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Improving the links between research and road safety policy: the case of France and England's speed management

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Abstract

Recent European and national administration reports identified contextual, cultural and structural obstacles which need to be overcome in order to achieve the levels of dialogue and collaboration between research and public policy: How does “evidence” speak to “policy-makers”? How should research results be used for a more evidence based policy-making? So our communication is a comparison in the use of scientific studies in speed management policy between France and the United Kingdom since the 1970s. This work shows that, over the period investigated, research utilisation in France was much more strategic, whilst in England it was primarily instrumental, which can be explained by reference to the place and the legitimacy of the organisations producing research in the two countries.

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1. Introduction

In this contribution our focus is on how France and England mobilised research in order to develop their road safety policies. Our case study is the speed management on French and England roads, which is one of the three key measures used to perform road safety since the seventies (with compulsory seat-belts for drivers, campaigns against drinking and driving). A comparison of the use of science in the devising and driving of public policy in France and in England highlights the variety in the nature of the processes at work. It also demonstrates the very national character of the forms that the changes took – largely as a result of the weight of the two countries' existing research institutions and contexts.

This approach according to the use of research presents two distinct advantages: it avoids the particularly difficult-to-answer question of the impact of science on public policy; and it avoids

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cooperative bias – that is to say, the hypothesis has to be taken seriously that researchers, public authorities and politicians are not necessarily happy to work together and that they do not necessarily give useful material and guidelines to each other.

The uses of science are diverse but typologies exist for structuring and reducing the diversity of these uses. This work is based on the three-pronged typology used by Lorna Schrefler (2010) (*instrumental, symbolic and strategic use of scientific knowledge*) which picks up on and regroups the seven kinds of usage distinguished by C. Weiss (1979). We are, nonetheless, aware of the heuristic limits of typological work.

This paper shows that, over the period investigated, research utilisation in France was much more strategic, whilst in England it was primarily instrumental.

2. In France, do we have a more ‘political’ use of road safety research?

The French situation is more redolent of the “Political model”, as defined by Carol Weiss. This emphasises conflict of interests, power relationships and their primacy in the decision-making process. Science can be used to support any of these interests. Lorna Schrefler prefers the notion of ‘strategic use’ which, in her definition, has two principle dimensions. A ‘political strategic use’, in the first place, is characterised by a ‘tactical use’ of knowledge – the content here is less important than the legitimacy conferred by the scientific process. After this, a “strategic substantiating use”, characterises a use of knowledge that aims to support a pre-determined solution in the face of the existing solution or against the opponents to an innovation. If this kind of use is characteristic of the way road safety research was used in France, the example of the speed limits management shows even more that research is only one of the elements in a much wider intellectual enterprise.

2.1 The adoption of speed limits in France

It was a step-by-step process. The initial decree of 28 June 1973 set the speed limit at 110 kph for 13,100 kilometres of major roads and 100 kph on the others. The second decree, promulgated on 3 December 1973, "temporarily" set the speed limit at 90 kph on roads and 120 kph on freeways. This was followed by a third decree dated 13 March 1974, which maintained the 90 kph limit on the non-freeway network while stipulating 120 kph for 2x2 lane expressways and 140 kph for freeways. The final decree of 6 November 1974 set nationwide limits of 90 kph on roads, 110 kph on expressways and 130 kph on freeways (CGP 1984: 67). Thus the process of fixing and universalising speed limits can be summed up as four regulatory decisions spread over two years.

But the adoption of regulative measures can not be simply understood as the result of a codification work done by legal writers. This regulative production is straight related to a range of experiments and a work on their implications. (Ternier 2003 : 24). A first illustration of this process is the publication of *ONSER Documents n°2*, in February 1969 (“*réglementation de la vitesse*”). The document looks at existing regulations (in particular, the 90kph speed limit for drivers during the first year after their driving test). It quotes the example of foreign experience to back up the contention that generalised speed limits had proved their effectiveness (measured by reduction in the numbers of accidents) and concludes: “it therefore seems reasonable to envisage a generalised speed limit in the years to come”. The proposed advantages of a speed limit were also economic and, in the end, ONSER (the French National Organisation for Road Safety) recommended setting up a speed limit experiment. This work clearly fits C. Weiss’s (1979) ‘problem solving model’. The way the document was drawn up, however, also demonstrates a pro-active initiative on the part of the researchers and especially the director of ONSER. As far as the director of ONSER was concerned, this was “the first of the green papers addressed to those responsible”. The idea was to present the outcomes of studies, just at the time when the government

authorities were thinking of launching a traffic speed-limit experiment. We are, thus, not far from Weiss's (1979) 'knowledge-driven model', which makes applied research a stage in the decision-making process.

However, this instrumental use of scientific knowledge by decision-makers implies agreement between researchers and policy-makers as to the nature of the problem and the objectives to be attained. In the case of speed limits, this agreement was noticeable by its absence. This was evident, in 1970, in the discrepancy between the general report of the road-safety committee's findings, published in March, and a January article in the newspaper *Le Monde* reporting on progress of the committee's discussions. The general report concluded that the experiment in progress during 1970 should be continued¹. Prime Minister J. Chaban Delmas's closing speech to the committee on 18 March² followed the same line in urging an extension for the experiments. But, he indicated that the results of this second phase would be appraised in October, with a view to implementing definitive measures in 1971. Now, in January 1970, the *Le Monde* article, based on the words of the committee spokesman, was already announcing the adoption of "unpopular measures". As early as 1969, a reference study had established that "a speed limit is inevitable; only the means of implementation remain to be clarified" (Ternier 1969).

The government's desire to delay adoption of 'unpopular measures' by extending the experiments and their evaluation is redolent of the Political Model and covers a Strategic or, in the narrow sense, a Tactical Use in their recourse to science. Recourse to science in this case has less to do with the environment – a problem in society needing to be solved – and more to do with political manoeuvring. This kind of use of knowledge is typical of a political arena in which there are many actors and very tough conflicts of interest. Science, in these circumstances, becomes just one resource, amongst others, to be mobilised in the exchange of blows. It should also be noted that this proposal came at a time when the development of a policy of "high land speed" was being mooted – with aero trains, turbo-trains, and the development of 'super-motorways'. The outcomes of science could be used to legitimise a solution that ran counter to a movement in favour of ever more rapid mobility.

The programming of successive experiments and evaluations seems to have served as a justification for postponing a controversial decision: "further research is needed"! In 1969, a limit of 100 kph was tested on 1600 kilometres of major roads and extended in 1970 to almost 12,000 further kilometres of national highways, with the limit set at 110 kph. The national road safety body ONSER was commissioned by the authorities to evaluate the results of these two experiments, with a view to providing input for a decision by the authorities. Experiments and evaluation allowed the government and the administration to say they were taking action, to prove their investment and their rational approach to things, even if objectively it was impossible to do anything, on account of the conflicts.

The latency period before taking a governmental decision extended until 1st July 1973³. For this reason, the generalisation of speed limits in France cannot be said to be based on use of convincing data but, rather, on 'non use' in Schrefler's (2010) sense. The decision owed a great deal to the fact that the decision-making actors (particularly the road safety delegate) seized the window of opportunity offered by the fuel-crisis.

¹ See article in *Le Monde*, 28 January 1970.

² In the speech, he presented France as a country behind the times, compared with other European countries including England (p.2). Topics addressed (in order): aid for the injured, drivers (alcohol), infrastructure (black spots), speed limits, information, and organisation.

³ In 1962 the maximum speed in a built-up area was set at 60kph. The effects of this regulation have never been evaluated (Cohen, 1998, 53). In December 1990, it was set at 50 kph.

However, the successive experiments and their evaluation were not simply a mean of making up for lack of decision. They progressively extended the measure to new roads and made an important contribution towards the implementation of the solution in a legitimate way. The conclusions of the various experiments were in favour of an increase in road safety. This outcome simply strengthens the common-sense hypothesis that knowledge circulates among a plurality of actors, and scientists are just one group of participants among others.

Over this period, there was no general agreement in France about the speed limit. In fact, it was a subject of violent and stormy debate, confirming the fact that scientific knowledge, once gathered, is open to interpretation, all of which implies ‘dialogue’ and ‘buy-in’ on the part of those who use such knowledge (Nutley et al. p. 24). The mobilisation of Australian studies and the enlistment of researchers by the motor magazine *Auto-Journal* to discredit the findings of French ONSER researchers illustrate this point. There is no such thing as straightforward propagation or supply of knowledge to passive audiences. What counts as scientific evidence, if it is objective, is still coloured by the subjectivity and the commitment of the actors involved, as well as by the context. In this debate, the rejection by *Auto-Journal* of the scientific status of ONSER was an act of defiance against government authority.

In short, although a technical and instrumental use of science may pertain – there is a problem to be solved and researchers are brought in both to find what ‘measures’ will bring down the number of deaths – political (strategic) use is still present, particularly in the need to legitimise / discredit government action. This utilisation seems capable of explanation, in this instance too, through the status of road-safety research in France at the beginning of the 1970s.

In France, until the 1960s, road safety research remained “a private affair” in spite of the new consideration of the road accident issue as a problem throughout the 4th Republic (1946-58). There was neither government action – except circumstantially (preparation of a highway code) or under the pressure of public opinion (because of some spectacular accidents) (Kletzlen, 2000) – nor any public research into road safety. The first studies were made by insurance professionals and car manufacturers. ONSER was created in 1961.

2.2. From indulgences to automated speed enforcement

If we look forward, three decades later, the landscape changed dramatically. Since the second half of the 1970s, the struggle against excessive speeds was institutionalised. Concerning speed regulation, levels, instruments and objectives are now fixed. Outside agglomeration, speed enforcement is not anymore a main instrument of public policy considering road safety in France. Regulation exists and policemen are in charge of its implementation. Progressively speed enforcement as a stake is not conceived as central anymore for the elaboration of public policies and their implementation, as illustrates the development of the phenomenon of « indulgences ». This evolution has to be put into a broader context. Road safety is not considered as the field of intervention of the State but tends to be more and more considered as having to be the field of intervention of all citizens. This change in the representations of the road safety issue is crucial. The ambition, represented in particular by a new delegate Pierre Mayet (1982-1985), is from now on to mobilize the society, thanks to an action of decentralization of public policy in road safety. Researchers take part to this change in representation of the issue.

This period, until the end of the 1990s illustrates the way researchers can contribute to reformulate the issue, its solutions and ways to think about it (Nutley and al. 2007). This is a more indirect use of science. Ideas and representations, ways researchers consider the issues are diffusing and taken over by other actors (interest groups, media, public authorities) and can contribute to substantive reorientations of

public policies. Researchers contribute to the implementation of new public policy tools, more adapted to the new framework in road safety which is imposing thanks to the major political change in 1981, decentralization of public policy and wish to make the civil society more active. The program REAGIR (React through inquiries on heavy accidents and initiatives for remedying to it) are one illustration of these new conceptions.

This new framework of road safety policies settled in the 1980s and the following on the orientations of road safety policies can not resist the absence of improvement in road safety results. At the end of the 1990s, the symbolic level of 8000 death people on French roads provokes reactions. A new framework is progressively settled (Hamelin 2010). Speed comes back in the preoccupations of public authorities in charge of road safety (Namias 1994). One of the main contributions of research during this period is the reorientation towards speed enforcement systems and the identifications of the failures of these systems. We join here the enlightenment model. Scientific knowledge is used for identifying failures and understanding them. Nevertheless they are not used in public policy before the progressive change which occurred from 1997 onwards. But it legitimates the solution of speed enforcement systems already present in the White Book on road safety in 1989.

The use of evaluation practices is playing an important role, and more particularly the evaluation of speed enforcement systems (already implemented in 1999, it is officially decided in October 2000, launched in April 2001 and concluded in 2003). In this period of a deep and rapid change in public policy, scientific knowledge is used in an instrumental logic: the elaboration of evaluation as a simple and imperative clone of the research made by Claudine Perez-Diaz.

The INRETS, which was constituted on the basis of the ONSER in 1985, remained mostly outside this process. How can we explain the withdrawal of the INRETS and its researchers? Several explanations can be proposed: on one hand, a mistrust by policymakers of the work done by INRETS researchers, considered as too theoretical or too less applied; on the other hand, a withdrawal of INRETS researchers from decision-making centres due to the transformations of the research system in road safety (the development of the research model of the CNRS deepens the bridge between research and public policy); a reticence from INRETS researchers to focus on the attitude of the driver meanwhile they would like to consider a bigger variety of accident causes; a fragmentation of research in road safety with is illustrated in the proceedings of the INRETS speed seminar from 2006 (Dekkers 2006).

One of the paradoxical but essential results of this seminar is to show the extreme diversity of scientific approaches to speed as a problem and possible solutions (communication, education, infrastructures planning, dissuasion, and so on). It highlights an enlargement of ways to consider this problem implying a variety of public policies more than a reduction of the problem required by public authorities. The CSA, at the very heart of French road policy at the time, is not really present in the seminar (presenting only one contribution). This result underlines the fact that “road safety research is pluridisciplinary”. Several fields contribute to a better knowledge of the phenomenon and several fields are integrating several disciplines. But, in terms of use of research, we can consider, following C. Weiss, that the use of science can give place to an endarkenment process more than an enlightenment one (Nutley et al. : 41).

3. In England, a principally instrumental use of research in road safety?

The English case seems to be very different. At the beginning of the 1970s, research seems to have been an essential factor in the devising of English road safety policy. English policy-makers made instrumental use of scientific knowledge in road safety. In other words, they used it in order to respond to

well-defined objectives. Given an identified problem, knowledge provides the means of choosing the best solution. This instrumental use of research (Schrefler 2010) is part of an attempt to rationalize public decisions, to which C. Weiss's (1979) problem solving model also refers: faced with a problem to be solved, research offers empirical evidence and provides outcomes that help in decision making. In this case, recourse to science took the form either of seeking out relevant data or of ad hoc commissioning of research. This utilisation was supported by the tradition, the legitimacy and the professionalization of English road safety research, and also by the clearly defined expectations of the public authorities.

3.1 Research and speed limit generalization

In England, there was no 'national' speed limit until the middle of the 1960s. On 22 December 1965, Barbara Castle, Minister of Transport, introduced a speed limit of 70 mph (112 km/h) for all English roads, including motorways. The decision followed a whole series of crashes in the month of November, largely due to heavy fog. They provided an "opportunity" for policy-makers to introduce a four-month trial period⁴, which was prolonged until September 1967 to enable the Road Research Laboratory (RRL) to assess its effects. The RRL produced two reports, one in 1966 and one in 1967 (RRL Special Report n° 5, *Interim Report on the 70 mph Speed Limit Trial*, London, HMSO, 1966 and *Report on the 70 mph speed limits trial*, RRL, Crowthorne, 1967). The second report concluded that the speed limits had considerably reduced the numbers of cars travelling at high speed on motorways, that motorway accidents had been reduced by 20%, and accidents on ordinary roads by 3.5%. This instrumental utilization of RRL studies has been confirmed in interviews conducted with R. Allsop, who emphasizes the pioneering, continuous and sustained nature of research into the effects of speed on accidents, and the key importance of RRL and University researchers in the development of road-safety policy.

Of course, in England too, the oil crisis played an important part in the general spread of speed limits. In December 1973, as part of the emergency measures for reducing energy consumption, the United Kingdom adopted a 50 mph speed limit on all roads including motorways. These temporary restrictions were lifted in May 1974. But in December, speed limits were fixed according to category of road: single carriageway roads, 50 mph; dual carriageways, 60 and motorways 70 mph. These temporary limits were extended until April 1977. At the height of the oil crisis, TRRL investigations⁵ showed a voluntary change in behaviour, i.e. a reduction of speed in order to save petrol. But the archives also show the ministry asking the TRRL researchers: "Could you please prepare advice for him (The Minister) on this possibility of reducing the limit to 60 mph on (ordinary) roads" (letter on 7 August 1974).

The TRRL was instrumental both before and after the decision. Not only was the information provided by the research team used as an aid to decision making but, afterwards, the team was also asked to evaluate the effects of the speed restrictions (Charlesworth, 1987 : 147). Given the finished nature of the British research set-up, one understands its position at the heart of the decision-making process. The existence of the Road Research Laboratory (RRL) - a public research laboratory built in 1933- and its previous history give us an understanding of the professionalism that surrounded the introduction of research into traffic and road safety. "Road Safety Research" started out as part of an already existing field of research (Road Research). Investigations into traffic and safety grew up by transferring and

⁴ Interview with R. Allsop, 3 May 2011

⁵ In 1965, the Road Research Laboratory became the Transport and Road Research Laboratory after having been placed under the aegis of the Department of Transport.

adapting the standards of road engineering, although the creation of a statistics and planning section did introduce a questioning of the social and economic order⁶.

As early as 1946, the *Road Research Board* established that development of a policy to combat danger on the roads called for the use of scientific research. Accident prevention policy had to be based on partial and cumulative solutions: “we feel that such considerations provide the reason why it is essential to call on the experimental and analytical resources of science”⁷. The appeal to science, nonetheless, was as much a way of increasing knowledge prior to action as a response to common sense⁸. The link thus established between science and public decision meant that the public authorities had to assemble a “body of knowledge” before they could act on anything. A priority task for researchers, therefore, was the collection of necessary data for the analysis of accidents. Hence the importance, as early as 1946, of a “statistical approach” to traffic and road accident studies⁹. That same year, a “traffic and safety division” was created as part of the RRL.

Another important point for our discussion was the piloting of this research by the Civil Service. The “traffic and safety division” grew out of the recommendations of an Advisory Council of 10 October 1945, acting on the conclusions of a 1939 parliamentary report (*Report of the Select Committee of the House of Lords on the Prevention of Road Accidents*, known as *The Allness Committee*). The Allness Committee report had recommended that the laboratory be given a unit devoted to questions of road safety. We are thus dealing with an organisation, methodically set up on the initiative of central government.

However, the RRL, i.e. road-safety research, does not come under the aegis of the Department of Transport. It is one of the fifteen research organisations to come under the Department of Scientific and Industrial Research (DSIR). English road safety research developed in the heart of the British research system. Like the other lines of research in the RRL, road safety is genuinely independent of the Department of Transport – for the sake of the necessary separation between researches and decision-making. This situation came to a close with the disappearance of the DSIR in 1965 and the attachment of the various laboratories to the ministerial departments closest to their field of operations. The TRRL, logically enough, was placed under the aegis of the Department of Transport.

At the beginning of the 1970s there was a growing determination within the Department of Transport to equip itself with the means to pilot finished research – a response to the contents of the 1971 Rothschild Report¹⁰. It marked the end of an era in which the laboratories pursued their own research agenda; henceforth their resources would be made available to the administration (Barker, Beesley 1998). Ministry spokespersons estimated that 10% of government research might be initiated by the researchers but that 90% should be initiated by the Department of Transport¹¹. To achieve this, a team responsible for

⁶ “In fact, many of the problems that confront the laboratory are economic and social in character (...) By studying the traffic on all roads in the vicinity of the projected motorway [London-Birmingham] it was possible to predict times savings and accidents savings and hence the likely return to the community” (Glanville 1963 : 879).

⁷ DSIR, RRB, “A review of Post War Road Research”, NA, DSIR 12/58, May 1946, p 9.

⁸ « Road safety moreover is a problem for which nearly everybody has “infallible” remedies – many of them impracticable but not easily demonstrated as such”. DSIR, RRB, *Second Report of the Committee on Information Services*, NA, DSIR 12/108, B128, February 1948.

⁹ “One of the first tasks in helping to put this transformation on to a scientific basis has been to obtain the basic facts and figures relating to the roads and to the traffic using them” (Glanville 1963 : 878).

¹⁰ Entitled *The Organization and Management of Government Research and Development*, it stated the principle of a customer to sub-contractor relationship: “the customer says what he wants ; the contractor does it (if he can) ; and the customer pays”.

¹¹ Road Safety Programme Planning – PAR Steering Group – Research (1972-1973), NA, MT 92/599 RS 19/1/044.

research planning was created in the Transport Department at the beginning of the 1970s¹². In actual fact, the development of the customer/subcontractor relationship came to nothing. Mainly because the ministry suffered from a relative lack of expertise compared with the government laboratories. This phenomenon encouraged the development of transport research in the universities (Boden & al. 1998: 271-272).

In this set-up, the utilisation of scientific research and knowledge about road safety made complete sense. It operated in a context of rationalised government action, which reconfigured the interface between science and politics and slotted into a traditional research structure that legitimised the place of science in the formulation of road safety policy. From this point of view, the French case was very different.

3.2. *Research and speed cameras deployment*

In England, speed cameras deployment seems not to show a major shift in the use of science in public policies. Several scientific works are accompanying the deployment process of speed cameras in England.

This technological solution to the problem raised by speed controls is already present in the recommendations of the *Road Traffic Law Review* published in 1988¹³, following the works made by a commission directed by Peter North and integrating two academic researchers, two members of the Home Office and two members of the Department of Transport. We can observe the real balance between researchers, agents of the ministry of Transport, and representatives of policemen. The specifications of the commission are relying on “simplification, efficiency and acceptability” of the *Road Traffic Law*.

The Road Traffic Act from 1999 allows juridical adjustments necessary to the legalization of infractions observed by automatic disposals and hence the introduction of the automation of the sanctions to the infractions to the rules of the road. First settlement is made in West London in 1992. There are 21 speed enforcement systems and 12 devices on traffic lights (Ward 2003). In 2000, nearly 4500 *safety cameras* are deployed in England. They are mostly dealing with speed enforcement systems. In 2005, mobile devices are representing almost half of all devices (Carnis, Hamelin 2007).

Scientific works are accompanying this deployment process. It is particularly the case for the works done by Claire Corbett (Brunel University). In 1993, she is driving the first poll of drivers on the A40, thanks to a funding made by the TRL and a rely on existing Australian scientific works. This kind of work aims at measuring attitudes of car drivers, and therefore the acceptation of speed devices by public opinion. The conclusions of the work are dealing with the overall meaning and the objectives to give to the new speed enforcement system. They are also indicating that if the aim is only to slow the speed on most dangerous areas, the system is quite operative (Corbett 1995 : 353) ; but if the aim is to produce a more uniform speed, it is necessary to develop mobile devices. These first scientific works are producing clear recommendations to English policy-makers.

The first impact evaluation of the speed enforcement system is from 1996. The Home Office asked for it in conjunction with the ACPO. This impact evaluation integrated also a cost-benefit evaluation (Hooke et al. 1996). Conclusions are essential for understanding the evolution of the system (Carnis, Hamelin 2007). Very soon after the deployment of the system, public policies can rely on an evaluation and researches which are conceived as tools for driving the system and can explain some of its evolutions.

¹² NA, MT92/604, July 1971.

¹³ Road traffic Law Reports, HMSO, 1988.

Socio-economic evaluations of these systems have a bigger importance than in France. In France, these evaluations are not frequent and are made by the administration in charge of these systems. On the contrary, in England, there are many and recurrent independent research studies (1996, 2003, 2004 and 2005). They are often followed by scientific publications. This makes the hypothesis of a technical and instrumental use of scientific knowledge stronger.

As we have just seen, automation is a mostly institutional field (DfT, Police – ACPO, TRL and universities), leaving the civil society apart, except the acceptance of these new tools by the public opinion (Ward: 5-8). Experts have some minor criticisms concerning the tools and proposing some improvements: questions on best strategies, questions on the capacity of the tools to reach target populations. Research also offers alternative solutions.

Different interest groups are mobilized: on the one hand, groups in favour of speed limits; and on the other hand, groups in favour of car drivers (Ward: 8-11). The mobilization of these actors is a further argument showing that researchers are only concerned actors among others. These constituted groups are giving ground to the hypothesis of an interaction and research as part of a more global intellectual enterprise (Weiss 1979).

Some groups are clear opponents to the tools or at least speak about a tool conceived to earn money – such as the Association of British Drivers created in 1992 – compared to road infrastructures planning, in the framework of the economic crisis of the 1990s. Therefore ABD criticizes the experience led in London. ABD also put into question the work done by the TRL, including after its privatization, because the DfT is still one of TRL's main clients. We can therefore observe a political and strategic use of evident data. These oppositions are heard and they are answered by the addition of precise implantation rules, the necessity to clarify the status of the roads and to simplify the definition process of speed limits.

4. Conclusion

In both countries, science was at the heart of the public road safety policy making. But more than the impact made by the outcomes of the research that was done, it is the use and the non-use of this work that has to be taken into account in order to gain a better understanding of the road safety policies. The cases studied show differentiated usages, which can be explained by reference to the place, the status and the legitimacy of the organisations producing research in the two countries of our study.

We want to highlight the fact that speed limits generalization, studied in France, showed that research is just one element of a more global intellectual enterprise, where interest groups, legitimacy confrontation and ideologies are at stake. The strategic/tactical or political use is predominant. Research is used in order to convince. When an argumentation is needed in favour of adopted measures or discussed measures, the legitimacy given by the scientific field is required. But this tactical use can also be a tool for postponing difficult decisions (“further research is needed”).

The English case-study shows a stronger instrumental use than in France. This can be explained by a more legitimate and more integrated research to the decision-making process. Nevertheless, the interaction model and the model of research as part of a more global intellectual enterprise are useful for understanding the elaboration of English road safety policies. Scientific knowledge are circulating and scientific are only one participant among others in the elaboration of public policies. Nothing indicates that scientific knowledge is considered as more important than professional knowledge or than ideologies.

Nevertheless, by focusing on speed management, we have excluded from the discussion potential competition between “scientific” solutions to road safety problems. A comparison between the war on drink-driving, the wearing of seat-belts, and the question of speed limits might have led us to different results. We would no longer have a “reduction” of the road-safety problem, demanded by government action but, on the contrary, a widening of the ways in which to deal with this problem, which is capable of being steered towards different, not to say competing, public policies. Because it is multidisciplinary, road-safety research is “fragmentary”. In terms of the use of research, one can be struck by the idea, already advanced by C.Weiss, that the use of science is more likely to lead to an *endarkenment* than to an *enlightenment* which renders its use practically impossible for policy-makers.

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