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Survival of the Ideas that Fit: An Evolutionary Analogy for the Use of Evidence in Policy

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This paper explores bias in the use of evidence in policy. It argues that existing models of the evidence–policy relationship neglect the tendency for attention to be paid only to that evidence helpful to the interests of powerful social groups. An evolutionary analogy is used to explain how this bias arises, without the need for irrationality or conspiracy on the part of policy makers. Examples are given in the fields of drug, asylum and other policies, and the possible responses by researchers to the biased use of research evidence are discussed.

Introduction

The first flush of enthusiasm for evidence-based policy has given way to disillusionment. The hopes created by the accession of New Labour and its much trumpeted (and often quoted) commitment to using evidence (e.g. Blunkett, 2000) have withered as the evidence increases that policy is still decided without reference to the relevant research. Instead of evidence-based policy, we are hearing about ‘policy-based evidence’ (France and Utting, 2005; Marmot, 2004; Stimson, 2001). In this paper I will suggest that the exaggerated hopes for evidence-based policy, and some criticisms of it, stem from misunderstandings of the link between evidence and policy. Policy makers have been wrongly accused of incorrigible irrationality in their use of evidence. Opportunities for researchers to improve the use of the evidence that they produce have been neglected.

The very possibility of using evidence rationally to inform policy decisions is challenged by some interpretations of the link between knowledge and power. If one follows Foucault (1994) in arguing that power and knowledge are inextricably linked, then discussion of how evidence can influence policy becomes rather idle, as both are expressions of underlying power/knowledge. From this standpoint, efforts to reduce bias in the use of evidence are doomed, as the fate of research is to be caught up in irresolvable struggles over incommensurable frameworks of discourse. For example, some have written that:

scientific evidence is not a clear, accepted and bounded source. There is no such entity as ‘the body of evidence’. There are simply (more or less competing) (re)constructions of evidence able to support almost any position. (Wood, Ferlie, and Fitzgerald, 1998: 1735)

This image of a Tower of Babel of competing discourses threatens the possibility of progress through knowledge. According to Popper (1994) and Campbell (1969), this relies on open debate to move us towards less fallible explanations of natural and social phenomena. Popper provides an example of the use of the evolutionary metaphor to explain social development, which has a long, and sometimes dishonourable, history.

Most infamously, Herbert Spencer is credited with applying his summation of Darwin's theory, 'the survival of the fittest', to explain what he saw as the natural occurrence of social inequality.¹ Richard Dawkins has also used the language of evolution to describe how knowledge spreads into use through the transmission of 'memes'. He described memes as 'replicating entities' (Dawkins, 1976: 192), like genes, but made up of ideas instead of DNA. His theory was itself anticipated by Tylor's (1924) view that the spread of cultural practices is analogous to the spread of species. Lévi-Strauss (1963) criticised this idea on the grounds that practices do not directly reproduce themselves, but are reproduced through the people who carry them out, necessitating a close examination of their development.

This challenge is partly taken up by William Dunn (1993), who uses a 'jurisprudential' metaphor, in which evidence enters policy arguments as in a court of law. But in real policy arguments, unlike courts, there is no neutral arbiter. Even sophisticated pluralist accounts give this role of arbitration to the state (e.g. Stone, 1997), but neither its political nor bureaucratic representatives are free from powerful external pressures. The advantage of the evolutionary over the jurisprudential metaphor is that it enables analysis of how the power of these groups enters into the process by which knowledge is transformed into policy. This is not a feature of the Popperian model, which, as Dunn suggests, rests on positivist assumptions of the ability of superior explanations to overcome those which conform less closely to objective reality, without needing external support. But it is a feature of the proposed evolutionary analogy, which also rejects the self-contradictory position that knowledge cannot be distinguished from power (see Habermas, 1987).

Increasing inequality and insecurity challenges the legitimacy of the state and of those groups whose interests are preferentially protected by it (Bauman, 2000; Habermas, 1976; Nolan, 1998). For the purposes of this paper, powerful social groups can be thought of as including the directors of media corporations and the people they employ, managers of financial institutions, large donors to political parties, professional and other pressure groups, those who have the cash and inclination to hire lobbyists, as well as politicians and their officials.² In comparison to existing models of the evidence-policy link, the evolutionary analogy brings the influence of these groups into sharper focus.

Three existing models of evidence-based policy

The point of departure for existing models of evidence-based policy is Campbell's (1969) vision of the 'experimenting society'. The closest contemporary interpretation of this vision is seen in the linear model, which posits a direct link between evidence and policy. It uses an instrumentally rational approach for choosing the means by which to arrive at pre-determined ends (Parsons, 2002), or, in other words, 'what works'. It finds concrete expression in programmes such as the Cochrane and Campbell Collaborations, and other attempts to produce authoritative, synthetic knowledge from research, which is judged according to its methodological rigour and objectivity. The most common application of this model is supposed to be found in the field of evidence-based medicine, but actual instances of the direct use of evidence in policy are rare even in health policy (Black, 2001). It is usually suggested that there are too many competing ideas and interests for policy to be directly based on research (ibid.; Leicester 1999) and that the policy process is 'rarely characterised by rational decisions made on the basis of the best information' (Young *et al.*, 2002: 218). Nevertheless, rhetorical commitments to evidence-based policy

assert the need to rely on the objectivity of research evidence as an alternative to partial and biased explanations and responses.

A more sophisticated attempt to describe the evidence–policy link is given by the enlightenment model, developed by Janowitz (1972) and by Weiss (1977). Weiss carried out a study in which she asked government officials about their use of evidence. They reported that they agreed that research should be used in policy. However, the majority also reported that the people who decided on policy tended to ignore research that did not fit with their own beliefs and assumptions. This suggests the importance of the interaction within government of officials and politicians, who may be open to influence by research, but who also have their own interests that they will seek to support with the available evidence. Weiss interpreted her study as showing that research does not have a direct effect, but cumulatively influences the climate of opinion in which decisions are made. The idea is petrified in the image of a ‘limestone effect’, through which evidence seeps into policy, but in unpredictable ways (Thomas, 1987). But, there is little attention paid in this model to which bits of research get through into policy. In contradiction to Weiss’ respondents’ reports of the partial use of evidence, it apparently assumes that all evidence is equally likely to gain influence, and that the best evidence will set the limits of debate and inform policy discussions. On the basis of this enlightenment model, it was argued in 1975 that racism had withered in America because research had gradually disproved its tenets, and that the problem of illicit drug use would fade from political controversy, as effective methods had been discovered to reduce drug addiction (Gusfield, 1975). More recent publications, such as Herrnstein and Murray’s (1994) notorious *Bell Curve*, and developments in penal policy, challenge this enlightenment thesis, as academic and institutional racism have by no means disappeared from the USA (Fischer, Hout, Sanchez, Lucas, Swidler, and Voss, 1996; Wacquant, 1999), and research on the failures of drug prohibition and on advances in treatment and harm reduction has not solved controversies over the problem of illicit drugs in America (Reuter and Boyum, 2005).

The third, political/tactical model acknowledges the selective use of evidence in order to suit the short-term interests of policy makers. This is the closest model to that proposed in this article, but it has some shortcomings that may be overcome. It tends to focus the blame for the misuse of evidence on policy makers, and not on other groups who may be able to influence the creation of policy. Critics of this sort of use of evidence tend to decry the ‘politicisation’ of social science, and call for rational use of research (Young *et al.*, 2002). The problem with this is that it casts the political use of research as irrational (Sanderson, 2003), when it is highly, if instrumentally, rational for powerful groups to use research to further their own interests. In a context where it can be claimed that all ‘(re)constructions’ of research are in equal competition, and where there is widespread distrust of academic research (Mayer and Stirling, 2004), it is hardly surprising that people with the power to do so use research to further their own ends. The question becomes how political actors are able consistently to do this?

An evolutionary analogy

The proposed evolutionary analogy goes beyond the political/tactical model by also helping to explain how evidence can be used selectively to further the interests of powerful social groups, without relying solely on the deliberate connivance of policy makers. It

sees social structure, in addition to political tactics, as important in supporting selection in the use of evidence.

It uses an evolutionary approach to explain the pattern of selection. It starts from the assumption that a variety of ideas come from evidence and compete for attention in policy, as genes arise and compete for survival. The ideas may be facts, findings or recommendations that have been produced by academics, journalists, think tanks, pressure groups or others. Some of these ideas fit the interests of powerful groups and some do not. Ideas that do fit will find powerful supporters. Others will not. Those ideas that fit will therefore have groups and individuals that can carry them into policy, as would a gene be reproduced if it finds a place in organisms that survive. The ideas that do not fit will tend not to be picked up by people who have the power to translate them into policy. This evolutionary advantage leads to the survival of the ideas that fit.

The major advantage of this analogy is that it illuminates the biased use of evidence without relying on policy makers to be irrational, or the ability of powerful social groups to coordinate a campaign to ignore unhelpful research.

Mechanisms of selection

In contrast to the reproduction of genes, it is not the idea that gives its carrier the increased potential to survive. And it is not, as Dawkins suggested for memes, that the idea is 'advantageous to itself' (Dawkins, 1976: 200). Rather, it is the power of the carriers, and the choices they make on which bits of evidence to pick up, that confer advantage to ideas that suit the interests of powerful groups. A similarity to biological evolution is that the process of selection is complicated, messy and sometimes brutal. Powerful social groups are not monolithic. They have diverse memberships and divergent interests. They struggle over what policies will be proclaimed and implemented, and use various mechanisms to attempt to ensure that the evidence that suits their purpose comes to be recognised as legitimate.

Policy makers, businesses, political parties and pressure groups may 'trawl': fishing for evidence, hauling in the bits that suit their needs, and throwing back those that do not. They may also 'farm' evidence, by, for example, commissioning research, but only publishing and using those parts of it that meet the criteria that they set for the look and flavour of the evidence produced. Repetition is a useful tool in ensuring that attention is given to useful evidence. Groups that have a voice in the policy process can repeatedly refer to bits of evidence, which may be ripped out of context and based on methodologically suspect research. Through repetition, such evidence can become part of the accepted body of knowledge in a policy area. Powerful groups can also use 'flak' (Chomsky and Herman, 1988) to attack, silence or discredit evidence that comes into the public arena, but is not helpful to their interests. And they may be able to impose 'strain' (Chambliss, 1976) on people and organisations that produce and advocate unhelpful evidence, who may find that doing so is not conducive to a successful career or to organisational survival.

There are limits to the research questions that can be asked that reinforce selection. These include limits that are set by legal, professional and ideological boundaries. Different groups will also have different narratives of how social problems arise and how they should be solved. These narratives provide a frame into which evidence must fit if it is to enter policy. The extent to which social groups can impose their own narratives and

frames on a debate depends on their relative legal, professional, financial and ideological power (Green, 2000; Hajer, 1993). Limits are also set by the decisions of those people who pay for research on what they are interested in buying.

Those groups with the most power in society will be most able to implement these mechanisms, and so bring attention to research that suits them, and encourage the ignorance of research that does not. This does not mean that their power dominates the use of evidence entirely. Weaker social groups, including trade unions, environmental pressure groups, other campaigning bodies and self-organisations of the poor and socially marginalised may also attempt to make these mechanisms work for them. However, they have less access to the sources of research and its dissemination; they are less able to impose their interpretations of research evidence on a wider public. They have less opportunity to trawl or farm research, to create flak, to repeat favourable evidence or to impose strain on those who produce or disseminate unhelpful research. And they have less of a role in framing policy.

Selection in action

So far, this evolutionary analogy has not been rigorously tested against actual uses of evidence in practice. It is presented here in order to invite discussion of how it may apply to various areas of social policy. However, it is quite easy to find illustrative examples of the selective use of evidence in policy making; especially, it seems, in crime, immigration and health policies.

The British Drug Treatment and Testing Orders (DTTO, a sentence for drug dependent offenders introduced in the Crime and Disorder Act 1998, since replaced by the Drug Rehabilitation Requirement) were inspired by the expansion of drug courts in the USA. A report by one of the instigators of the DTTO policy (Russell, 1994) trawls in references to evaluations of drug courts, all of which are positive, without mentioning any of the negative evaluations, or mentioning that the positive evaluations offer good examples of selection bias; basing their results solely on the proportion of people who completed the programmes, and often comparing them to those who dropped out early, in defiance of accepted methodological standards (Stevens *et al.*, 2005). Before the DTTO was rolled-out across England and Wales, a study of three pilot areas was commissioned which concluded 'we could hardly portray the pilot programmes as unequivocally successful' (Turnbull *et al.*, 2000: 87). The response in terms of policy was typical of the 'farming' mechanism. The negative findings were not publicised and the roll-out went ahead.

A second example of selection is the use of research on the impact of asylum policies in Europe on the number of asylum seekers. This research found that direct pre-entry measures (e.g. visas, sanctions on airlines) have had the greatest impact on the number of asylum claimants. But 'measures such as reception facilities, detention and the withdrawal of welfare benefits appear to have had much more limited impact' (Zetter *et al.*, 2003: xiii). Restrictive policies also have counter-effects, including increased illegal immigration and displacement of asylum flows to other countries.

The official response provided examples of 'farming' and of 'strain'. Publication of the research was delayed for two years, findings on the lack of effect of indirect controls and on their counter-effects were ignored and such controls continued to be tightened (e.g. in the Nationality, Immigration and Asylum Act 2002 and the Asylum and Immigration Act 2004). One of the authors of this research wrote in a letter to *The Guardian* that this

was 'part of a general and worrying trend that academic research is being used to buttress government policies in a way that is illegitimate and which depends upon an extremely partial reading of research results' (Griffiths, 2003).

So far, these examples show only that politicians and policy makers are capable of making selective use of the research that they commission. They could fit with the political/tactical view of policy-makers making irrational uses of evidence for their own purposes. However, they should be viewed within the context of argumentation over policy that occurs around as well as within the state. The people whose interests are most directly harmed by these selective uses of evidence, being drug-using offenders and would-be immigrants and asylum seekers, are among the least powerful in these arguments. On the other hand, powerful interest groups have an interest in the use of evidence to bolster such policies. Powerful social groups have, for example, long benefited from the use of migrant workers, both as cheap labour to boost profits and as scapegoats for social problems that result from inequality (Winder, 2005). As the 2005 UK general election showed, the government faces a great deal of external pressure to be seen to be tough on immigration. Opposition parties and right-wing newspapers can target a great deal of flak at politicians and researchers who make the case for immigration. A rational debate over the pros and cons of asylum policy is unlikely to occur in such a context. The reasons for this are not merely tactical, but also structural, as it is social structure which explains the relative power that groups can bring to these arguments and processes of evidence selection.

External influences on the use of evidence are clearer in some examples from the field of health and food policy. In 2003, the World Health Organisation sought to create international guidelines that stated that daily intake of sugar should not exceed 10 grammes per person, based on the evidence of the damage done by excessive consumption to human health. This led to the imposition of heavy 'strain' on the WHO, which faced criticism, including calls for the resignation of its Director from US officials, who were themselves pressured by the sugar corporations who are major donors to the political parties of the USA (Boseley, 2003). After these pressures had been imposed, the 10g recommended daily limit on sugar intake was not included in the final document (World Health Organization, 2003).

In the UK, there is the example of the government's alcohol harm reduction strategy. The government initially commissioned a group of 17 independent experts to provide the evidence on which to base this strategy. Their considered view was that reducing alcohol-related harm should involve limiting its availability and increasing its price. This conclusion would obviously not be popular, either with many voters, or with the alcohol industry. One of the ways the alcohol industry seeks to maximise its profits is by funding the Portman Group. This was the only 'alcohol misuse' organisation mentioned in the government's strategy, which adopted the ideas and language of the alcohol industry. Alcohol Concern, the Medical Council on Alcohol and the National Addiction Centre were not referred to (McNeill, 2004). Eventually, the government published a strategy that bore so little relation to the evidence-based recommendations of the experts that several of them were moved to publish their own report, which contradicted the government's strategy (Academy of Medical Sciences, 2004). It seems that this is a clear example where external pressure on government by a powerful group has influenced the use of evidence in policy.

Internationally, the issues of genetically modified (GM) organisms and climate change also provide examples of the use of trawling, farming, flak, strain, repetition and selective

framing by actors outside the state. Much of the research on GM food is funded by the corporations who hope to profit from its application. Several researchers have found that raising questions over the safety and efficacy of GM food is not conducive to security of tenure in Universities that are funded by these corporations. For example, Dr Arpad Pusztai's research suggesting that GM potatoes may be poisonous to rats (Ewen and Pusztai, 1999) led to him losing his job, and to threats that the editor of *The Lancet*, which published some of this research, would also lose his. Dr Ignacia Chapela was also targeted for flak and strain when he published an article in *Nature* reporting contamination of native corn in Mexico by a GM variety (Quist and Chapela, 2001). He was subsequently refused tenure at the University of California, where a number of colleagues criticised his work and benefited from a multi-million dollar deal with the biotechnology company Novartis.³

Corporations that control the production of raw materials are also extremely powerful in the field of energy policy, which has the greatest effect on climate change. The material interests of these corporations are damaged by international policies such as the Kyoto protocol. Given the potential damage of Kyoto to oil company profits, it is not surprising that the tiny minority of scientists who deny the role of human activity in climate change have found ready supporters in the oil industry. More worrying is that the most powerful government on Earth has pressured its own scientists to misrepresent their own findings in order to support the oil companies' position (Union of Concerned Scientists, 2004) and continues to dilute international efforts to combat climate change (Townsend, 2005).

It should be noted that in none of these cases is the interest of any one group able fully to determine the use of evidence. Nor is it the case that evidence does not influence the terms in which these controversies are played out. Debate over DTTOs, immigration policy, GM food and global warming is alive and well. Research evidence is not absent, but crucial to the development of these debates. However, its use is not often directly linear, ideally enlightened or purely tactical. These are selected examples, but they are by no means isolated. In several fields, it is evident that structural, as well as tactical interests of powerful social groups often shape the use that is made of evidence in ways that pervert the promise of evidence-based policy making.

Avoiding bias

While scientific evidence may not be accepted unquestioningly as a clear, objective source, there is a body of scientific evidence. The process of scientific production makes this available for discovery and analysis through various forms of synthesis. Through open debate over the results of such reviews, some positions can be found to be false, in that they offer inadequate accounts of the phenomena they attempt to explain (Layder, 1998).

Examples of propositions that the balance of scientific evidence has found to be untrue are that Saddam Hussein was storing weapons of mass destruction in Iraq in 2003 (Powell, 2003), that 'nothing works' in preventing criminal recidivism (Martinson, 1979), that smoking tobacco does not increase risks of cancer (Tobacco Institute Research Committee, 1954) and that human activity is not contributing to global warming (see van den Hove, le Menestrel, and de Bettignies, 2002). The existence of proponents of alternative views shows that it is possible to question the mainstream and to insert dissident positions into the debate. But acting as if these propositions are true has been and will be disastrous. If we are to have any prospect of improving the human condition, then we

need to continue to develop knowledge (of which research evidence is one element) that can inform action; knowledge that we can use until superior explanations and possibilities arise. The idea of evidence-based policy is that this will happen. It often fails in practice, not only because research evidence is contested, but because its use is affected by processes of selection that make it less likely that superior explanations and solutions will be put into practice.

The question, then, for researchers becomes how to avoid such selection ruling their ideas out of contention for policy impact. The most common recommendation in the literature on the use of evidence in policy is the need for better links between researchers and policy makers (Leicester, 1999; National Audit Office, 2003; Nutley, 2003; Nutley *et al.*, 2002). This can be seen as the Quaker imperative to 'tell truth to power'. But others have suggested that this is futile, as the powerful often already know the truth, and do not care much about it (Chomsky, 1996). Other writers have suggested that we should try to create a more deliberative, communicative approach to policy making (Parsons, 2002; Sanderson, 2003). In order to do this, all those who are to take part in the deliberations, including those who are normally excluded from them, should have access to the best available evidence. This implies that researchers should make their evidence available through the media and through 'open source' publication (Schweik and Grove, 2000), and should avoid signing contracts that do not permit them to publish their research.⁴

Before concluding, I provide three caveats. The first is that I am not suggesting that all policy uses evidence in this way. It seems that that selective use of evidence may be more likely to occur in more contentious areas of policy, where the legitimacy of government action is most strongly challenged (Tonry, 2004). Nor am I proposing that research evidence should be the only determinant of policy. Research evidence is itself often absent or contradictory, value judgements that cannot be decided by research alone will always play an important role, and other types of evidence, such as professional experience and the views of the people that policy targets, should also play a part. The last warning relates to the lack of empirical testing of this analogy. I have developed it, in the context of theories of social evolution, from my view and previous comment (e.g. Berridge and Thom, 1996; Erickson, 1998; Mair, 2004; Pitts, 2001; Witton, 2003; Naughton, 2005; Tonry, 2004) on the use of research in the field in which I work (drugs and crime). The analogy needs more testing in this and other fields before it can be put forward as a reliable description of the evidence-policy link.

However, I do think that an evolutionary analogy has the potential to add to our understanding of this link. It may be a closer fit to the actual use of evidence than is provided by the linear model. It allows examination of the filtering process that influences what evidence gets to influence the climate of opinion in which policy is made. It explains how the use of research can be biased, without always blaming policy makers for acting irrationally, or conspiring to further their own interests. It suggests that evidence can be used in policy to bolster the legitimacy of powerful social groups. However, it does not accept that evidence is irrelevant or that the idea of using evidence in policy making should be abandoned. The exercise of power creates resistance. The production and dissemination of evidence has the potential to aid resistance to powerful but damaging interests. If researchers make sure that their findings are available to all the people who have an interest in them, then not only can truth be told to power, but the chances are increased that power can be given to truth.

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Notes

1 This has been echoed in more recent years by Hayek (1988), but these ideas are plagued by self-contradiction and dissonance with the empirical evidence (Sahlins, 1977; Tilly, 2003).

2 Compared to these people, the influence of academics and researchers is said to have waned over the last 40 years (Sampson, 2004), although claims that policy should be based directly on evidence can be seen as an attempt to reassert their authority (Schwandt, 2000).

3 Following a lengthy campaign by supporters, a lawsuit and an appeal to the new Chancellor of Berkeley, Dr Chapela was eventually awarded tenure.

4 Outraged by a research agenda that supports political priorities rather than the development of knowledge, at least one academic (Walters, 2005) has, for example, called for an academic boycott of work for the Home Office (which, in contrast to the Department of Health, does not give its externally contracted researchers the freedom to publish the results of their own work).

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