# Assessing policy and practice impacts of social science research: the application of the Payback Framework to assess the Future of Work programme

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The UK Economic and Social Research Council funded exploratory evaluation studies to assess the wider impacts on society of various examples of its research. The Payback Framework is a conceptual approach previously used to evaluate impacts from health research. We tested its applicability to social sciences by using an adapted version to assess the impacts of the Future of Work (FoW) programme. We undertook key informant interviews, a programme-wide survey, user interviews and four case studies of selected projects. The FoW programme had significant impacts on knowledge, research and career development. While some principal investigators (PIs) could identify specific impacts of their research, PIs generally thought they had influenced policy in an incremental way and informed the policy debate. The study suggests progress can be made in applying an adapted version of the framework to the social sciences. However, some impacts may be inaccessible to evaluation, and some evaluations may occur too early or too late to capture the impact of research on a constantly changing policy environment.

THE INCREASING CULTURE of accountability affecting government spending in the UK led the Economic and Social Research Council (ESRC) to fund exploratory evaluation studies in 2006 to assess the wider impacts of various examples of its research. By doing so it aimed to investigate the most effective ways to evaluate the impact of social science research on society. In one

For acknowledgements see page 208.

study RAND Europe and the Health Economics Research Group (HERG) at Brunel University focused on the Future of Work (FoW) programme. A detailed account of the study, and the full case studies, can be found in the two RAND Europe reports (Wooding *et al*, 2007; Nason *et al*, 2007). In this paper we outline the FoW programme, explain how the Payback Framework was adapted and applied to explore the impacts from the FoW programme, and finally describe the lessons we learned.

## The ESRC's Future of Work programme

The FoW programme set out to fund leading UK researchers, across a wide range of disciplines, to investigate the future prospects for paid and unpaid work. The programme was shaped by a consultation exercise involving 140 policy-makers, academics and practitioners. The programme started in October 1998, followed by a second phase in January 2001. With total funding of £4 million, it attracted 221

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#### Box 1. Aims of the FoW programme

- To create the evidence base that would then ground theories of work
- To enhance public understanding of the critical developments most likely to impact on people's working lives
- To deepen accounts of the future of work by systematic mapping of past and present shifts and continuities
- To foster interdisciplinary and comparative perspectives
  To use innovative methods to engage with research users
- To act as a focus for debate within and between the academic, practitioner and policy-making communities

applications for the first phase, of which 19 were supported. A further eight projects were supported in the second phase. The aims of the programme are shown in Box 1.

The FoW Programme Director was a former Chair of Industrial Relations at the University of Leeds. He was assisted by a programme advisory committee of senior representatives from government, the Trades Union Congress, business and academia. The advisory group attended meetings, participated in site visits to meet researchers, and provided access to policy networks. The written dissemination activities were led by a former journalist at the *Financial Times*, who was appointed as the programme's media fellow. He wrote a series of seven booklets aimed at policy-makers. The series described FoW research and set it in context.

## Methods

## Analytical framework and overall approach

The analytical framework used for the study, and tested by it, was based on the Payback Framework originally developed by HERG at Brunel University to examine the payback of health services research (Buxton and Hanney, 1996). It was further developed in an earlier ESRC analysis of non-academic impact from its research (Cave and Hanney, 1996) and subsequently extended to examine basic and clinical biomedical research (Wooding *et al*, 2005). The Payback Framework consists of two elements:

- A logic model representation of the complete research process (for the purposes of research impact evaluation); and
- A series of payback categories to classify the individual paybacks from research.

Key features of the Payback Framework are described earlier in this special edition of *Research Evaluation* (Donovan and Hanney, 2011).

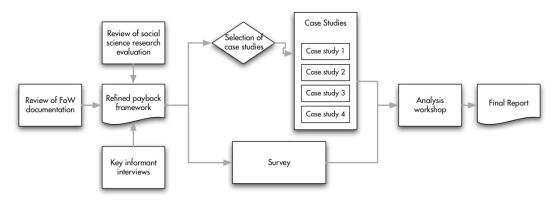
Throughout the study we applied various data collection methods (shown schematically in Figure 1) to first asses and advance the Payback Framework and subsequently perform the actual evaluation of the wider impact of the FoW programme.

## Assessment and adaptation of the Payback Framework

To assess the applicability of the Payback Framework to the evaluation of social science research we reviewed the literature on social science evaluation and the common models for examining the impact of evidence on policy. We concluded they could be aligned with the Payback Framework. Furthermore, we reviewed ESRC documents and conducted six key informant interviews to enhance our understanding of the programme and inform our adaptation of the framework.

The main changes required for the payback categories included a generalisation away from the health field and a move from using the term 'benefit' to concentrating on using the term 'impact'. Within the employment sector, and wider society, there is less consensus than in the health field on how to assess whether a change is a net improvement; for example, some changes may benefit the employee at the expense of the employer, and of course not all impacts are beneficial.

In modifying the health-related categories we chose to generalise them rather than to alter their specificity to relate to employment. We did so because this project was exploring the applicability of



**Figure 1. Project schematic** Source: Wooding *et al* (2007)

the Payback Framework to the social sciences in general, using the employment sector as a test case. A major change was whereas in the original framework, adoption by practitioners is Stage 5 of the model and leads to the fourth payback category of the 'health and health sector benefits' (see Donovan and Hanney, 2011), in the revised version 'impacts on practice' becomes the fourth payback category, as shown below:

- 1. Knowledge (explicit and codified knowledge provided e.g. in papers, books with books having generally greater importance than in health research);
- Impact on future research (e.g. generation of new methods and/or datasets, capacity-building, career development);
- 3. Impacts on policy (e.g. impact on policy-making at national level, within professional bodies or in departments of organisations);
- 4. Impacts on practice (i.e. individual behaviour); and
- 5. Wider social and economic impacts (including impacts on public opinion for which media coverage was used as proxy in a way that it is not in relation to the payback categories for health research).

## Evaluation of the FoW programme using the refined Payback Framework

We applied the refined Payback Framework to structure both a programme-wide questionnaire (which we used to investigate the wider impacts of the FoW programme's grants as a whole), and a series of four case studies of selected FoW-funded projects (which we undertook to examine the detailed pathways to impact). Full details of the methods are available in Wooding *et al* (2007).

To examine the range and types of payback produced across the FoW programme we invited all the principal investigators (PIs) who held grants from the FoW programme to complete an online survey and nominate a user of their research for follow-up via a telephone interview. The survey concentrated on the wider impacts of the projects, but also asked some questions about the initiation of the research. The survey questions were based on those used in previous payback studies and modified in light of the key informant interviews and literature review. The survey included guidance on the definition of each type of impact.

PIs were invited to participate in the survey using personalised emails which contained a direct hyperlink to their questionnaire. The survey was implemented using Multimode Interviewing Capability (MMIC) web questionnaire software. Data were downloaded from MMIC and analysed using SPSS version 14 and Microsoft Excel version 2000.

To make it easier for PIs to complete the questionnaire we culled lists of each PI's publications and media coverage from the records of the FoW programme and loaded them into the relevant questionnaire. The PIs were then asked to correct and amend as necessary, rather than entering this information from scratch.

We conducted four case studies to explore how the policy and practice impacts had occurred from the selected projects and also to examine if the Payback Framework was a suitable structure for tracing such impact. The case studies were selected as follows:

- Purposive selection of high-impact case studies to ensure there was impact to be traced — there was consensus from key informants about the most suitable case studies.
- Selection of case studies to mirror the variety of projects carried out in the programme. We considered discipline of study, research methods, programme theme, size of grant, team size, and both phases of the programme.

Data sources used in the preparation of the case studies are summarised in Box 2, and were drawn on in a process of rolling triangulation (Hanney *et al*, 2003).

The data collected in the various elements of our evaluation project were analysed in a one-day workshop attended by the project team and the ESRC project manager.

## **Findings**

Findings of each of the four separate strands of the evaluation are presented in turn, and then we illustrate our application of the (adapted) Payback Framework by providing a narrative summary of one case study.

## Key findings from the literature review and key informant interviews

Models of impact in the social science evaluation literature seem largely compatible with the Payback Framework, and we incorporated the findings of our review into our refinements of the Payback Framework. Furthermore, the review was also drawn upon

### Box 2. Data sources used for case-study research

- Grant applications
- Peer review comments
- The Programme Director's final report
- Publications attributed to grants
   Data from our our our our
- Data from our survey
- Face-to-face interviews with PIs
  Telephone interviews with other researchers associated with the grants
- Telephone interviews with policy and practitioner users
- Key informants' interviews
- Review of relevant policy documents

to provide some of the context for the discussion section of the paper.

Key informants raised a range of issues related to assessing research impact, including timing, attribution, and 'additionality' which revolves around the question of what would have happened without the programme, i.e. would the same impacts have been achieved? This evaluation could not assess the final impact of the FoW programme over the very long term; however, the interviewees suggested that the programme had already had significant impacts. We addressed attribution and additionality in the case studies by asking PIs to consider the counterfactual, i.e. how much of what has happened would have happened without the programme.

Much of the literature (e.g. Weiss, 1980) suggests that many inputs may flow concurrently into each policy change, making attribution more difficult. Furthermore, there was general consensus from the interviewees that notions of progress in policy areas such as employment are politicised and contested, and consequently might not have a clear long-term direction. Interviewees suggested that the lack of directional incremental advance was illustrated by the numerous reversals in employment policy over the last 20 years. They felt that some of these shifts had been evidence-driven; some not. Because of these non-evidence-based shifts, it was suggested that the impacts of research may be more transient, and that rather than being overtaken by new understanding, the findings of some research might be 'washed away'. This means that holding the tide against misunderstandings, or discrediting myths that later return, may be important paybacks. The standard concern with evaluation of research impacts is that it is carried out too soon. The views of our interviewees also suggest that in some circumstances evaluations in social science may miss impacts by being conducted too late.

Some interviewees noted that it was extremely hard to influence policy if accepted opinion was in a direction counter to that suggested by the research; however, the use of research to fine-tune policy was an easier proposition. The Payback Framework acknowledges the role of 'the political, professional and industrial environment and wider society', but interviewees claimed it could be particularly important in this study. Overall there was a feeling that the sphere of employment was heavily influenced by 'fashion and myth' — perhaps because management practices are heavily context-dependent and hence difficult to generalise.

## Summary of results from survey

We received completed responses to the survey for 22 of the 27 projects, a response rate of just over 80%. In organising the projects, the majority of PIs said they included policy-makers in the original design of the study.

The projects received funding of between £36K and £345K, with only four of the 22 PIs receiving additional funds for the specific ESRC project. Asked about their prior expectations about the project, all PIs said they had expected their projects to produce academic outputs, 13 expected policy outputs and seven expected practice outputs also.

Projects produced a number of publications, presentations and media outputs, as shown in Figure 2. Starred projects are those selected as case studies and include those with the largest number of publications, and media outputs.

Twelve projects resulted in career development for team members, in terms of promotions/ qualifications — with individual projects reporting up to six qualifications attributable to them, but attribution to the FoW programme varied. Most PIs thought that their FoW project had incrementally advanced their research field, with six stating it was responsible for changing their field direction. The ESRC, government and charities and foundations were the main funders of follow-on research for the FoW teams. In terms of effects on future research, seven PIs were able to identify other research groups who were influenced by their FoW research.

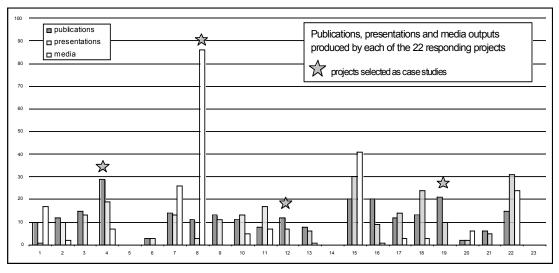


Figure 2. Publications, presentations and media outputs *Source*: Wooding *et al* (2007)

Research was disseminated to policy-makers through a variety of channels (e.g. academic publications, discussions with policy-makers, seminars, working papers, media coverage), with academic publications being the most important single route according to PIs. Despite policy-makers suggesting that the media fellow's series on the FoW projects was the most important way to learn about projects, no PI agreed.

Eighteen PIs could identify organisations whose policies they had affected. Most research recommended that policy should move in a certain direction (19 projects) and this was not always the same direction as that prevailing in policy at the time. According to the interviewees, this would make it more difficult for research to make an impact on policy. When asked to, PIs were less able to identify specific policies that had been affected by their research with only nine PIs naming a total of 14 specific policies. Most PIs thought their research had changed policy in an incremental way.

PIs considered presentations to practitioners as the most important dissemination method, and working with organisations as the second most important route. The practice impacts of projects were harder for PIs to identify (just five PIs listed a total of seven such impacts). Practice impacts mainly produced incremental changes (4), but some changed practice direction (2) and one confirmed practice.

Of the 22 PIs, 17 thought that being part of the FoW programme had helped them form networks, mostly with researchers, policy-makers and practitioners. Most PIs considered their research to have been more successful in a number of dimensions due to the FoW programme; none considered it less successful.

## Information provided by the user interviews

The user interviews suggested that projects had produced both policy and practice impacts, but that these were hard to trace to individual pieces of work. Most research from the FoW programme added to the general understanding of work issues, rather than informing specific policies. This suggests that by affecting the understanding of stakeholders, research can have an impact on policy-making at any stage,

By affecting the understanding of stakeholders, research can have an impact on policy-making at any stage, be it at the initial step of issue identification or at the final step of implementing a solution be it at the initial step of issue identification or at the final step of implementing a solution.

There was also a role for the FoW research in discrediting policy 'myths' about work, which were widespread prior to the programme. Policy-makers found it hard to remember specifics of research conducted during the FoW programme, but often knew a researcher's work more generally. Policy-makers felt they had been informed about the research through the media fellow's work (which is still used by some) and through personal consultation with researchers (networking). By knowing researchers, both policy-makers and practitioners could access research from the most appropriate source for their needs when they arose.

Policy-makers felt generally that research took too long to be published, but the FoW programme was known by many policy-makers. Practitioners were generally only aware of the research relevant to their practice.

## Illustrative summary of Case Study A

We conducted four case studies to investigate in detail the process of research and the translation of that into wider impacts. The case-study narratives were conducted and written up using the structure of the Payback Framework. To illustrate this, the next paragraphs provide a summary of Case Study A, which consisted of two grants from the FoW programme. They examined the psychological factors influencing women's decisions to return to work after childbirth. The research took place in the context of rising numbers of women combining work with early parenthood; the second award was designed to extend the first project. The first grant ran from 1998 to 2000; the second from 2000 to 2003.

Stage 0: topic/issue identification Phase One built on previous research by the researchers and two pieces by other researchers. Largely coincidentally, policy-makers at the time of the research were becoming interested in work–life balance issues generally, including women returning to work and ongoing gender segregation and the gendered pay gap. The PI said the interdisciplinarity of the FoW programme was significant and formative for her thinking on the issues once the research was in progress.

Interface A: project specification and selection The PI said that the first project for the FoW grant was designed without significant input from the programme participants, policy-makers, practitioners or reviewers. The second project, however, was more informed by the findings of the first study and the policy debate at the time.

Stage 1: inputs to research The first ESRC FoW grant was £84,880. In addition to the financial support from the ESRC the PI obtained corporate

sponsorship to the value of  $\pounds 10,000$ . The second grant was  $\pounds 108,560$ .

*Stage 2: research process* Phase One was a longitudinal survey of the post-pregnancy work outcomes for 412 full-time working women who were pregnant with their first baby, and three follow-up interviews of a sub-sample of 54. The subsequent study funded under the second phase built upon the previous project by extending the initial research in three directions:

- 1. The longitudinal survey was extended to the time of the first child's third birthday to examine the impact of any second child on women's work participation;
- 2. First-time parents were surveyed to look at mothers' and fathers' participation in paid work, recreational activities and household responsibilities; and
- 3. Women without children who worked full-time were surveyed to compare their attitudes and intentions with those of the women surveyed in the earlier study.

Stage 3: primary outputs from research Outputs from the grant application for both grants included a book, three refereed journal articles, and four chapters in edited volumes. The main benefit to future research from the Phase One grant was that it specified questions for the second grant. The PI was seconded to the position of Research and Strategy Advisor to the Department of Trade and Industry (DTI) in 2003. From that position she was able to shape a wider research agenda that was related to her own initial FoW work by commissioning research from at least three other research groups. In terms of researcher benefit, during the course of the grants the PI was promoted from lecturer to senior lecturer and then subsequently to professor. She was cautious about attributing these specific promotions to the grants. The PI did directly attribute secondment into government to the FoW research.

*Interface B: dissemination* The PI disseminated findings via standard academic publishing routes, and also to academics, practitioners and policy-makers through four non-refereed papers, and over 30 seminars, presentations and workshops. Seminars to policy-makers were particularly important and the networks of the FoW programme and its director were key in facilitating these. A seminar given in Whitehall shortly after the first project was completed (Houston, 2000) was considered the most important. The PI considered media coverage (national newspapers, local newspapers, magazines, and radio and television) to have been a vital part of the dissemination of her research.

Stage 4: secondary outputs: policy-making and product development It is difficult to trace the policy

outputs directly linked to the FoW project grants. However, the PI took up a position influential to policy outputs during the period of the awards. Interviewees emphasised that the PI and her research contributed to the policy debates and many policy documents in incremental and diffuse ways, and that this was largely attributable to her personal style and skill at reaching a policy audience. Findings from the research were relevant and useful to policies ranging from paid paternity leave, maternity leave, reducing the gendered pay gap, changes in childcare and even education policies. The PI mentioned several policy documents, including ones developed during her secondment to the DTI, to which she had contributed, or on which she had been consulted, or were ones written by authors to whom her research findings had been disseminated (see Box 3).

*Stage 5: adoption* The PI suggested that a large consulting organisation had taken up the implications of the findings about the need to plan women's return from maternity leave to introduce 'a woman-friendly and a business-friendly policy'. Unfortunately, we could not locate any research or evaluations that looked at whether these policy changes had affected practice within the organisation.

*Stage 6: final outcomes* It is difficult to attribute broader socio-economic changes to the projects specifically since changes come about as a result of many interacting forces. However, the PI and users noted potential benefits could include: better life satisfaction for parents combining work and parenthood, and reductions in gender segregation and the gendered pay gap.

*General observations* While the PI thought the project would probably have gone ahead without the FoW funding, she was unequivocal about the significance of the FoW programme in facilitating her dissemination of findings to the relevant stakeholders and in shaping her own career. The PI's position in government allowed an important transfer of ideas between researchers and policy-makers, benefiting both groups.

## Box 3. Specific policies influenced by the PI and FoW research

- Government White Paper on Work and Families (2003)
- Work and Families Bill (2003)
- Key Indicators of Women's Position in Britain (2003)
- Key Indicators of Women's Position in Britain (2005)
- Shaping a Fairer Future: Women and Work Commission Report (2006)
- Government Green Paper: Work and Parents: Competitiveness and Choice
- Various Equal Opportunity Commission documents on work and families from 2001–2006 (10 of which cite her)

## Discussion

Our evaluation sheds light on both the impact from the specific FoW Programme and the wider issue of the value of the Payback Framework in assessing impacts from social science research.

## The impact of the FoW programme and lessons for impact assessment

The FoW programme had significant impacts on knowledge, research and career development. While some PIs could identify specific impacts of their research, many found it difficult to identify actual policies they had influenced. Research seldom causes major changes in policy but often results in impacts such as stimulating debate, fine-tuning policy, dispelling myths and providing confirmatory support.

Various factors identified in the literature review (Nason *et al*, 2007) seem at least potentially relevant to the level of policy impact achieved, including the role of networks and the nature of the programme — especially the roles of the director and the media fellow. Previous studies identified the importance of networks in the dissemination and adoption of social science research findings (Yin and Gwaltney, 1981; Cave and Hanney, 1996; Molas-Gallart *et al*, 2000). However, Molas-Gallart *et al* (1999) reported that the ESRC's AIDS programme had achieved considerable impact despite having only an informal approach to management with a programme co-ordinator rather than a director.

Here, there is considerable evidence that the structure of the FoW programme played an important part in helping to facilitate networking and increasing impact. The FoW programme effectively combined the networks of the director and steering committee, and provided the researchers with access to these networks, as illustrated in Case Study A. Furthermore, the FoW media fellow enhanced the impact on policy-makers. This was achieved by working to a timescale suitable for policy-makers and setting the FoW research in context.

In terms of timing, it is argued that the best time to conduct an evaluation will depend on the impacts being assessed and the purpose of the assessment (Nutley et al, 2007). Furthermore, there is a need to seek a balance between allowing sufficient time for impacts to have been achieved and conducting an evaluation before records have been lost and recall proves too unreliable (Bozeman and Kingsley, 1997). Thomas (1985) suggests about 10 years is an appropriate time for social science research. For practical reasons such as still being able to locate interviewees, Molas-Gallart et al (2000) suggest it might be better to conduct assessments of the non-academic impact of ESRC research after about one or two years. We identified circumstances in which the evaluation can occur too late because certain impacts may have already come and gone, and cannot easily be captured by a later snapshot of policies and policy debates.

## The contribution of the Payback Framework to the assessment of the impact of social science research

The Payback Framework (Buxton and Hanney, 1996; Hanney *et al*, 2004) provides a structure for research evaluation that has been described as the most widely used approach for the assessment of the impacts from health research (Canadian Academy of Health Sciences, 2009; Banzi *et al*, 2011). The literature review conducted in this current study indicates the advantages of having a conceptual framework to organise the assessment of impact on non-academic audiences. A major strength of the Payback Framework is derived from the combination of a logic model of the research and dissemination process and a classification scheme for the immediate and wider impacts of research.

The logic model itself is informed by a major stream of research by Kogan and Henkel conducted 30 years ago (Kogan and Henkel, 1983) and recently updated (Kogan et al, 2006). This was a pioneering combination of concepts such as 'the collaborative approach', 'receptor functions' and 'knowledge brokerage' in relation to research commissioning and use by government departments (see also Lomas, 2000). Key parts of the model in the Payback Framework draw on Kogan and Henkel's work and focus on issues at interfaces between researchers and research users as being important in understanding how far impacts have been achieved. The logic model also helps identify where the various categories of impacts themselves might arise. The framework's multi-dimensional categorisation of benefits is widely seen as being appropriate for medical or health research; however, even for such research, difficulties often occur in assessing the later impact categories of health gains and economic benefits (Hanney et al, 2007).

Several dimensions arise when considering the framework's wider applicability. There are some outputs that seem to have a greater importance in social science than biomedical research, including contributions to books and informing teaching. Furthermore, overlapping questions arise in relation to the field of research and to the mode of funding. The current study suggests that some progress can be made in applying an adapted version of the categorisation to

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### Payback Framework to assess the Future of Work programme

social science research, but some impacts may be inaccessible to evaluation. In addition, social science research often demonstrates the complexity of social life and the intervening variables that complicate direct relations between inputs and outputs, making an assessment of its impact difficult.

From the literature review we noted the observation that a confluence of inputs and incremental 'knowledge creep and decision accretion' (Weiss, 1980) make it difficult to attribute policy change to a given input. The Payback Framework provides a structure in which to explore the context within which projects are developed, and therefore provides perhaps a better chance of addressing attribution issues even though difficulties remain. For parts of biomedical science there are formal mechanisms to review research systematically and, for example with clinical guidelines, use studies in a codified way; these mechanisms can offer tracers of policy influence (Hanney et al, 2007). There are fewer mechanisms in social science to synthesise research and use it in such codified ways.

Furthermore, this study highlights, as does a recent application of the Payback Framework to assess the wider impacts from cardiovascular research (Wooding *et al*, 2011), limitations in that certain types of findings can be difficult to analyse. Here, the 'myth busting' findings have been shown sometimes to have rather transitory impacts that can quickly be washed away again. In the cardiovascular study ('Project Retrosight'), the impact of studies with negative findings proved especially difficult to assess.

There are particular questions that arise in relation to the specific role that should be played by research councils such as the ESRC that use public money to fund research in a variety of modes ranging from responsive mode to more collaborative modes in which potential users of the research help to set the research agenda. The application of the framework to the FoW programme indicates its potential for application to programmes of social science research where there has been a considerable collaborative approach. How far the framework could be applied to assess the impacts from responsive mode social science research has not fully been addressed by the current study, and there are likely to be other logic models that could also be developed and applied.

The Payback Framework allows considerable flexibility in how it is applied, and can thus be used in a range of contexts. It can be applied through surveys and/or case studies, and in this current study we could compare the PIs' survey responses with our more detailed case studies. Our work confirms the finding of previous studies that researchers do not significantly exaggerate the impact of their work when responding to surveys (Hanney *et al*, 1999, 2007). The approaches used in the Payback Framework are compatible with the advocacy of a holistic reporting framework based on qualitative methods to evaluate research (Donovan, 2007).

Finally, despite the undoubted difficulties with tracing the impact of research forwards from the specific studies (Nutley et al, 2007), this current study suggests a higher level of impact on nonacademic audiences was achieved than is often assumed to have occurred. A recent review of assessments of impact in the health research field (Hanney et al, 2007) also found more such examples of impact and concluded that, for various reasons, tracing forwards from the research might lead to a greater identification of impact than studies that start with policy-makers and trace backwards to the research that might have influenced them. There are inevitably situations in which some impacts will remain hidden because neither the researchers nor the specific users interviewed know about how the research, especially social science research, has been used. Furthermore, some researchers are unwilling to talk publicly about the impact of their work.

However, the Payback Framework provides a way of attempting to trace forwards to identify as many impacts as possible from specific projects, programmes or the work of particular research teams. This means that it could potentially play some role in national exercises to assess the impact of researchers within a higher education system, and seems to be a potentially more satisfactory way forward than over-reliance on metrics.

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