Figure 3. Changes in levels of public support (“mood”) in France between 1977 and 2012



The 2012 campaign and the issue of nuclear power: media coverage, politicisation, and “reframing”

Nuclear power hits the headlines like never before

In addition to a changing climate of opinion, France’s presidential election campaign was marked by the unusually extensive media coverage of issues related to nuclear power. Analysing the pages of French daily *Le Monde*, researchers have charted the development of this media coverage. The crucial role played by this newspaper of reference in placing these issues on the media agenda has already been made clear by Philippe Blanchard, who noted that other media outlets were quick to adopt the publication’s priorities – these included dailies (*Libération*), weeklies (*Le Point* and *L’Express*) and television news broadcasts (France 2). Blanchard concluded that “the issue of nuclear power gained prominence in the public sphere

1. L. Bonneval, C. Lacroix-Lasnoë, *L’opinion publique européenne et le nucléaire après Fukushima*. See also M. V. Ramana, “Nuclear power and the public”.

largely due to [...] a short-term domino effect among media outlets”¹ and *Le Monde* played a pivotal role in this process.

As shown in Figure 4, broadly speaking nuclear energy received only limited attention from the late 1970s onwards, although did occasionally come under the media spotlight. The years 1977-1981 were marked by vehement anti-nuclear protests in France – protests at least equivalent in scope to those seen in West Germany during the same period² – mobilisation which explains the increased prominence of nuclear issues in the media. Whilst the early 1980s saw the anti-nuclear movement lose impetus and the issue depoliticised,³ the years which followed saw media interest in the issue spike on four separate occasions. The first was in 1986, in the aftermath of the Chernobyl disaster. The second came in 1987, sparked by the controversy surrounding the nuclear waste reprocessing plant in The Hague, the arrival in government of ministers from environmental parties, and debates on the decommissioning of French nuclear power plant Superphoenix.⁴ A third followed in 2006-2007, triggered not only by the “nuclear renaissance” and the decision to restart the programme of building EPR reactors in France following a lengthy break in construction, but also by the debates on nuclear proliferation and the potential role of nuclear power in the fight against climate change.⁵ Interest in the issue peaked for a fourth and final time in 2011, in the wake of the Fukushima disaster.

However, the historically high visibility of nuclear issues in the media in 2011-2012 cannot be explained solely by the Fukushima disaster: the extensive media coverage was also the result of the unprecedented politicisation of the issue of nuclear power during the presidential election campaign. A detailed analysis of the various phases of media coverage of nuclear power from January 2006 onwards confirms the crucial role played by these two factors (Figure 5). Whilst the media coverage of the issue of nuclear power in *Le Monde* never exceeded 44 articles a month between early 2006 and the Fukushima disaster, it did increase sharply in March 2011, peaking at 131 articles, and coverage then remained relatively high until June 2011. After this lengthy period of intensity, media interest in the issue of nuclear power dropped to the average levels recorded during previous summers before increasing once more in September and October 2011 – a result of the debates on nuclear power staged during the French Socialist Party (PS) primaries. These debates saw Martine Aubry, an advocate of phasing out nuclear power, go head-to-head with François Hollande, who favoured abandoning the “all-nuclear solution”. Media interest in the issue visibly peaked again in November 2011, with 102 articles devoted to nuclear power – an average of more than

1. Philippe Blanchard, “Les médias et l’agenda de l’électronucléaire en France. 1970-2000”, 411. More generally, the conclusion of Blanchard’s thesis provides a succinct outline of the major stages in the process which saw nuclear power placed on France’s political agenda between 1970 and 2005.

2. Based on an analysis of anti-nuclear movements as they were covered in the media, Sven Hutter recently published an indicator of the extent of mobilisation in eleven countries: Sven Hutter, “The protest politics of nuclear energy, 1975 to 2011”, in Wolfgang C. Müller, Paul W. Thurner (eds), *Phasing-out and Phasing-in. The Comparative Politics and Policies of Nuclear Energy in Europe* (Oxford: Oxford University Press, 2014).

3. P. Blanchard, “Les médias et l’agenda de l’électronucléaire en France. 1970-2000”, 402.

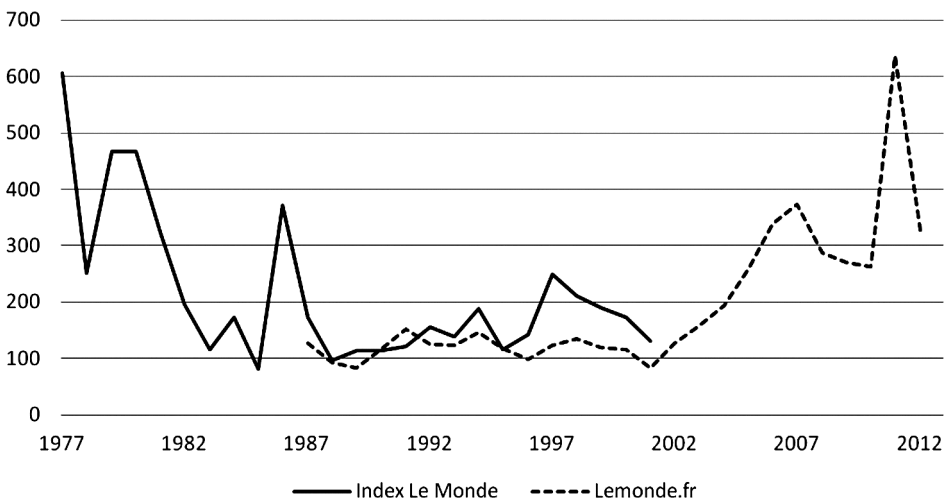
4. Olivier Baisnée, “Publiciser le risque nucléaire. La polémique autour de la conduite de rejets en mer de l’usine de la Hague”, *Politix*, 14(54), 2001, 157-81.

5. The decision taken by Nicolas Sarkozy and Jean-Louis Borloo not to include nuclear power among the issues debated at the Grenelle environment forum also paradoxically increased media exposure of the issue in 2007, insofar as this decision was heavily criticised by environmental associations. The increase in attention given to energy-related issues in the 2008 municipal election campaigns and in the 2009 campaigns for the European elections (reducing consumption, diversifying the energy mix) can also be viewed as responsible for the relatively extensive media coverage of nuclear power between 2008 and 2010.

three a day. The battle between the two candidates coincided with the turbulent conclusion of the programmatic and electoral negotiations between the EELV and the PS. Whilst this debate raged, the French president and members of the presidential majority, along with several pro-nuclear interest groups, also broached the issue in order to distinguish their own views from those expressed by the PS and the EELV. Media interest in the issue finally began to wane in December 2011, but remained relatively sustained until spring 2012.

A comparison of the media exposure of nuclear power during the 2007 presidential election campaign and that of the same campaign five years later confirms that the latter was exceptional in nature. Between September 2011 and April 2012, the number of articles devoted to nuclear power was almost 80% greater than that recorded during the same period in 2006-2007. From this perspective, the pivotal moment where media coverage of the issue is concerned was November 2011, when there were three times more articles written about the nuclear issue than in November 2006. In the months which followed, media exposure remained higher than it had been in 2006-2007. The tensions between the EELV and the PS in fact opened a window of opportunity for the unprecedented politicisation of the nuclear issue.

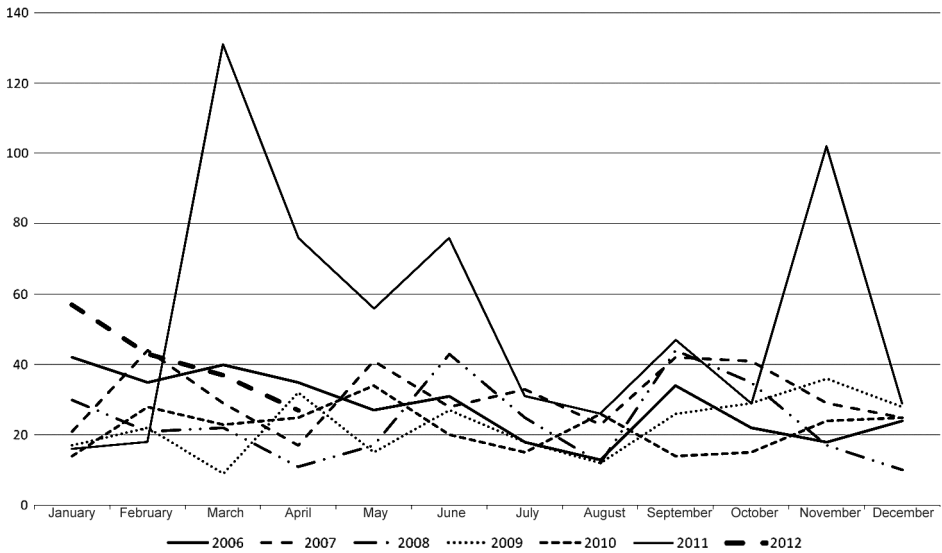
Figure 4. The number of articles related to nuclear energy published in *Le Monde*¹



Le Monde index Lemonde.fr

1. In order to measure the media coverage of nuclear energy in *Le Monde*, we used three different sources. Between 1977 and 2001, the articles related to nuclear energy were identified using *Le Monde's* annual index. Publication of this index ceased in 2001. As a result, we used the Factiva database to access the articles published in *Le Monde* between 1995 and 2008. Today, *Le Monde* is no longer accessible in this database: consequently, we used a third source – the search engine <http://www.lemonde.fr> (the data were extracted in February 2013). As the graph indicates, the number of relevant articles varied according to the source used (electronic or printed). However, the trends depicted are similar, making it possible to reliably conclude that media coverage of the issue between 1977 and 2012 did in fact broadly evolve as shown, even if comparing levels of media attention to the issue at the beginning and end of the period in question must be undertaken with caution.

Figure 5. Number of articles including the words “energy” and “nuclear” published in *Le Monde* (January 2006–April 2012)



Unprecedented politicisation

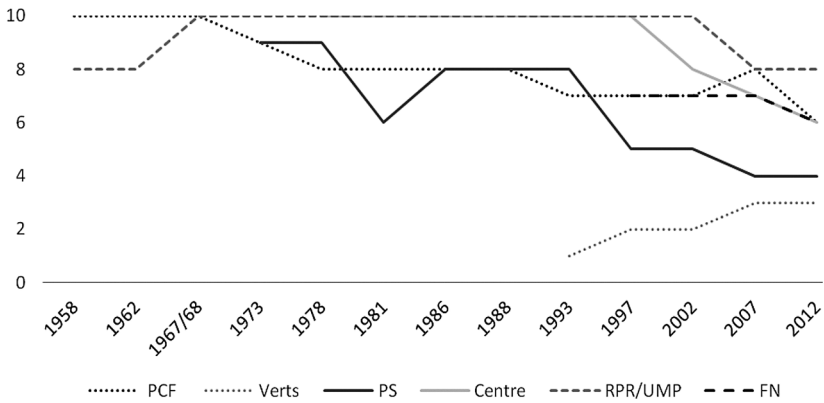
In 2012, for the first time since the inauguration of the Fifth Republic, nuclear energy policy featured among the major issues debated during a national election campaign. For a long time, nuclear policy had not been politicised – in other words, it was not an issue on which the major political parties had visible differences of opinion.¹ Indeed, looking back over France’s national election campaigns and analysing the programmes of the country’s political parties clearly demonstrates that despite the vocal and widespread protests in civil society towards the end of the 1970s, the major parties remained steadfast in their pro-nuclear stance. As part of a project comparing the choices of nuclear policy in Western Europe,² we systematically coded the positions enshrined in each programme from 1958 onwards on a scale from 0 (no nuclear power and/or the immediate decommissioning of nuclear power plants) to 10 (ambitious programme for the development of nuclear power). The positions occupied on this scale by the main French political parties, shown in Figure 6, reveal the broad consensus which has long reigned in France concerning the issue of nuclear energy.

Between 1958 and 1988, all the political parties, with a single exception (PS in 1981) maintained a clearly pro-nuclear stance. The consensus among the country’s major parties and the fact nuclear energy policy was largely absent from party programmes³ are testament to the fact that the issue was not politicised. This lack of politicisation can be explained, first,

1. Dorothy Nelkin, Michael Pollack, *The Atom Besieged. Extraparliamentary Dissent in France and Germany* (Cambridge: MIT Press, 1981); Herbert Kitschelt, “Political opportunity structures and political protest: anti-nuclear movements in four democracies”, *British Journal of Political Science*, 16(1), 1986, 57-85; Dieter Rucht, “The anti-nuclear power movement and the state in France”, in Helena Flam (ed.), *States and Anti-Nuclear Movements* (Edinburgh: Edinburgh University Press, 1994), 129-62; Yannick Barthe, *Le pouvoir d’indécision. La mise en politique des déchets nucléaires* (Paris: Economica, 2006).

2. W. C. Müller, P. W. Thurner (eds), *Phasing-out and Phasing-in*.

3. Sylvain Brouard, Isabelle Guinaudeau, “High profile policy and low salient politics: nuclear energy policy in France”, in W. C. Müller, P. W. Thurner (eds), *Phasing-out and Phasing-in*.

Figure 6. Position held by France's political parties concerning nuclear energy (1958-2012)

by the key preferences of the parties, whose political projects meant that, to a greater or lesser extent, they were predisposed to support the production of nuclear energy; and second by strategic considerations. For historical reasons, parties in the Gaullist tradition and the Communist Party (PCF) were the political forces most in favour of nuclear power. It is also worth noting that both parties often made use of the same types of argument to champion the cause, pointing to the advantages of this technology in terms of well-being, employment, independence, and competitiveness.¹ The parties at the centre of the political spectrum, the majority of which were absorbed by the UDF from 1978 onwards, also actively supported the development of nuclear energy, doing so with particular fervour under the presidency of Valéry Giscard d'Estaing, between 1974 and 1981. In more general terms, the parties in power avoided challenging² a programme which was crucial for the country's electricity supply³ and in which large sums had been invested.⁴

The PS was not historically or ideologically predisposed to promote nuclear energy in the same way as the communists, the Gaullists or the centrists. On the contrary, its links with the largely anti-nuclear trade union CFDT⁵ compelled it to challenge the energy policy decisions made in the 1960s and 1970s. In fact, prior to the foundation of the Green Party, the stance most critical of nuclear power was that of the socialists in 1981: whilst not explicitly calling pro-nuclear energy policy into question, François Mitterrand did table a number of proposals in order to respond to the concerns of the anti-nuclear movement, including shelving plans to build a nuclear power plant in Plogoff.⁶ Nonetheless, nuclear power was

1. Gabrielle Hecht, *Le rayonnement de la France. Énergie nucléaire et identité nationale après la seconde guerre mondiale* (Paris: La Découverte, 2004).

2. The refusal to include nuclear power on the list of issues discussed during the Grenelle environment forum (a list which nevertheless claimed to be exhaustive) is a further indication of this desire not to open the debate on how far France's nuclear programme was justified.

3. Since 1973, the increase in the amount of electricity produced in France (+314%) was almost entirely due to the production of nuclear electricity, which today is close to 400 TWh a year.

4. According to a recent assessment by the Court of Auditors, since the creation of the Atomic Energy Commission in 1945, and the decision to commence the production of nuclear electricity, investment in the sector has reached 188 billion euros: cf. <<http://www.ccomptes.fr/Publications/Publications/Les-couts-de-la-filiere-electro-nucleaire>>.

5. Philippe Garraud, "Politique électro-nucléaire et mobilisation: la tentative de constitution d'un enjeu", *Revue française de science politique*, 29(3), 1979, 448-74; Dorothy Nelkin, Michael Pollak, "The political parties and the nuclear energy debate in France and Germany", *Comparative Politics*, 12(2), 1980, 127-41.

6. As a reminder, Mitterrand's proposals were as follows: increased monitoring of nuclear power stations, limiting the nuclear programme to the power plants under construction whilst the country delivered its verdict on the

not a particularly politicised issue during the 1981 election campaign and the left's arrival in power did not prompt any wholesale challenge to French nuclear energy policy. The Plogoff nuclear power plant was the only one whose construction was cancelled and, following a debate on energy held during the second semester of 1981, the country's nuclear programme continued to grow.¹ This continuity can undoubtedly be explained by the conservative nature of previous policy decisions and the amount of money which had already been invested in the development of nuclear energy. However, it was also a result of the PS's need to retain the support of the PCF, staunch advocates of nuclear power.

This situation continued until 1993: no political party opposed to nuclear power obtained more than 3% of the vote in legislative elections and the PCF remained the favoured coalition partner of the PS. However, the first electoral victories of the pro-environment parties and the continued decline of the PCF radically altered the state of play: the PS was now forced to accommodate the Greens in its proposals. As far as this development is concerned, Figure 6 clearly demonstrates a shift in the PS's programme in 1997 when, for the first time in its history, it signed an agreement to govern with the Greens. However, despite the inclusion of Green ministers in the government, France's nuclear policy was far from abandoned: although the Jospin government decided to halt the construction of the Superphoenix plant in 1988 and refused to authorise any future construction projects, it nevertheless confirmed the entry into service of the Civaux reactors in 1997 and their Chooz counterparts in 2002, as well as connecting both to the national grid.

Common ground between the Greens and the socialists was scarce, as demonstrated by their legislative proposals. In 2007, the Greens committed to phasing out nuclear power by 2030, whilst the PS presented nuclear energy as "a high-quality sector" and a crucial weapon in the fight against global warming. However, the party simultaneously promised to "reduce the share of nuclear energy in France's final energy consumption by increasing the share of renewables in this consumption to 20% by 2020 and to 50% in the longer term". Similar discrepancies between the two parties' programmes were evident in 2012, with the Greens promising to orchestrate the "total phaseout of nuclear energy within 20 years" and the PS position similar to that adopted in 2007.² The centre-right UMP's position was unchanged, remaining committed to "consolidating the production of nuclear energy".³

programme via referendum, and the framework law which guaranteed that citizens would be able to hold their leaders accountable, particularly on security issues related to nuclear energy.

1. The decision to reduce the number of nuclear power plants under construction was more a reflection of an initial overestimation of future increases in France's electricity needs than it was a political choice on the part of the PS: see Christian Bataille, Robert Galley, "Rapport sur l'aval du cycle nucléaire. Tome II: les coûts de production de l'électricité", Rapport de l'Office parlementaire d'évaluation des choix scientifiques et technologiques 1359, 1999, available online <http://www.assemblee-nationale.fr/11/rap-off/r1359-02.asp#P23_776>. See also François Guillaumat-Taillet, "La France et l'énergie nucléaire: réflexions sur des choix", *Revue de l'OFCE*, 19(1), 1987, 189-227.

2. In 2012, the PS proposed increasing "the share of renewable energies in order to reduce dependence on nuclear energy" to the extent that "the share of nuclear energy in the production of electricity would fall from 75% to 50% by 2025", in the words of the party's candidate François Hollande. The PS also promised a debate on energy policy, as well as "a moratorium on the growth of nuclear capacity" by "the conclusion of that debate". According to the PS candidate, in concrete terms that meant "the completion of the Flamanville site" and the shelving of the Penly project (<http://francoishollande.fr/actualites/contre-le-projet-epr-de-penly>, accessed 3 March 2012), "at least during the next five-year term" (<http://www.media-part.fr/journal/france/150212/nucleaire-recul-de-francois-hollande-sur-l-epr-de-penly>, accessed 3 March 2012). The PS also committed to closing the Fessenheim plant.

3. The UMP's 2007 programme emphasised the comparative benefits of the French nuclear programme, and its advantages in terms of reducing greenhouse gases, whilst at the same time recognising "the right of citizens to access all useful documents regarding the risks of nuclear energy and the methods used in France to prevent

Against this backdrop, the unprecedented politicisation of nuclear power in 2011-2012 does not appear to have stemmed so much from a change in the parties' positions on the issue as from the revitalisation of the communication strategies used to present the issue to voters. Until 1988, nuclear policy was an issue on which all parties broadly agreed. Subsequently a matter of increasing controversy, it was avoided for strategic reasons. In 2012, the UMP decided to underscore the differences between its own views on nuclear power and those held by the PS and the EELV.¹ First and foremost, this strategy allowed the party to draw attention to the differences of opinion both within the PS-EELV coalition and the PS itself. Such disagreements led to a public debate between the two parties, before and after the coalition agreement was signed, particularly concerning the issue of Mox fuel. To use a metaphor coined by Hylligus and Shields, all that remained for the UMP to do was drive deeper the wedge which already divided the centre-left coalition.² With this strategy, the UMP also sought to defend the decisions made by Jacques Chirac and Nicolas Sarkozy to build new reactors in Flamanville (in 2005) and Penly (in 2009). The strategy saw them defend these decisions by reframing the issue of nuclear power in terms of competitiveness, jobs, purchasing power, and the reduction of greenhouse gases in order to counterbalance the risk-focused arguments put forward by the opposition.

The successful “reframing” of the issue by the pro-nuclear camp

Understanding the way in which the politicisation and the extensive media coverage of the nuclear issue influenced the climate of opinion requires us to conduct a more detailed analysis of the way in which this issue was presented in the media in the year 2011-2012. Several studies have already suggested that the way in which issues are framed has a significant impact on the climate of opinion,³ particularly where nuclear power is concerned.⁴ According to Entman, “[T]o frame is to select some aspects of a perceived reality and make them more prominent [...], in such a way as to promote a particular problem definition, causal interpretation, moral evaluation and/or recommendation”.⁵

these risks”. The 2012 programme maintained this position, although in less detail, citing support of the nuclear industry as an element within sustainable development policy and the advantages of “safe, cheaper energy”.

1. This was also the case for Jean-Luc Mélenchon's Parti de Gauche, which advocated a wholesale re-evaluation of French energy policy choices following an “immediate public national debate” examining all available alternatives “including the phasing out of nuclear power and maintaining a secure, state-owned nuclear industry”. Once this debate had been held, Mélenchon's programme promised that a referendum would be organised to decide between these possibilities.

2. D. Sunshine Hillygus, Todd G. Shields, *The Persuadable Voter. Wedge Issues in Presidential Campaigns* (Princeton: Princeton University Press, 2009).

3. Frank R. Baumgartner *et al.*, *The Decline of the Death Penalty and the Discovery of Innocence* (Cambridge: Cambridge University Press, 2008).

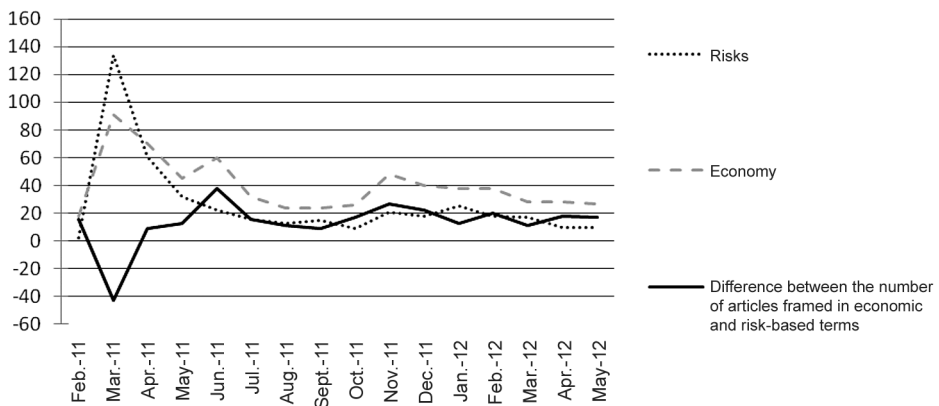
4. See Frank R. Baumgartner, Bryan D. Jones, *Agendas and Instability in American Politics* (Chicago: The University of Chicago Press, 2009); and W. A. Gamson, A. Modigliani, “Media discourse and public opinion on nuclear power...”. For material on the French case, see in particular the study by Chateauraynaud, which demonstrates that using the climate argument to justify relaunching nuclear programmes across Europe in the 1990s and 2000s resonated particularly strongly with voters: François Chateauraynaud, “Sociologie argumentative et dynamique des controverses: l'exemple de l'argument climatique dans la relance de l'énergie nucléaire en Europe”, *A contrario*, 16, 2011, 131-50. Regarding the increasingly complex nature of the nuclear issue, see Blanchard, “Les médias et l'agenda de l'électronucléaire en France. 1970-2000”. For the importance of the technical, rather than political, framing of the issue of nuclear waste, see Y. Barthe, *Le pouvoir d'indécision*.

5. Robert M. Entman, “Framing: toward clarification of a fractured paradigm”, *Journal of Communication*, 43(4), 1993, 51-8.

The aspects of nuclear energy given particular prominence when the issue was politicised and placed under the media spotlight thus constitute an important parameter which must be taken into account in order to understand the decline in opposition to nuclear power seen in 2011-2012. The politicisation of the nuclear issue – a strategy implemented by Nicolas Sarkozy, the members of the presidential majority, and champions of the nuclear cause – manifested itself as a change in the framing of the issue: whilst the weeks which immediately followed the Fukushima disaster saw a risk-focused frame prevail, the counter-offensive mounted by the pro-nuclear camp saw this frame ousted in favour of one which focused instead on the economic advantages of nuclear power.¹

To highlight this development in the framing of the nuclear issue, we conducted a keyword search in the LexisNexis database. This allowed us to target articles published in *Le Monde* which framed the issue of nuclear power in terms of risk on the one hand, and in economic and industrial terms on the other.² Figure 7 illustrates the way in which the priority given to each frame evolved over time; a process evaluated by looking at the number of published articles per month which mobilised each frame between February 2011 and May 2012, as well as by calculating the difference between the number of published articles adopting each frame.

Graph 7. The number of articles published per month on nuclear energy framing the issue in either economic or risk-based terms



The first period when nuclear energy was placed in the media spotlight was during the Fukushima disaster, focusing on its effects on Japan and the reactions of the authorities in

1. These two frames overlap to a large extent with two of those identified by W. Gamson, A. Modigliani in “Media discourse and public opinion on nuclear power...”, namely “progress” and “runaway”, frames which dominate the American media agenda on the nuclear issue.

2. The articles on nuclear power were targeted by selecting those which contained the words “energy” and “nuclear”. Among these articles, those mobilising an economic frame were identified by selecting those which contained one of the following words or phrases: “employment”, “economy”, “competitiveness”, “unemployment”, “electricity prices”, “trade balance”, “surplus”, “deficit”, “oil”, or “energy independence”. The articles on nuclear energy tackling the subject from a risk perspective were identified by searching for articles in which the following terms occurred at least three times: “Fukushima”, “Chernobyl”, “risk”, “disaster”, “incident”, “accident”, “waste”, “danger”, “health”, or “pollution”. The decision here to select only articles in which these terms were used a minimum of three times stemmed from our observation that almost all articles on the subject referred to the Fukushima disaster, even if only as a hook with which to subsequently delve into the advantages of nuclear power.

both France and other European countries. The high visibility of the issue of nuclear power in the media was accompanied by the domination of a frame which focused on risk and advocated the phasing out of nuclear power. The weeks which followed the Fukushima disaster were marked in particular by the impressive results obtained by the EELV in the March 2011 cantonal elections¹ and the staging of the Green Party primary. In this context, it was the articles framed in terms of risk which dominated the press, with 43 more of these articles published than those framed in economic terms. However, whilst risk-focused articles were perhaps more common, right from the outset the media coverage of Fukushima and its aftermath saw nuclear power also framed in economic terms; framing which was inherently more pro-nuclear in nature. Politicians and the media rallied in defence of the French nuclear industry, not only underlining the efforts made to guarantee the safety of nuclear power plants, but also repeatedly emphasising the advantages of the technology. In particular, Nathalie Kosciusko-Morizet, Minister of the Environment, Eric Besson, Minister of Industry and Energy, and Gérard Longuet, Minister of Defence, accused the anti-nuclear camp of “politically exploiting” the Fukushima disaster in order to strengthen their own position and defended nuclear power, arguing that it allowed France to reduce its consumption of fossil fuels, become more energy independent and produce low-cost electricity for its citizens.² Thus, the frequency with which each frame appeared in the press became equally balanced in April 2011, before the economic frame in turn gained the upper hand between May and June of that year (with 38 more articles choosing to frame the issue in economic terms). Over these three months, the fear sparked by events in Japan gave way to questions regarding the political, economic, and energy-related implications of the Fukushima disaster: the price of electricity, the potential consequences of a transition to a new form of energy for the quality of life and well-being of French citizens, its implications for the energy companies EDF and AREVA, and its financial impact as a whole. Debates on these issues often cited the stumbling blocks encountered in Germany, where a possible phase-out of nuclear power was under discussion at the time. These debates came to a head in June, when Nicolas Sarkozy announced that one billion Euros had been allocated to “the nuclear power of the future”.

The second phase of media coverage played out against a different backdrop; this one marked by the politicisation of nuclear policy choices: first between the EELV and the PS, then between these two parties and the presidential majority. In this phase of media coverage, the positions of the political actors were at the very heart of the debate, particularly the divisions on the left.³ All candidates and political parties ultimately expressed their position on the nuclear issue – a position sometimes complex in nature. At the same time, the pro-nuclear

1. Simon Labouret, “Europe Écologie-Les Verts: confirmation d'un nouvel élan”, *Revue politique et parlementaire*, 1059, 2011, 65-71.

2. See, for example: Arnaud Leparmentier, “La crise du nucléaire japonaise relance le débat sur l'atome en France”, *Le Monde*, 15 March 2011; Pierre Jaxel-Truer, Arnaud Leparmentier, “Paris décidé à sauver la filière nucléaire française”, *Le Monde*, 19 March 2011; Patrick Roger, “La droite fait bloc pour défendre la filière nationale”, *Le Monde*, 6 April 2011; “M. Sarkozy pour le nucléaire et contre la décroissance”, *Le Monde*, 7 April 2011.

3. Ariane Chemin, “Nicolas Sarkozy fait la leçon à François Hollande”, *Le Monde*, 22 October 2011; Sophie Landrin, “L'UMP en campagne avec 27 propositions ‘vertes’”, *Le Monde*, 18 Novembre 2011; Patrick Roger, “L'UMP défend le ‘produire plus, dépenser moins’”, *Le Monde*, 23 Novembre 2011; “L'atome, arme de campagne pour M. Sarkozy”, front page of *Le Monde*, 26 Novembre 2011; Vanessa Schneider, “M. Sarkozy fait du nucléaire un axe de sa campagne”, *Le Monde*, 26 Novembre 2011. A number of debates saw members of the majority pitted against the environmentalist parties, one example being the debate between Eric Besson and Eva Joly in the television programme “Expliquez vous!” on I-Télé and Europe 1, on 30 November 2011.

interest groups pulled out all the stops to promote the French nuclear industry, arguing that phasing out nuclear power would be unrealistic, that it would see many made redundant, and that it would be an extremely costly process.¹ This second phase of media coverage of the nuclear issue manifested itself as a sharp increase in the visibility of the economic frame, beginning in November 2011. In addition to the arguments focusing on the perceived advantages of nuclear energy (the cost of electricity, energy independence, no CO₂ emissions), it was at this point that a new line of argument began to emerge. This time, the champions of nuclear power focused on its social and industrial benefits, the jobs created by the industry, the knowledge and expertise of French power companies, and the financial losses which would be incurred if the construction of the Flamanville EPR were brought to a halt.² Some of these arguments were put across by the representatives of people employed in the sector, and by trade union organisations in particular.³ This economic framing of the issue would remain present in the media throughout the election campaign, and right up until the televised debate between the two rounds of voting, which pitted Nicolas Sarkozy against François Hollande and gave the outgoing president the opportunity to confirm his pro-nuclear stance. Thus the mediatisation and politicisation of the nuclear issue were accompanied by a “reframing” of this issue in the media as a whole. From April 2011 the risk frame began to disappear to be replaced by the economic frame, which dominated the election campaign from November 2011.

An empirical analysis of a campaign effect: the factors behind the changes in citizens' opinions of nuclear power

We have demonstrated that media coverage of the nuclear issue reached an all-time high during the 2012 election campaign. Such extensive coverage was not solely the result of the Fukushima disaster, but also the consequence of the unprecedented party politicisation of nuclear power – a process which mobilised frames diametrically opposed to those associated with the Japanese disaster. In our view, this economic “reframing” of the nuclear issue in the discourse which appeared in both the political and media arena, together with the exceptionally high levels of exposure it received, explains the changes seen in French public opinion concerning the nuclear issue. In order to test the validity of this explanation, we will adopt two complementary approaches. First, we will present the responses to an open question concerning the reasons for adopting a particular stance on nuclear energy. Second, we will analyse the factors behind anti-nuclear sentiment by conducting logistical regression analyses in order to determine whether the decline of

1. An example of this line of argument can be found in an interview given by Henri Proglio, CEO of EDF, to the readers of *Le Parisien* (“Sortie du nucléaire: ‘Un million d’emplois mis en péril’ selon le PDG d’EDF”, *Le Parisien*, 8 November 2011). See also: “Selon le patron du CEA, sans le nucléaire, la facture exploserait”, *Le Monde*, 23 September 2011; “L’empire contre-attaque”, *Le Monde*, 12 November 2011.

2. “La filière va rester un gisement d’emplois considérable”, *Le Monde*, 26 November 2011; Vanessa Schneider, “Le ‘progress’ contre ‘le retour à la bougie’”, *Le Monde*, 27 November 2011; Anne-Sophie Mercier, “Pour Nicolas Sarkozy, fermer le site serait ‘un coup politique risqué’”, *Le Monde*, 3 January 2012; “Pourquoi la France fait le choix stratégique de l’indépendance énergétique”, *Le Monde*, 5 January 2012; “L’arrêt du nucléaire coûterait cher aux Français en emplois”, *Le Monde* editorial, 5 January 2012; “Privilégier les énergies renouvelables pénaliserait notre compétitivité”, *Le Monde*, 7 February 2012; Philippe Ricard, “Le nucléaire, future énergie ‘verte’ en Europe?”, *Le Monde*, 15 April 2012.

3. Rémi Barroux, “Les fédérations syndicales de l’énergie soulagées qu’aucune fermeture de centrale n’ait été demandée”, *Le Monde*, 5 January 2012.

such sentiment affected the various sections of the electorate in the same ways that our explanatory hypotheses (media exposure, politicisation and framing) would lead us to expect.

Competing frames surrounding pro- or anti-nuclear sentiment among the French electorate

The wave of TriElec surveys conducted in December 2011 incorporated the following questions in order to build up a picture of the key considerations in participants' minds concerning nuclear energy at the time the survey was conducted: "Are you totally in favour, mostly in favour, mostly against, or totally against the production of energy by nuclear power stations? Totally in favour; Mostly in favour; Mostly against; Totally against; I don't know. Why?"

Analysing the responses to this open question makes it possible to highlight the existence of several cognitive frames in relation to the perception of the nuclear issue; their potentially contradictory nature; and their significance in forming individuals' opinions on whether or not the use of nuclear power stations was justified. In this context, it is in no way surprising that the political strategies that parties adopted to emphasise certain frames over others affected the nature of opinions on nuclear power.

Table 1. Reasons cited as justification for opinions expressed on nuclear power

Nuclear energy...	Totally in favour	Mostly in favour	Mostly against	Totally against	Total
... is dangerous	5	7	75	78	36
... produces unmanageable waste	2	1	9	12	5
... can or must be replaced or supplemented by other sources of energy	6	15	22	14	16
... has no alternatives	56	56	6	3	31
... is good for the economy	33	26	1	1	16
... guarantees our independence	9	6	0	0	4
... does not pollute	21	13	0	1	8

Sources: TNS Sofres-TriElec surveys, December 2011.

An analysis of the various registers of argument summarised by Table 1 confirms the coexistence of and competition between several considerations relating to different frames. Among the reasons cited in order to justify the positions expressed on nuclear energy, the most commonly cited consideration (36%) was indisputably negative in tone and focused on the risks attached to the production of nuclear energy. The lack of an alternative (31%) was the second most common reason given. Considerations which were positive in nature ("good for the economy", "guarantees our independence", "does not pollute"), cited in 28% of cases, came only just ahead of the argument on the role to be played by other forms of energy.

Unsurprisingly, these viewpoints were not equally prevalent across all groups of survey participants and their distribution was strongly linked to the overall position on nuclear power expressed. Those against the technology highlighted the dangers of atomic energy (over 75% of respondents) and mentioned – with frequent reference to the Fukushima disaster – the safety of nuclear power plants, the risks of a disaster, and the consequences of that disaster

in terms of the environment, health and pollution. To a much lesser extent, the anti-nuclear camp referred either to viable alternatives or those to be developed (around 15-20%) as well as the problem of nuclear waste (around 10%). Those in favour of nuclear power emphasised first and foremost the lack of alternatives available (“we’re not going back to candles”), its comparative qualities, or the difficulties linked to phasing it out. Economic advantages were then cited as factors justifying support for the industry (around 30%): the low cost of nuclear electricity, the numerous jobs supported by the sector, the export opportunities it allowed, and so on. Nuclear energy was also presented as clean energy, neither polluting nor contributing to climate change. Finally, the energy independence which France enjoys thanks to nuclear power was often cited by those fighting its corner.¹

Thus, each frame tends to go hand in hand with a particular stance, and only a minority of respondents expressed arguments which were directly contradictory. For example, only 8% of those in favour of nuclear power stated that it was a safe form of energy and only a minute proportion of this group believed that nuclear waste was in no way problematic. Conversely, very few participants from the anti-nuclear camp referred to the cost of nuclear power in relation to other sources of energy. The lines of argument put forward by the two camps each mobilised different methods of framing the issue rather than directly contradicting one other. However, as is the case with the call for research into alternative forms of energy, certain arguments regarding nuclear power tended to garner the support of both camps, and individuals could deem several divergent arguments valid. Thus, nuclear power could be viewed as both risky and economical, and the overall position expressed in such cases was determined by the weight given to each argument.² It is most likely for this reason that survey participants chiefly avoided the extremes of the scale when expressing their opinion on the generation of electricity by nuclear power plants (see Figure 1).

The pivotal role played by the framing of nuclear issues in the formation of opinion, combined with the ambivalent stance expressed by the majority of individuals – willing to contemplate several frames with contradictory implications – confirms that both political and media discourse, as well as the frames³ that these arguments mobilise, can significantly influence the views of the electorate. This would seem to be consistent with the mechanism according to which “the debate of the elites forms public opinion by formatting public problems and controlling the intensity of citizens’ exposure to the problems selected for

1. Our results are consistent with those obtained around ten years ago by Mathieu Brugidou when he analysed an EDF survey: Mathieu Brugidou, “Argumentation and values: an analysis of ordinary political competence via an open-ended question”, *International Journal of Public Opinion Research*, 15(4), 2003, 413-30. By identifying the forms of reasoning which typically underpinned the positions expressed by those questioned on whether closing nuclear power plants was an appropriate initiative, Brugidou demonstrated that the implicit mobilisation of certain values, such as security or progress, went hand in hand with the adoption of certain positions and that these values and positions tended to reflect socio-demographic characteristics.

2. It is this type of trade-off between seemingly opposing arguments which explains the fact that 15% of those who wished to replace old power stations with new ones stated elsewhere that they were opposed to nuclear energy, or the fact that 38% of those who did not wish to replace old power plants claimed that they nevertheless supported the production of nuclear energy. (TNS Sofres-TriElec survey, December 2011). To put it simply, it is possible to oppose nuclear energy in absolute terms, whilst at the same time viewing the issue pragmatically and believing that it is necessary in the short term to replace end-of-life plants. In the same way, it is possible to support nuclear energy overall, whilst at the same time believing that the construction of new power plants would be dangerous, costly, or pointless.

3. See J. R. Zaller, S. Feldman, “A simple theory of the survey response...”, 608: “News reports can prime certain ideas, thereby making them more accessible for use in formulating attitude statements on related subjects.”

discussion”.¹ The frames mobilised in relation to the generation of nuclear electricity are therefore not necessarily mutually exclusive: it is the hierarchy into which these different frames are organised (or their relative prominence) which ultimately explains opinions and the way they develop. As a result, the priority given by those in favour of nuclear power to both economic framing and the argument emphasising the lack of alternatives can be viewed as a consequence of the frame which dominated the media during the second phase of coverage outlined above. These observations support the notion that the successful reframing of the nuclear issue over the course of the campaign is key to explaining the rapid decline of opposition to nuclear energy.

Factors behind the decline in anti-nuclear sentiment among the French electorate

Whatever the case, an analysis of the reasoning which underpinned the positions on nuclear energy expressed by survey participants does not yield any information regarding the changes in these positions seen over the course of the election campaign. And yet, if the decline in anti-nuclear sentiment was a campaign effect resulting from intense media coverage, unprecedented politicisation, and the economic reframing of the nuclear issue, changes in individual opinions must necessarily be explained by these three phenomena. Four separate hypotheses can be formulated in order to test the implications of our overall explanatory framework regarding opposition to nuclear power.

The hypothesis of media exposure

Election campaigns can generate a “priming effect”. In other words they can influence the perceived prominence of an issue and certain aspects of that issue by making available related information (accessibility²) and by drawing public attention to certain aspects over others (placing it on the agenda³). According to Chong and Druckman, “when a mass communication places attention on an issue, we expect that issue to receive greater weight via changes in its accessibility and applicability”.⁴ From this perspective, two different varieties of media effect can be identified. The first relates to the significance of media exposure: in this approach, the impact of the media coverage of the nuclear issue should be greater among the citizens most exposed to relevant information. The second concerns the type of information to which individuals are exposed. The issue here is therefore one of differences in content. Based on this hypothesis, the decline in opposition to nuclear power ought to vary according to the type of media used to obtain information.

In order to test out these two dimensions of the media exposure hypothesis, we constructed a synthetic variable which combined the following:

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1. Jacques Gerstlé, “La réactivité aux préférences collectives et l'imputabilité de l'action publique”, *Revue française de science politique*, 53(6), 2003, 859-85 (871).
 2. Shanto Iyengar, Donald R. Kinder, *News That Matters. Television and American Public Opinion* (Chicago: The University of Chicago Press, 1987).
 3. Joanne M. Miller, Jon Krosnick, “News media impact on the ingredients of presidential evaluations: politically knowledgeable citizens are guided by a trusted source”, *American Journal of Political Science*, 44(2), 2000, 295-309.
 4. Dennis Chong, James N. Druckman, “Framing theory”, *Annual Review of Political Science*, 10, 2007, 103-26 (115).

- the frequency of exposure to political news: given that television was France’s primary vehicle of information during the 2012 election campaign,¹ we drew a distinction between those who regularly watched the television news (6 or 7 days a week),² occasional viewers (between 1 and 5 days a week), and those who did not watch the television news;³
- the channel watched: here we drew a distinction between TF1 viewers, those who watched France 2, and those who preferred 24-hour news channels. These three categories covered 85% of all television viewers. We then developed a residual category bringing together those who viewed other channels.

The hypothesis of interest in the campaign

Whatever the nature of the media practices in which citizens engage, the information broadcast during an election campaign does not have the same effect on every individual. Exposure to information does not necessarily mean it will be received or appropriated: individuals can be more or less active in their consumption of information. If this hypothesis is followed to its logical conclusion, interest in the election campaign should modulate the extent to which information is received and the effect it has on an individual citizen. Furthermore, the decline of anti-nuclear sentiment should be more pronounced among the citizens most interested in the election campaign. The variable “interest in the campaign” is a dichotomous variable with a value of 1 if respondents state that they are either fairly or very interested in the 2012 campaign and a value of 0 if they say they have little or no interest in that campaign.

The hypothesis of politicisation

When a party and its leaders politicise a particular issue, their aim is to make positions on this issue both understandable and acceptable. According to Zaller, “the impact of people’s value predispositions always depends on whether citizens possess the contextual information needed to translate their values into support for particular policies or candidates”.⁴ Consequently, the politicisation of an issue is likely to affect first and foremost party supporters for whom the party’s position on this issue is not clear and/or distinctive. Indeed, a large number of studies have demonstrated that individuals respond more readily to the arguments expressed by the party or parties to whom they feel closest. Moreover, individuals tend to follow more closely and be more receptive to the arguments of parties with whom they expect to agree on the greatest number of points, and avoid as far as possible exposure to the arguments of parties whose stance is furthest away from their own.⁵ It is therefore easier for the supporters of these parties to adjust their position on a given issue in order to bring it in line with that expressed by the party to whom they are closest.⁶ Based on this logic, we

1. Sylvain Brouard, Florent Gougou, Isabelle Guinaudeau, Simon Persico, “Les Français et le nucléaire pendant la campagne présidentielle de 2012”, in O. Duhamel, É. Lecerf (eds), *L’État de l’opinion 2013*, 117-34.

2. Given the small number of respondents falling into the occasional viewer categories, we ultimately took the decision to place all occasional viewers in one and the same category. This decision did not affect the results of our analyses, but simply made them easier to present.

3. The indicator was constructed based on the number of days per week on which respondents claimed to watch the television news.

4. John R. Zaller, *The Nature and Origins of Mass Opinion* (New York: Cambridge University Press, 1992), 25.

5. Shanto Iyengar, Kyu S. Hahn, Jon A. Krosnick, John Walker, “Selective exposure to campaign communication: the rôle of anticipated agreement and issue public membership”, *The Journal of Politics*, 70(1), 2008, 186-200.

6. These arguments are discussed in further detail in Stefaan Walgrave, Jonas Lefevere, Anke Tresch, “The limits of issue ownership dynamics: the constraining effect of party preference”, *Journal of Elections, Public Opinion and Parties*, 24(1), 2014, 1-19.

would expect the decline in anti-nuclear sentiment to be sharper among UMP supporters and less marked among followers of the Parti de Gauche than for those who supported the PS, but that it would not specifically concern Green Party supporters. The variable of party proximity was used to test this hypothesis.¹

The hypothesis of reframing

Whilst the framing of an issue is likely to affect the position which individuals adopt on that issue,² this effect can vary according to the nature of the framing used:³ for example, the religious framing of the death penalty will resonate more or less strongly depending on whether the individuals targeted are more or less religious. As far as nuclear power is concerned, the economic framing of the issue should logically have a greater impact upon individuals who closely monitor the state of the economy than upon those focused on the environment or health. In order to test this hypothesis, we used the most significant problem variable and compared individuals whose primary concern was the economy (and its various forms) with the other respondents. More specifically, we assumed that the decline in opposition to nuclear power was more pronounced among the individuals most concerned about the state of the economy.

These four hypotheses were tested by completing a series of logistic regressions on a data file which merged together the five waves of TriElec surveys during which participants were questioned regarding their views on the production of nuclear energy (Table 2). These analyses aimed to assess the impact of party proximity, media practices, interest in the presidential election, and political focus, whilst at the same time controlling for the effect of key socio-demographic variables (gender, age, level of education and income⁴). Our dependent variable was opposition to nuclear energy. Its value was 1 when respondents declared that they were either mostly or totally against nuclear energy, and 0 when they stated they were either mostly or totally in favour of nuclear energy. In order to model the changes in these opinions over time, we also included linear interactions between the explanatory variables and the number of months which had passed since the first wave of the survey. Four successive models were evaluated: the first tested the hypothesis of politicisation; the second tested the hypothesis of media exposure; the third tested the hypothesis of interest in the presidential election and included socio-demographic variables; finally, the fourth of these models brought together all of the previous hypotheses, the hypothesis of reframing, and the socio-demographic variables.⁵

Model number 4, the most comprehensive of them all, did not reveal any major differences from what had already been seen in the first three models regarding the effect of the variables testing our four hypotheses. The results obtained were reliable, and consequently the discussion which follows relates chiefly to the results of model 4.

1. The voters closest to the Nouveau Centre and the Parti radical valoisien were grouped together in the UDI category.

2. Amos Tversky, Daniel Kahneman, "The framing of decisions and the psychology of choice", *Science*, 211(4481), 1981, 453-8; Daniel Kahneman, Amos Tversky, "Choices, values, and frames", *American Psychologist*, 39(4), 1984, 341-50.

3. Andreas R. T. Schuck, Claes H. de Vreese, "Reversed mobilization in referendum campaigns: how positive news framing can mobilize the skeptics", *International Journal of Press/Politics*, 14(1), 2009, 40-66.

4. The variable "income" presents deciles of income per consumption unit.

5. The interactions between the sociodemographic variables and "Time", which were not statistically significant, were omitted in model 4. Including these interactions did not significantly affect results.

Table 2. Factors behind the changes in opposition to nuclear energy (logistic regression)

		Opposition to nuclear energy			
		Model 1	Model 2	Model 3	Model 4
Time	Number of months	0.922**	0.927**	0.889*	1.004
Party proximity	EXG	2.143*			1.857
	PCF	0.786			0.858
	PG	0.669			0.747
	PS	Réf.			Réf.
	EELV	4.653**			4.264**
	MoDem	0.719			0.754
	UDI	0.315**			0.317*
	UMP	0.299**			0.287**
	FN	0.671			0.617
	No party	0.754			0.647*
	Other party	1.031			1.030
Proximity/ time	EXG	0.929			0.921
	PCF	0.981			0.951
	PG	1.158**			1.126*
	PS	Ref.			Ref.
	EELV	0.989			0.997
	MoDem	0.930			0.920
	UDI	0.908			0.928
	UMP	0.902**			0.924*
	FN	0.990			0.990
	No party	0.993			0.978
	Other party	0.990			0.982
Media practices	Regular TF1		0.910		0.949
	Regular France 2		0.682*		0.683*
	Regular news channel		0.612*		0.584*
	Regular other channel		0.511**		0.448**
	Occasional viewer		1.088		0.892
	Does not watch television		Ref.		Ref.
Practices/Time	Regular TF1		0.905**		0.921*
	Regular France 2		1.026		1.033
	Regular news channel		0.984		1.028
	Regular other channel		1.105*		1.163**

	Occasional viewer		0.951		0.981
	Does not watch television		Ref.		Ref.
Gender	Female			1.846**	2.200**
	Male			Ref.	Ref.
Gender/Time	Female			1.023	
	Male			Ref.	
Age	18-30			Ref.	Ref.
	31-45			0.837	1.117
	46-60			0.944	1.190
	61-75			0.701	1.067
	+ 76			0.505*	0.785
Age/Time	18-30			Ref.	Ref.
	31-45			1.044	
	46-60			1.034	
	61-75			1.037	
	+ 76			1.037	
Level of education	Primary			Ref.	Ref.
	Secondary			1.102	1.236*
	HE short course			1.199	1.388**
	HE long course			1.003	1.177
Level of education/Time	Primary			Ref.	Ref.
	Secondary			1.026	
	HE short course			1.049	
	HE long course			1.082	
Income	0-20			Ref.	Ref.
	20-50			0.802	0.768**
	50-75			0.614**	0.659**
	75-90			0.685*	0.674**
	90-100			0.583**	0.511**
Income/Time	0-20			Ref.	Ref.
	20-50			0.973	
	50-75			0.997	
	75-90			0.968	
	90-100			0.929	
Interest in election	Interested			1.002	1.029
	Not interested			Ref.	Ref.

Interest/Time	Interested			0.943*	0.923*
	Not interested			Ref.	Ref.
Focus	Debt				0.841
	Unemployment/employment				0.783
	Purchasing power				0.996
	Other economic issue				0.820
	Other issues				Ref.
Focus/Time	Debt				0.900*
	Unemployment/employment				0.987
	Purchasing power				0.948
	Other economic issue				0.978
	Other issues				Ref.
N		4871	4871	4871	4871
Number of surveys		5	5	5	5
Nagelkerke's R ²		0.175	0.037	0.092	0.241

NB: The models included a control for each wave of surveys. The levels of significance retained were * < 0.05 and ** < 0.01

From the outset, our analyses confirmed the movement of public opinion towards a pro-nuclear position over the course of the presidential campaign. In the first three models, which tested our hypotheses independently, the likelihood of being anti-nuclear rather than not adopting such a stance decreased by between 7 and 11% each month, all other things equal (odds ratios of between 0.889 and 0.927 for the Time variable). We can thus conclude that the likelihood of being against nuclear energy during the 2012 presidential election campaign had decreased significantly. However, in model 4, the Time variable was no longer statistically significant and no longer had any effect on opinion, with an odds ratio of 1.004. The changing levels of anti-nuclear sentiment seen over time are thus clearly explained by the variables specifically constructed to test our four hypotheses. At the same time, model 4 is undoubtedly that which has the greatest heuristic value (Nagelkerke's R² of 0.24).

In accordance with the media exposure hypothesis, the intensity and variety of media exposure at least partly explain the changes in levels of anti-nuclear sentiment seen during the presidential election campaign. Compared to the survey respondents who stated that they did not watch the television news, regular viewers of France 2, 24-hour news channels and other television channels were significantly less opposed to nuclear energy, all other things being equal. The viewers of each of France's various television channels thus displayed specific characteristics at the beginning of the presidential election campaign. The way in which the opinions held by each group of viewers changed over time also varied significantly depending on the group in question. The regular TF1 viewers were the only survey participants whose opposition to nuclear energy decreased significantly over the course of the election campaign: each month, the likelihood of an individual in this group expressing anti-nuclear sentiment decreased by around 8% (odds ratio of 0.921). Conversely, those who were regular viewers of channels other than TF1, France 2 and the 24-hour news channels developed increasingly anti-nuclear views in comparison with respondents who claimed not

to watch the television news: the odds ratio increased by 16% each month. Whether we look at the beginning or the end of the election campaign, the opinions held by the occasional viewers did not differ significantly from those of the respondents who claimed not to watch the television news. In accordance with the hypothesis of media exposure, significant changes in levels of anti-nuclear sentiment were seen solely among the television viewers most exposed to information (the regular viewers). However, these levels of opposition evolved only selectively and in different directions according to the type of media in question – opposition gradually decreased among TF1 viewers and became increasingly pronounced among those who watched the news on channels other than TF1, France 2 and the 24-hour news channels. There is potentially a myriad of reasons which explain these contrasting changes of opinion among the consumers of different media. It is quite plausible that these contrasts could reflect the varying degrees of coverage of nuclear-related news, the framing of the issue, and the tone used to present it across France's media outlets, but conducting such an analysis falls far outside the scope of this article. Whatever the case, the results presented here validate the hypothesis of media exposure: the changes in levels of opposition to nuclear power varies according to the intensity of an individual's exposure to news on the issue and the type of media they consume, even if the impact of media practices is far from systematic.

In accordance with the hypothesis of interest in the election, the extent to which an individual is receptive to attempts to reframe the nuclear issue does not depend solely on their exposure to the media: such receptiveness is also modulated by their interest in the election. Whilst in the early stages of the campaign such interest had no significant effect on levels of anti-nuclear sentiment, the same cannot be said for the way opinion on the issue changed over the course of the campaign. Indeed, every month, the anti-nuclear/ pro-nuclear ratio among the respondents interested in the 2012 presidential election was almost 8% lower than that among the respondents who claimed to have no interest in the contest. On the day of the second round of voting, the likelihood of being against rather than in favour of nuclear energy was 1.5% lower among respondents interested in the election than among those with no interest in it whatsoever. The conclusive test of the hypothesis of interest in the election clearly validated our view that the changes seen in levels of opposition to nuclear energy were a campaign effect: it was clear that opposition to nuclear power declined most sharply among those who had paid closest attention to the election campaign.

Model 3 also presented the effect of socio-demographic variables on opposition to nuclear power. Our results confirm the findings of previous studies conducted on the factors which determine the extent of opposition to nuclear power.¹ Women are more opposed to the technology than men, and older citizens are most favourably disposed towards it. As an individual's income increases, their opposition to nuclear energy declines. The least educated individuals are the ones most fervently opposed to nuclear power. However, none of the socio-demographic variables significantly affected the development of anti-nuclear sentiment over the course of the campaign.² The decline of opposition to nuclear power was not the result of the specific disaffection of one social category, understood in socio-demographic terms.

1. Jean-Paul Bozonnet, *L'environnement: de la perception des risques à la construction politique. Éléments tirés de l'enquête post-électorale 2002*. (Grenoble: CIDSP-Cevipof-CECOP, 2003), 23; Daniel Boy, Mathieu Brugidou, "Risque environnemental et politique", in Bruno Cautrès, Nonna Mayer (eds), *Le nouveau désordre électoral* (Paris: Presses de Sciences Po, 2004), 71-95 (91).

2. The inclusion or omission of the variable "Interest in the election" did not affect this result.

Consistent with the hypothesis of politicisation, party proximity produced a significant effect where the supporters of several parties were concerned. Unsurprisingly, all things being equal elsewhere, model 4 indicated that, among Green Party supporters, the likelihood of being against nuclear power rather than not was almost 4.5 times higher than it was among supporters of the PS.¹ Conversely, among supporters of the UMP and the centrist UDI, this likelihood was 3.5 and 3 times lower respectively than it was among PS supporters.

However, and this is our chief concern, this difference between the two main French parties increased still further over the course of the campaign: the decline in opposition to nuclear energy was much more pronounced among UMP sympathisers. The interaction variable recording the effect of party proximity over time was statistically significant for the UMP and indicates that among its sympathisers, the likelihood of holding an anti-nuclear opinion rather than not doing so decreased by around 7% a month compared to the same likelihood among supporters of the PS. This result is in line with the expectations stemming from our hypothesis – that the opinions of UMP followers would gradually fall into line with their party's position on the nuclear issue. The ever-growing difference between UMP and PS followers during the election campaign saw opinions become acutely polarised on the nuclear issue and resulted in marked differences between the voters of the two parties: the anti-nuclear/pro-nuclear ratio was three times lower in the UMP than in the PS in October 2011. By May 2012, this ratio was 5.5 times lower.

The significant increase in opposition to nuclear power among Parti de Gauche sympathisers compared to supporters of the PS is also consistent with the hypothesis of politicisation. Indeed, unlike the situation in the Green Party, Parti de Gauche sympathisers were largely unaware of the anti-nuclear stance of their party and its leader until the politicisation of the issue during the election campaign. As a result, for these voters, the presidential campaign allowed them to access the information necessary to bring their stance in line with that of their party, with the paradoxical result that a Parti de Gauche sympathiser was more likely to oppose nuclear energy at the end of the campaign than at the beginning.² That UMP and Parti de Gauche sympathisers should undertake journeys in opposite directions is entirely consistent with Zaller's notion that public opinion becomes polarised in an environment comprised of diverse information, which pits one elite against another.³

The politicisation hypothesis is also confirmed by the absence of any significant changes in opinion among Green Party voters. Given the prior and perennial politicisation of the nuclear issue amongst Green voters, the 2012 campaign in no way altered the state of play. These results were consistent with our expectations and unambiguously validate the hypothesis of politicisation. Moreover, not only does model 1 have the most explanatory power of the first three models discussed (with a Nagelkerke's R^2 of 0.175), but this power compares favourably with that of the final model. This result suggests that the party dimension is the key factor

1. Another way of presenting this result is to indicate that in late 2012, at the launch of the presidential campaign, among Green Party sympathisers the anti-nuclear/pro-nuclear ratio was almost 4.5 times higher than it was among PS sympathisers.

2. Parti de Gauche sympathisers were the only sector of the electorate among whom an increase in opposition to nuclear energy was recorded during the campaign. See S. Brouard, F. Gougou, I. Guinaudeau, S. Persico, "Les Français et le nucléaire pendant la campagne présidentielle de 2012".

3. J. R. Zaller, *The Nature and Origins of Mass Opinion*; see also J. Gerstlé, "La réactivité aux préférences collectives et l'imputabilité de l'action publique", 871.

in explaining opposition to nuclear power (or a lack thereof), and the way levels of such opposition changed over the course of the campaign.

Finally, beyond politicisation, the final hypothesis tested implied that those most concerned about economic issues should logically be those most affected by the economic reframing of the issue. These concerns were not, in themselves, significant in determining opposition to nuclear power, even if all the odds ratios indicated a negative effect. In terms of changes in opinion, whilst all odds ratios revealed that the likelihood of voters expressing anti-nuclear sentiment continued to decrease, only those concerned by debt and the public deficit were significantly more opposed to nuclear power during the election campaign than the respondents for whom the state of the economy was not a primary concern. This result is consistent with the hypothesis of reframing, but suggests it only applies to a specific group of respondents concerned with the economy. The economic framing of the nuclear issue resonated particularly strongly among voters concerned solely about debt and public deficit, and triggered a more marked decline in opposition to nuclear power among this group. All other things being equal, concern about employment or purchasing power did not constitute particularly fertile territory for economic framing of the nuclear issue, nor for the effects of this on opposition to nuclear power.

To conclude, the results of the logistic regression analyses conducted support the four hypotheses outlined. In doing so, they corroborate the various elements of our explanation of the decline in opposition to nuclear power witnessed over the course of the presidential election campaign. Far from uniform in nature, this campaign effect was characteristic of an unprecedented process of politicisation, unusually intense media exposure, and the economic reframing of the nuclear issue.

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The dramatic events of Fukushima catapulted the issue of nuclear power into the media spotlight, prompting several countries to announce that the production of nuclear energy would be halted. Such decisions were taken against the backdrop of increasing opposition to the technology among public opinion. This state of affairs sparked unprecedented levels of media interest in the issue and triggered its unprecedented politicisation during the 2012 presidential election campaign. However, paradoxically, the situation also prompted a decline in opposition to nuclear power.

France's political parties had not previously sought to extensively politicise the issue – broadly preferring to maintain the pro-nuclear consensus – since, for the most part, they were contending with numerous internal differences of opinion and were anxious not to alienate either their voters or their coalition partners. However, the 2012 presidential election campaign saw this situation markedly change: the public disagreements between the EELV and the PS on the nuclear issue provided Nicolas Sarkozy and members of the presidential majority with the opportunity to draw a clear distinction between themselves and their opponents by reframing the issue in economic terms. This resulted in significant (and sometimes diverging) changes of opinion among specific sections of the electorate: a marked decline in anti-nuclear sentiment among those most interested in the campaign, those most concerned about the issue of debt and public finances, regular viewers of the television news on TF1 and UMP sympathisers; a relative increase in opposition to nuclear power among

Parti de Gauche supporters and regular viewers of the television news on channels other than TF1, France 2 and 24-hour news channels. In identifying these dynamics, we have supplemented the conclusions of previous studies into opinions on matters of energy¹ by moving beyond their occasionally static approach to the relationships between groups characterised by specific values and opinions.

However, our study of the nuclear issue during France's 2012 presidential election campaign has emphasised above all else that this campaign had political effects. The extensive media coverage, the considerable politicisation, and the reframing of the issue by Nicolas Sarkozy and his allies did not see the outgoing president re-elected but did have a significant impact on public opinion. In addition to describing the ways in which opposition to nuclear power evolved and linking these changes in opinion to the characteristics which this issue acquired during the presidential campaign at a macroscopic level, this article has explained how the campaign effect made itself felt at an individual level. From this perspective, revealing these dynamics empirically has a significance which extends beyond the particular issue in question.

The politicisation of an issue has a decisive influence upon the accessibility of positions taken by the party for party sympathisers and allows them to adjust their opinions concerning the issue to bring them closer to those expressed by their party. This phenomenon is likely to have decisive consequences for future electoral dynamics, in particular in terms of issue competition.² The media coverage of an issue also has certain effects which vary according to the intensity of an individual's exposure to it and the type of media consumed. Unlike those analyses which present the twenty-first century as an era in which the media's impact is minimal,³ our results clearly reveal that media effects remain visible, at least where opinions on electoral issues are concerned. Moreover, our article acts as a reminder that the framing of an issue does not affect all sectors of the electorate in the same way, but only selectively, according to the extent to which this framing resonates with these sectors' concerns. Finally, our analyses confirm that the effect of election campaigns depends on the degree of interest which these campaigns arouse: at an individual level, it is those who follow election campaigns most closely who are most susceptible to the campaign effect. Beyond this, election campaigns have an effect if they alter the relative prominence given to the various, largely ambivalent, viewpoints which individuals have on a particular issue.

Finally, our analysis has implications for the research agenda which seeks to examine the relationship between public opinion and public action, and which does so most often by studying the extent to which policymakers are swayed by public opinion.⁴ Our study

1. See, for example: M. Brugidou, "Argumentation and values..."; Michael Greenberg, "Energy sources, public policy, and public preferences: analysis of US national and site-specific data", *Energy Policy*, 37(8), 2009, 3242-9.

2. Sylvain Brouard, Emiliano Grossman, Isabelle Guinaudeau, "La compétition partisane française au prisme des priorités électorales: compétition sur enjeux et appropriations thématiques", *Revue française de science politique*, 62(2), 2012, 255-76.

3. W. Lance Bennett, Shanto Iyengar, "A new era of minimal effects? The changing foundations of political communication", *Journal of Communication*, 58(4), 2008, 707-31.

4. See in particular J. Gerstlé, "La réactivité aux préférences collectives et l'imputabilité de l'action publique"; Stuart N. Soroka, Christopher Wlezien, *Degrees of Democracy. Politics, Public Opinion, and Policy* (New York: Cambridge University Press, 2009); Christine Arnold, Mark N. Franklin, "Introduction: issue congruence and political responsiveness", *West European Politics*, 35(6), 2012, 1217-25; Laura Bonafont-Chaqués, Anna M. Palau, "Assessing the responsiveness of Spanish policymakers to the priorities of their citizens", *West European Politics*, 34(4), 2011, 706-30.

underscores the need to consider not only “policy feedbacks”,¹ but also the impact on the climate of opinion of discourses which politicise and legitimise public action. As far as nuclear energy is concerned, and particularly in France, the impact which these discourses have on the climate of opinion appears greater than the impact of the climate of opinion on public policy choices.²

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1. Christopher Ellis, Christopher Faricy, “Social policy and public opinion: how the ideological direction of spending influences public mood”, *The Journal of Politics*, 73(4), 2011, 1095-110; Alan M. Jacobs, J. Scott Matthews, “Why do citizens discount the future? Public opinion and the timing of policy consequences”, *British Journal of Political Science*, 42(4), 2012, 903-35; Kent R. Weaver, “Paths and forks or chutes and ladders? Negative feedbacks and policy regime change”, *Journal of Public Policy*, 30(2), 2010, 137-62; Joe Soss, Sanford F. Schram, “A public transformed? Welfare reform as policy feedback”, *American Political Science Review*, 101(1), 2007, 111-27.

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