

## **Doing ‘health’ research in an unhealthy research environment \***



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If research produces knowledge about health, and knowledge is essential for improving health, then health research improves health, particularly through policy. Health transition research is exceptionally important to the production of useful knowledge (Caldwell 1990:xiii) because it deals with the causes of improved health over time.

While the logic is sound health research is not. It is a contentious field currently producing more confusion than enlightenment, in which continuing uncertainty means that it is difficult to identify and apply genuinely useful knowledge. Health research, including health transition research, is distributed over a number of fields which in themselves comprise separate academically-based disciplines and subdisciplines. These fields compete with one another to control research and funding; they do not work together to solve problems of pressing importance to health related human welfare. While there are exceptional individual social scientists, who conduct and support genuinely co-operative interdisciplinary research, their best efforts may not be able to transform a research environment which makes the production of useful knowledge difficult.

In the present research environment it is generally true that most health research is done to advance the welfare of a field and the experts in it. The competition between fields means that the overarching goal of all social science research — the improvement of human welfare — is easily lost in the struggle for disciplinary hegemony. The purpose of this paper is to explore the intellectual and institutional circumstances which create this counter-productive, welfare-negative research environment, and suggest how it might be reformed.

### **Producing knowledge by defining, measuring and explaining ‘health’ for policy purposes**

All research in both the natural and social sciences begins with a set of fundamental concepts (McInnes, forthcoming). Concepts are the building blocks that make both measurement and analysis possible, thereby influencing interpretation, and the implications drawn from research for policy purposes.

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For example, we all know that the world's population has undergone a mortality transition. Individual life spans lasting seventy years or more used to be rare; now they have become the norm in developed countries. This useful knowledge is beyond contention because mortality trends are easy to measure. Mortality can be measured easily because it can be conceptualized and defined easily<sup>1</sup>.

But when we ask if world health increased, decreased or was conserved as death rates declined over the last century, the first problem we confront is what the concept 'health' means.

Dead bodies share an end-state physiology, but those who think of themselves as healthy, describe themselves as such, or are called healthy by others, whether family members or professionals, have never been identical in any way (Das 1990). Health claims can be made about physiological or mental states, or forms of behaviour. A physically healthy individual may not behave like a mentally healthy person and vice versa. (Ahmed, Kolker and Coelho 1979:9). Persons afflicted with a fatal disease may nevertheless feel healthy; those classified as healthy may think of themselves as sick. In any event there has never been a neat biological basis for crisply dividing healthy and unhealthy individuals. Moreover as an adjective, 'healthy' can refer to individuals or populations, so that an unhealthy individual can be a member of a healthy population and vice versa. This complexity means that 'health' does not have an essential meaning; it is a naturally vague, multidimensional concept, which can only be given a specific meaning in a shared context which is likely to be impermanent. (Johansson 1993).

But until people can be classified as healthy, according to some standardized criterion, we cannot count or measure a healthy population, or generalize about health trends. This does not mean that individual experts cannot generalize about health or the health transition; obviously they do. It simply means that they make a wide range of conflicting and confusing generalizations, each of which has different policy implications. Some recent examples follow.

The author of a new book on emergent infectious diseases emphatically declared that the health transition was now an 'embarrassing myth'. He defined the health transition as a 'new state of physical well-being' based on the vaccine and drug-related conquest of common infectious agents (Horton 1995:26). Since diseases like HIV, the Ebola virus, and the Hantavirus have not been conquered, and several older diseases like TB and malaria have escaped effective control, it was logical to conclude that the health transition had come to a halt. By implication its resumption would depend on better methods of disease control, and hence on policies (including what research to fund) focused on biomedical methods.

Very different approaches to definition are possible. For example, Arthur Kleinman, Chair of the Department of Social Medicine at Harvard University, insisted that optimistic stories about a global transition to improved health (the health transition) should no longer be told, given the existence of over 100 armed conflicts in the world today, 40 million displaced people, and the baneful effects of development on the rural and urban poor (Kleinman 1995:13). Here Kleinman implicitly defines 'health' as something inseparable from political and economic security, which means that producing knowledge about political stability and economic development is more important than research on methods of disease control.

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<sup>1</sup> Recent technological advances have made it possible to separate brain death from heart death. Once death becomes multidimensional (i.e. there are two kinds of death) disagreements naturally arise about which dimension matters more, and thus how specific cases, in which the two dimensions are not congruent, should be handled. Thus, the need for formal policies arise based on defining 'death' for social purposes.

John Caldwell invented the concept 'health transition'. As a demographer and anthropologist Caldwell has long promoted the idea that the diffusion of better health depends upon changes in the health-seeking behaviour exhibited in households or local communities. Behaviour patterns which prevent disease, or which assist recovery from it, exemplify the kind of progress built into the concept 'health transition' (Caldwell 1990:xiii). This is a cultural orientation to the health transition, because it emphasizes changes in learned behaviour encouraged by education. It shifts the focus of research to the micro-level, where millions of anonymous men and women make daily choices; and it confers a particular importance on the behaviour of women, who manage households and care for the sick. This definition of what the health transition means asks policy makers to pay more attention to education, particularly to women's education, than to biological research on new diseases, or to macro-level political stability, or to development research.

If new methods of disease control are thought of as driving the health transition, then ordinary people are perceived as passive beneficiaries whose welfare is served by scientists and public health workers. Similarly, if bad politicians disrupt the societal and economic foundations for health, then ordinary people are likely to be thought of as their victims. Clearly political and development research must come to their rescue, without having to focus on what just plain folk think or do.

In short the focus of health research and policy depends on how 'health' and 'health transition' are conceptualized. That is no doubt why David Reisman (1993:14) began *The Political Economy of Health Care* by aptly observing:

Equality in health is important. Sadly, it is also ambiguous: different people have in mind different things even when they employ the same words and phrases. If, therefore, the policy-maker is to take equality in health as an appropriate policy objective, he will clearly have to make it his business to decide what it is, precisely, that he is being sent forth to make more equal.

But precise definitions do more than simplify matters for puzzled but well intentioned policy makers<sup>2</sup>, concepts, once defined, lead concerned officials down a particular mental path (funds in hand) towards the set of health experts who 'own' the field at the end of that path. Within any particular academic field shared concepts make the specialized production of knowledge possible, but concepts also function as mini-programs which covertly instruct researchers how to, and how not to produce knowledge. Definitions implicitly program research behaviour by drawing boundaries around a problem, and then covertly selecting what kinds of data (from the large set of all possible data) are relevant or irrelevant to it. Obviously the data-information identified as 'most relevant' will limit the choice of appropriate methods (qualitative or quantitative), and together, concepts, data and methods will constrain interpretation (Johansson 1990).

As E. A. Wrigley (1988:131) has argued: 'In relation to broad issues of interpretation, empirical evidence is seldom decisive'. In other words, facts do not speak for themselves, because they do not have a voice outside a conceptual context which let them speak. In different conceptual frameworks the same data become interpretable in a number of diverse ways, sometimes in opposite ways.

Methodology offers us no escape from conceptual determinism. Dr. Chitr Sitthi-Amorn (1991:433) of Chulalongkorn University, ended his review of an entire book on methods for

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<sup>2</sup> Not all policy makers are well intentioned or dedicated to improving human welfare rather than their own personal welfare (Kunitz and Levy 1995). Human failings on the policy side compound the problem of applying useful knowledge to health improvement. But the focus in this article is on the role of academics in making the generation of useful knowledge difficult.

studying the health transition with the conclusion there was 'no point in debating the relative merits of different methods in isolation, apart from a discussion of the conceptual questions that need clarification'.<sup>3</sup> And he is right. As long as empirical research on health must begin with concepts which are well defined and potentially measurable, 'health transition' history will never be settled by simple data-gathering, or the use of better methods (Johansson 1992:87-88).

Policy makers who want to sponsor field-neutral research, based on some universally suitable method for producing knowledge about health, do not usually have that option. All they can do is seek knowledge and advice from experts trained to produce knowledge in field-specific terms (Pahre 1995). Even the most cursory survey of modern academic research will remind us of how differently separate fields define 'health' and explain the course and cases of the 'health transition'.<sup>4</sup>

Demographers, for example, routinely equate the study of health with the study of mortality (Murray, Yang and Qiao 1992). Therefore the health transition equals the mortality transition. This mortality oriented approach implies that any individual who is alive possesses health to some degree, and therefore populations composed of relatively long-lived individuals are healthier than those whose members lived shorter lives.<sup>5</sup> Since death rates are still going down according to recent data (World Bank 1993) then the health transition is continuing, despite new diseases, more wars, widespread poverty and an increasing refugee population. Fortunately for demographers their commitment to using mortality data to measure health has broad appeal across all modern cultures, but it implies that health policies must produce the postponement of death in order to be judged successful.

Epidemiologists do not agree that longer lives necessarily mean healthier lives. Older individuals have been exposed for longer periods of time to the risk of falling ill, and it is sickness not death which signals the loss of health. Therefore health policy should be about identifying and minimizing all forms of disease, not just those relatively severe forms which clearly shorten life. Health transition history should be about the discovery, reporting and management of every disease, not just those designated as causes of death. In short, health history is disease history.

The most famous event in modern disease history is the epidemiological transition, understood as the decline of infectious diseases and their replacement by chronic diseases as leading causes of death (Omran 1971). But one way to interpret the epidemiological transition is to assume that since one set of diseases (chronic) simply replaced another set (infectious) as leading causes of death, no 'real' gains in health were made as mortality fell. Health, in other words, is a historical constant that undergoes no transition over time even as disease patterns change.

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<sup>3</sup> In the series of three volumes on the health transition published by the Health Transition Centre only three short essays are devoted to issues of conceptualization. All of them are in the first volume, the authors being Etienne van de Walle, Alberto Palloni and John Cleland. Together these three essays total six pages. In contrast, an entire volume in the series (the third) was devoted to methodological issues.

<sup>4</sup> See Pol and Thomas (1992), whose stated purpose is to allow academic and professional audiences to improve their demographic and epidemiological skills, which is perhaps why health is defined as 'the health status of the population', and health care as societies' arrangements for improving 'health status'. This deliberately vague approach to definition leaves room for any kind of specialist, but no particular conclusions.

<sup>5</sup> But Stolnitz (1991:204-205) warns against using crude death rates for comparative purposes, because a population with a younger age structure can have a lower crude death rate than an older population with a higher life expectancy.

In general most health policy research has been dominated by biomedical approaches to defining health. These are based on the 'the great equation' which virtually defines 'health' as the delivery of modern medical care (Graubard 1994:vi). From this perspective the health transition can be conceptualized as the retreat of diverse forms of folk medicine and the global advance of medical care based on scientific knowledge.

When mental health professionals decided that their work was being undervalued by the biomedical tradition, they urged policy makers to adopt a broader definition of health. Ahmed, Kolker and Coelho (1979:xi) explained why 'health' should include various psychosocial dimensions, and therefore why specialists in mental disease should be admitted to the circle of medically certified professionals qualified to do socially relevant, funded, health research. Their point of view suggests that there may be a mental health transition which is related to but separate from a physical health transition.

Most social science definitions of health are usually critical of biomedical definitions, physical or mental, arguing that they focus too narrowly on the onset and treatment of symptoms in isolated individuals, and not the 'real' causes of disease. These 'real causes' are embedded in the social and economic environments which expose people to various risks, and thus cause disease and premature death. Thus, social scientists tend to treat education, peace, occupation, unemployment, development and even human rights as the real determinants of health, and, in an indirect way, the real cure for disease. Medical care, if considered important at all, is defined so broadly that it can be delivered by folk practitioners or women who manage illness at home, not just doctors. In this way the expertise of social scientists (which lies in the statistical analysis of large data sets often based on surveys) becomes as important or more important to 'health' research than medical expertise, a claim which provides the basis for seeking generous financial support from governments and foundations.

Among social scientists some health economists have divorced health research so completely from biology and medicine that they treat poverty as the only real cause of ill health.<sup>6</sup> It is assumed that as individuals benefit from rising real incomes in the course of economic development, they will automatically invest more resources in their own health (or the health of their dependants) particularly through better nutrition (Frank and Mustard 1994). Income-based, nutrition-centred approaches to health and mortality history deny that delivering medical care to the afflicted has any value, even now (Hadley 1982).<sup>7</sup> But when economic growth is perceived as driving the health transition, then health history becomes a sub-field of economic history, along with mortality history. Ironically, ordinary people do not become important decision-makers; instead their decisions are interpreted as a manifestation of some universal health-seeking rationality, rather than educationally mediated responses to information and its application in specific social contexts.

Economic perspectives on defining 'health' can be so all-encompassing that they fail to distinguish between investments in health *per se*, and all forms of investment in human capital or economic development. But they can also focus very narrowly on specific kinds of economic data which lend themselves well to standard methods of statistical analysis. If it is assumed, for example, that healthy people show up for work while unhealthy people do not, then time off work related to illness can be defined as a measure of health. Since the modern fall of mortality has been accompanied by rising numbers of adults who report themselves as too sick or disabled to work, it is possible to argue that declining mortality is increasing the proportion of unhealthy adults in developed populations. This fact can be interpreted as proof that health has an inverse relationship to mortality at the population level, because lower

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<sup>6</sup> For a survey of health economics see the 'sampler' collection of essays in *Daedalus* 1994.

<sup>7</sup> Hadley explains the extent to which the attack on medicine depends on the use of certain statistical methods, and why those methods can be misleading.

mortality means that more frail (and sickly) adults survive for longer periods of time (Riley 1990). From this particular economic perspective, the modern health transition looks like a transition to poorer health. But this whole approach requires the 'expert' to assume that data about who shows up for work are a straightforward reflection of real biological failure.

Obviously, sociologists or anthropologists of health find such assumptions objectionable (Helman 1990). They regard 'health' and 'disease' as socially constructed concepts, which do not exist independently of people's culturally conditioned perceptions and learned behaviour patterns. Thus, the data on morbidity which we use to measure disease (as the absence of health) tell us more about how people have been trained to form health expectations, identify their symptoms as diseases, and interpret the implications of being sick in terms of aid-seeking behaviour. When ordinary people are given very high health expectations, as they have been in developed countries, and they know a lot about disease, as they do in these countries, benefits for being sick are generous, as they are in most high-income countries, and reporting systems are well developed, as they are in all the developed countries, then the amount of reported disease or disability can be expected to rise even as mortality declines (Johansson 1991).<sup>8</sup>

If we ask who is right (i.e. which definition is right and which set of experts are likely to produce knowledge for policy purposes) we are asking the wrong question. All of the definitions of 'health' and associated measurement strategies can make good sense in some context. Vague concepts like 'health' are vague because they stand for a set of related but distinct phenomena. Real world complexity makes the existence of an umbrella concept convenient for abstract purposes, but meaningless for most practical, policy-related purposes. When action is required, agreement on meaning is required, and what particular meaning is 'true' depends on what particular problems are being faced at a particular time in a particular context. For all practical purposes there are several, equally real health transitions.

As conditions change and perceptions change new contexts can give rise to new meanings for old concepts like 'health'. Most of the contributors to the influential volume of essays, *Reaching Health for All* (Rhode, Chatterjee and Morley 1993) are health reformers, who have worked in villages in developing countries. Their experience influences them to perceive health as a feeling produced at the community level by confident adults institutionally empowered to act on their own behalf. The general idea seems to be that progress can be anything which properly democratic local groups decide to call progress, because it enhances their sense of well-being. From this perspective the 'hard' data so highly valued by conventional social scientists seem irrelevant. If building a road fosters a greater sense of well-being than building a school or a clinic, then health policy must favour the road.<sup>9</sup> After all, if people live longer lives, but feel worse about being alive, then who is to say that they are healthier? (Wildavsky 1977). In general, this radically subjective approach to health fits in well with modern tendencies to believe that health is a mental state, rather than 'mere' biological freedom from disease. However, it also puts the short-run interests of adults above the long-run interests of those who are less likely to have a voice in local affairs, for example women and children. Subjective health transitions always run into trouble because not everyone's perceived interests are alike, and the question remains: whose subjective sense

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<sup>8</sup> Generally as morbidity rises in the developing countries the commonly reported diseases become less severe (i.e. they are less and less associated with a high risk of dying in a limited period of time). Moreover fewer people reporting disease have two or more life threatening diseases at once. People can report more disease even as they become healthier because the diseases they report are not likely to cause death, and they rarely have more than one severe disease at a time.

<sup>9</sup> *Reaching Health for All* is filled with compelling cartoons, a few flow diagrams, some data on nutrition, but almost no data on mortality or morbidity.

of well-being should determine the course of a local health transition, assuming such an elusive form of change could be tracked?

Historians as generalists do not have a professional stake in some particular definition of health, or some particular approach to health transition history. Potentially this leaves them open to all the complex and diverse dimensions of health, and how they change and interact with one another over time. Nevertheless since health history has so many potential dimensions — demographic, epidemiological, medical, bureaucratic, economic, cultural, psychological, political — a set of 'unbiased' historians is likely to produce a set of books with little in common. While interesting in themselves, idiosyncratic health histories would probably produce still more confusion about the causes of the health transition, and their implications for present policy.

Even so, historians are used to dealing with complex systems; they are tolerant of research that does not produce simple answers. But policy makers, who want guidance for choices that must be made now, are not. They want simple answers with clear implication, and, for the most part, social scientists are trained to provide those simple answers in field-specific terms.

Ordinary people, men, women or children, have no say on how research is produced, interpreted or applied to their welfare through policy. Conventionally trained social scientists (including social science historians) work for other professionals, who support their research in laboratories, institutes or far-flung locations. When those who fund the production of knowledge demand simple answers, they provide powerful incentives for knowledge producers to compete with one another by radically oversimplifying complex problems. This involves constructing 'proofs' or models that begin by assuming that one all-purpose definition of health will suffice to identify key variables and efficiently generate the right answers for all policy purposes.

Given that there is no real context-free meaning of 'health', and thus no key variables, or universally suitable method of analysis, the resulting competition between rival experts produces nothing more than endless disagreement and confusion. Bombarded by conflicting answers, policy makers can find themselves paralysed; or, if they act despite high levels of uncertainty, they can send health policy off in an unproductive direction which causes premature mortality (Caldwell and Caldwell 1995).

Those professionals involved in the movement to improve child health are acutely aware of this problem. Carol Worthman (1995:10) describes ethnopediatricians as believing that 'programmatic efforts to improve outcomes for children have been hampered by conceptual polarities and bureaucratic exigencies', so that children's needs with respect to health are 'balkanized among competing disciplines and agencies'. An abstract war between balkanized experts probably wastes real children's lives, even if their obscure deaths cannot be televised for the evening news.

Although intellectual diversity cannot be suppressed without destroying the freedom of thought and speech essential to any kind of research (Barnes 1991), we must ask ourselves if the form of unrestrained intellectual competition currently encouraged by the institutional structure of research is doing more harm than good to the health-related welfare of the living. Economists might argue that a free and highly competitive market in ideas has to be just as beneficial for health research as it is for the production and consumption of other goods. But there is no free market in ideas about health. Ideas, facts, methods and interpretations related to health policy are produced by field-specific experts according to standards set by their fields (or sub-fields). Field-specific experts are like the owners of a firm who reduce their own profits when they buy the 'products' (definitions, facts, methods) produced by rival firms. Within the field-as-firm, individuals who exhibit a preference for 'foreign' concepts, data or methods are thought of as disloyal or even incompetent by their colleagues. Those experts

whose tastes threaten their colleagues are unlikely to be admired or promoted. In the social sciences, the interests of individuals are so bound up with the interests of their fields that they are not free to shop around for the best ideas. They are under strong social pressure to protect their own welfare by advancing the interests of their field. Fields-as-firms would much prefer to monopolize research by driving their rivals out of business, not co-operating with them to produce a better product and share the profits. Competition to monopolize the production of knowledge stifles the free exchange of ideas and necessarily limits the amount of genuine interdisciplinary research done on health problems for policy purposes.

### **Entrenched institutions and interdisciplinary research**

We need not imagine that social scientists who place the welfare of their field (and thus their own interests) above human welfare do so because they are cynical or unprincipled. Rivalries among social scientists who reduce all complex phenomena to field-specific terms are made, not born. Each specialist, whether demographer, epidemiologist, biologist, doctor, psychologist, economist, sociologist or anthropologist was trained to define health in field-friendly terms; they were not asked to consider the merits of alternative approaches. Even worse, training sometimes means making other fields seem ridiculous or irrelevant. When experts meet experts from rival disciplines they have all been conditioned to compete with or ignore as 'the enemy', interdisciplinary research does not get off the ground. Interdisciplinary conferences or research projects create doubt and anxiety which must be resolved. Within a field the expert who keeps the faith will be rewarded, and those who doubt (do interdisciplinary research) will not be trusted or admired unless they are very exceptional human beings.

When demographers insist that mortality data are always the best and most universal measure of health (Murray et al. 1992) they are proving that all health research must involve their expertise. The same is true for epidemiologists who attribute supreme importance to the morbidity data which demographers rarely look at. Health economists who make income levels into a universal measure of health are known to have been deliberately trying to undermine the importance widely attributed to medical care, thereby weakening the near-monopoly biomedical experts have had over health research (Hadley 1982). Naturally enough these natural-science experts fight back by resisting the invasion of social scientists into health research. Radical health reformers devalue most forms of natural or social science expertise, while elevating the importance of the political and anthropological skills they themselves happen to have.

Given the demand for simplification coming from policy makers, and the rivalry between academic fields, combined with the accommodating vagueness of the concept 'health', we cannot expect that assembling an interdisciplinary committee of famous experts is likely to produce a consensus which improves health-related human welfare. Since any simple, one-dimensional, definition of health would automatically advance the field-dependent interests of some experts at the expense of others, the most likely outcome will be a polite failure to agree on anything, combined with a determination to keep the interdisciplinary committee going as long as support is forthcoming.

When the Committee on Behavioural Health Research in Thailand set out to change health related behaviour, a suitable array of experts was assembled and charged with identifying those behaviours which were most important to health (Sitthi-Amorn 1991:433). It should not surprise us that they could not agree on what these were. Although every individual on such a committee might be genuinely committed to improving their country's health, as experts they represent different fields, not ordinary people. Almost automatically their own particular academic perspective will select some behaviours to the status of 'most important' in a way which increases the importance of their expertise. In the real world, of

course, no form of human behaviour is irrelevant to health. Some scenario can be constructed in which any imaginable form of behaviour can cause disease or death in particular circumstances.

In the United States attempts were made to discover a set of universal health status indicators through well-funded research programs which lasted several decades. Numerous conceptual and technical barriers had to be faced, beginning with what constituted a definition of health. This barrier was never surmounted, and this ambitious research program gradually faded away (Pol and Thomas 1992:290).

Had any health status indicators been discovered this naturally would have given intellectual hegemony over research and policy to the set of experts most closely associated with those indicators. Once some form of expertise could lay claim to mattering most to health research, its intellectual stock would rise and the specialists in that particular field would collect psychic and material dividends in a number of forms, from feelings of self-importance to the lion's share of grant money available for research.

With so much at stake, the more experts from different disciplines who are appointed to an interdisciplinary committee the less likely it is to reach consensus. But without consensus the basis for action is weakened, unless widely shared moral sentiments come to the rescue (Preston 1987). For example, all highly educated experts are willing to affirm that education is a good thing. Thus when a committee of clinicians and sociologists agreed that more health education was needed to improve the health of the socially disadvantaged a start was made towards a program of action. But to sociologists the agreement on values meant that money should be diverted from acute services to educational programs. Doctors disagreed arguing that acute care was essential to preventing disease from becoming permanent disability. Since consensus would have involved shifting control over resources from one set of experts to another, no agreement could be reached.

In the present climate of research, where research is conducted by competing populations of experts, there is not much hope that health research, historical or contemporary, will drive health improvement in the real world. If it is doing so at present, its contributions are hard to identify (Caldwell and Caldwell 1995:254-255). At present all we can expect is a continuation of the situation, in which social scientists ignore or disparage the definitions, data and methods used by rival experts (Baron and Hannan 1994).<sup>10</sup> In this research environment something approaching consensus can only emerge if one group of experts manages to intimidate, suppress or expel their academic rivals from the policy arena.

If we wish to consider alternatives to the present research environment, we have to think about changing the way experts are trained to be experts, as well as how they can be provided with new incentives for using their field-specific expertise co-operatively.

### **Explaining the whole elephant**

We can begin by recalling the old parable about the blind men and the elephant. Each blind man grasps (specializes in) a part of the elephant, and can only deal with the whole elephant by reducing it to the part he knows best. The expert who knows only the trunk of the elephant

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<sup>10</sup> Economists and sociologists, for example, are both committed to understanding health related behaviour; but instead of co-operating to share insights they have erected formidable barriers to intellectual trade. James Baron and Michael Hannan discuss the rivalry between economists and sociologists at length, but they do so under the assumption that long-standing rivalry is an unfortunate historical accident which can be cleared away with enough reasonable discourse between the two groups. They describe the 'imperialistic posturing' (Baron and Hannan 1994:1140) of economists and sociologists as something which benefits neither group; I would argue that such posturing is adopted in pursuit of the group's interests and therefore promotes the welfare of each member.

declares that the elephant is a medium sized hollow tube and nothing more. The expert who specializes in the elephant's side, declares it is large and flat and only that. The expert who knows the elephant's tail, declares that the elephant is just another kind of snake. If all three experts were appointed to a committee on elephant policy they would find themselves debating how to define the elephant, and therefore which set of specialist assumptions should govern any particular welfare-related research project. Disagreement would continue as long as the research environment rewarded specialists for remaining blind to the whole elephant, even though you and I, as disinterested observers, can see that the elephant is a complex animal which cannot be reduced to any one of its distinctive parts, because it simultaneously possesses a hollow trunk, broad sides and a narrow tail.

Restoring sight to blind experts (who benefit personally from their inability to see the limits of their expertise) would only be possible by providing them with new incentives to see the value of combining their specialist knowledge. Such incentives would require the creation of new institutions designed to make co-operation scientifically respectable, normatively required and personally rewarding.

For the sake of good science future specialists would be required to begin their formal training by taking compulsory introductory courses in the whole elephant, where they would be taught that it was a structurally complex creature possessing a trunk, and a side *and* a tail, along with all its other characteristic structural features, both external and internal. Thinking of a complex creature in 'or' terms instead of 'and' terms would be discouraged. Moreover elephant populations would be presented as an outcome of a number of genetic, environmental and demographic processes which created them as a distinct species. This elephant history would naturally raise fundamental conceptual questions like deciding when the ancestors of living elephants made the transition to being modern elephants. Most importantly, understanding the elephant in order to protect its welfare would require experts sensitized to the ethical implications of one species managing the future of another.

Once experts were trained to see elephants in all their complexity, they would subsequently train as specialists. Like all complex creatures the elephant is too complicated for any one person to know everything about it. Protecting elephant welfare requires specialists who have a detailed understanding of its particular parts and processes. But making elephant policy would be perceived as requiring co-operation between teams of individuals with specialist knowledge. Co-operative specialists would expect to deal with a wide range of welfare-related problems by combining their expertise, according to the logic of some particular problem. Sometimes one kind of expertise would be more important than another. But the ethics of doing co-operative research would require that no type of specialist knowledge would ever be disparaged, and respect for a wide range of data and methods, quantitative and qualitative, would be actively promoted as an essential precondition for fruitful co-operation designed to promote the welfare of elephants.

Translated to the world of modern social science 'whole elephant' research would mean conceptualizing human social systems as complex systems, which cannot be reduced to the study of one particular part, or subsystem (Johansson 1995). Shifting the orientation of social science research from its long-established fixation on simplifying complex systems is a formidable task. But consider once again how counter-productive present institutional arrangements have become, especially with respect to health.

Imagine that doctors were encouraged to believe that the best way to cure the sick was to divide up the human body into its major organ systems, train doctors to understand only one organ system, and make their success depend upon persuading potential patients that only one kind of organ failure caused disease, and required medical attention. Heart specialists would be rewarded, not punished, and admired, not admonished, for 'proving' that they could cure diseases by performing surgery. Rival specialists in the lungs, the brain, the immune system,

the kidneys or gastro-intestinal system would naturally fight back by disparaging the inflated claims of heart surgeons. But, in a rivalrous climate of research, they would be tempted to go further by insisting that only their own particular form of expertise could cure most disease. To the extent that any set of narrowly trained medical specialists succeeded in monopolizing research, care or health policy, they would kill many more patients than they cured, and be rewarded for doing so.

That is why modern doctors are trained to understand that the human body is a set of interrelated, equally important subsystems, which remain sufficiently different from each other to warrant specialization, but not to justify essentialism or reductionism. Ideally medical specialization takes place in an institutional context which stresses overarching co-operation between specialists. Among other things that means that heart surgeons would never claim that only heart surgeons were real doctors, or that all diseases could be cured by the latest forms of heart surgery. But in the social sciences as they are currently organized rival experts routinely make equivalent claims for their field, stressing the necessity of either-or choices and disparaging co-operation between specialties (Warren 1988:895).

### **Health history and health policy**

If we try to apply the above lessons to health research, it is obvious that the concept 'health' refers to a set of related but distinct phenomena which has no simple core to which all the complementary dimensions of health can be reduced. Thus the promotion of health-related human welfare through research requires co-operation between experts who study the various, equally legitimate aspects of health. By implication the history of the health transition is not one-dimensional. It is multidimensional. Health history must be approached as a complex set of changes over time, some of which may increase, decrease or stay the same as mortality declines. Getting these multiple stories straight, and translated into some kind of quantifiable form, would require genuine co-operation between a team of experts. By extension the researchers would have to be rewarded, not punished, for being co-operative, and open to other perspectives.

Short of far-reaching institutional reforms, only small steps towards a better future can be taken by conscientious individual researchers who find competitive research ethically bankrupt and empirically unsound. One step surely involves giving up naive positivist assumptions about the purely biological nature of health, without going to the other extreme and assuming that health is entirely in the mind, or in the language used to discuss it. As individuals, our universal fate is to sicken and die, but while we live, our health clearly depends heavily on how we are trained to think about the signs and symptoms of disease in a social context. Thinking about health as a socially constructed concept is not an escape from biology; it simply encourages us to accept that people have always interpreted real biological states in cultural terms, which adapt to knowledge of limitations, value systems and the economic limits imposed by available resources (Lock 1995).

Approached from a sufficiently interdisciplinary standpoint, health history could be one of the best forms of preparation for specialist study, especially if it is policy-oriented. History matters to health research because all we can really hope to know about how complex systems can be changed is to observe how they were changed (or not) in the past. Policy-oriented health history would begin by identifying how health problems have been conceptually framed in different times and places, and how reformers fit concepts, data and methods to the needs of that particular problem, or, alternatively, how one particular set of specialists, 'the winners', made the perceived health problem fit their particular research agenda.

In any event, good, useful, multidisciplinary research requires giving up the idea that there is one real definition of health, one type of data that is always most relevant to it, and one set of methods that are always sufficient for understanding it. It may even require giving

up the idea that experts and only experts should have full control over research. Although radical health reformers have become too negative about the value of expert knowledge for my taste, they are surely right to stress the inclusion of ordinary people in the social negotiation of human biology for purposes related to their perceived health and welfare.

Good health history would encourage specialists to develop a flexible cast of mind, which would weaken disciplinary narrowness, and promote a multidisciplinary approach to policy. Thus, if one of the newly emergent diseases suddenly threatened death on a large scale, it would be easier to build a consensus that the biomedical approach was the natural first line of defence. Cultural approaches to health would be temporarily marginalized, unless they could prove that they were directly relevant to containing the spread of a specific disease. This is more or less what has happened with AIDS research.

If the newly emergent diseases remain localized threats, and death rates continue to decline while health care costs continue to rise, the economics of health will naturally come to the fore, as it already has done for several decades. Every specialist must consider what health economists have to say about costs, and why so many believe that some form of rationing is inescapable.

But suppose the problem of concern is differential death rates between groups who live in the same disease environment, and seem to have equal access to the same medical resources. In this case cultural experts, who study how beliefs, values and norms can influence the prevention of disease or the treatment of illness, must come to the fore in the policy process (Helman 1990).

Agreeing that health research must be governed by the logic of complexity is not the same as agreeing that health research is very complex. Health policy experts have traditionally called health research complex (Wilensky et al. 1989:48); but, having done so, they proceeded to deal with problems by simplifying them to suit the needs of their employers. When research is done for cost-cutting governments, better health gets defined as making services and delivery systems more cost-efficient without regard to other aspects of welfare (Pol and Thomas 1992). In short, invoking complexity as an excuse for continuing oversimplification does not count.

In the imperfect present all health professionals must make an ethical decision whether or not to continue defining health in narrowly specialist terms (as they were trained to do) and thus ignoring work done outside their field, or disparaging alternative forms of research (as they often do). Given the present structure of health research, which makes it difficult for individual researchers to look after their own welfare and human welfare simultaneously, specialists need to be encouraged to develop an ethical consciousness about the possible impact of their research, and to ask themselves if oversimplified, overspecialized health research is as good for ordinary people as it is for themselves.

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