

Brussels' global health research agenda: is the balance right?

A paper for the conference

'Health systems, health economies and globalisation: social science perspectives'

London 2/3 July 2010

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Part 1. European health research policy and globalization

The expansion of trade, communication and travel that is implied in the term globalisation has been a gradual process over past centuries, but with increasing speed and impact into the present century. Ideas and knowledge are significant features within this process, controlling both development within countries and also available for exchange and trade themselves. Perhaps the most remarkable example example, from a European perspective, is described in two books about the years 1521 and 1534 respectively. In these, author Gavin Menzies (2009) that a Chinese fleet, initially sent by China to demonstrate to the world its power and advanced culture, may have contributed substantially to the Renaissance through the distribution of knowledge in books. The arrival of the Chinese fleet in Venice in 1534 was at the period of an explosion of innovation in Europe, as new technologies across wide areas of human life were exploited by the European humanistic renaissance.. However, with changing policies and problems at home, the east closed its doors to the west. But the industrial revolution, and now the electronic revolution, have brought the world together again and the power and leadership that moved from Europe to America in the twentieth century is now again ranging across the whole world.

Science, technology and innovation are important drivers of economic change, although innovation is rarely instant and older technologies continue both in the world and within countries for long periods in the face of alternatives that may be cheaper, speedier or less polluting (Edgerton 2006), Yet new methods of production, new products and new social organisations can create competitive advantage (Porter 1990) that leads to economic advancement – the aim of almost all political systems now. Science is neutral but its effects can be political (Bernal 1969), enabling wars as well as wealth (Hill 1960), and indeed the pressures of war have also led to new technologies. The direction of science towards humanitarian ends is particularly demonstrated in health science, but the underlying purpose of knowledge for (here social) development is the same. Since science and technology produces wealth, politicians want it.

The challenge for creative scientists is to direct knowledge across the full range of cultural development. 'Technologies' can be social as well as mechanical. One of the recognised innovations in the UK during the second world war was 'operational research', in which scientific systems of thinking (including mathematics) were applied to real-world problem-solving. Indeed, it might be argued that the Beveridge Report, setting out a new system for post-war social justice in Britain, was also a direct result of pressures from a war which, for the first time for centuries in Britain,

impacted not just on forces overseas but also on civilians in the home population. Science is a way of understanding and controlling both the physical and the social worlds.

European science

The priority of invention and achievements in science by China before the European renaissance were established by Joseph Needham (Winchester 2008). Europe also has been at the forefront of science and technology in the recent past, and wishes to be so in the future. In contrast to the Imperial model, however, Europe – developing its city states – inclines to the competitive model. Towns, regions and countries compete with each other; individuals compete, and use legal patents to own exclusive rights for intellectual property; and now universities, the contemporary knowledge institutions, compete to attract faculty members and ratings to justify the salaries of their chief executive officers (formerly called deans).

The European Union is a synecdoche for Europe. It doesn't include all the countries although most now ally themselves; it has weak political control, as the member states retain the main levers of economic power and capacity for fast action; and it holds a budget of only 1% of the total European GNP. Yet it also has two great strengths: it is a framework for international collaboration that is increasingly accepted and welcomed by its citizens; and it holds, in its legal directives, the means for long-term regulation and convergence of social practices. Implementing the laws required of the European *aquis communautaire* has been a major factor in transforming the former communist states of Eastern Europe.

Science was a field for collaboration relatively early in the Europe Community that was the antecedent of the European Union. In the 1970s, the former Directorate General XII (13?) for research developed programmes which helped scientists cooperate (usually by grants for travel and meetings), as well as supporting some high-tech institutes such as CERN to bring scientist together on one campus. While 'health' was regarded as outside the legal competencies of the European Community until the 1992 Treaty of Maastricht (which also established the new European Union), bio-medical research was accepted within the field of science, and took an increasingly large proportion of a growing budget.

Yet Europe is also a palimpsest of inequalities, historical, cultural, social and economic.

The European Union's Treaty of Lisbon in 2000 proposed a strategy of research in support of economic development. Europe should become the 'leading knowledge-based economy' in the world by 2010, by putting more money into research and using the knowledge gained for new products in competitive markets. The process also sought to raise the national funding base from current 1-2% to 3% in European countries overall, which seems quite modest: but the challenge has been substantial, and the initial targets for 2010 have not yet been achieved. Moreover, the funding of 'science' is not clear. Analysts distinguish between gross national expenditure on R&D ('GERD') and business expenditure on R&D ('BERD'), and part of the hope for the Lisbon strategy was that business would provide a higher proportion of funds. In part, this was referred back to the historic success of the some areas of German industry, such as chemicals and cars, in the first part of the twentieth century, which were funded through alliance between scientists and industrialists. Yet despite various moves (for example, in the United Kingdom, the long-standing science and humanities research councils which distribute grants for research were transferred to management by the Department for Trade and Industry) this hope is not yet fulfilled. Much industry in Europe is seen as reactive rather than innovative, and some fields of new knowledge for application in industry, such as electronics, have been led by the USA and Japan rather than Europe.

Bearing in mind its limited budget of 1% of GNP, the European Union can only provide a coordinating and stimulating role rather than direct leadership for science in Europe. Indeed, in the larger member states with already established research programmes, the European programmes have been seen in some quarters as more of a distraction than an opportunity. And yet, from the view-point of European Commission administrators seeking to expand the science base in Europe, it has been an important means of dissemination and programme development, providing technology transfer between collaborative teams and funds for setting up new activities. 'Science Parks' are an example in the use of the European Structural Funds in recent years where substantial focused resources have been put into favourable settings and coordinated with national policies and leaders. In the 'health' field, moreover, the 'science-for-economy' model has been led by the pharmaceutical industry, which has a combination of new technology (bio-molecular sciences) and favourable economic environment (substantial returns on successful drugs through protected health system markets).

Public-health research

'Health' has become, in recent years, the a more 'politically correct' term for the science formerly known as 'medicine'. The World Health Organisation, in its 1948 founding articles, described health as 'a complete state of physical, mental and social well-being, and not merely the absence of disease or infirmity'. This raises the bar high, since most 'health' services are still primarily oriented to patients consulting with disease, and most healthcare resources being spent on citizens in their last year of life (and thus trajectory to death). Yet 'health' recognises the need to understand and respond to people on biological, social and psychological planes. If you define medicine to encompass these already – as some physicians and philosophers have done over the centuries – then there would be some grounds for retaining the word medicine. But issues of power have intruded, especially the authority of 'medical' doctors in defining and treating disease is challenged by other workforce disciplines 'allied' to medicine performing tasks for patients (nursing, caring) or who reject 'medicalisation' (Illich 1975) of human experience. Similarly, there is a criticism of equating health with 'wellbeing' and 'happiness', which are unstable subjective measures, as though these were equivalent to the tasks of doctors in addressing disease. Saracci (1997), who spoke as director of the leading cancer surveillance institute in Europe, proposes an alternative definition for WHO, that "Health is a condition of well-being free of disease or infirmity and a basic and universal human right."

The European Commission's fourth and fifth research programmes included BIOMED 1 and 2, indicating the basic biology origin of the research although the programmes did include support for epidemiology . For the sixth research programme, covering the years 2002-2006, there was a substantial shift (Stein 2008). With the development of new technologies of recombinant genetics, a high proportion of the biology and medical budget was directed towards genetics, while 'health' themes were relegated to a separate 'policy research' strand. But in the seventh framework programme, for diseases (cancer, heart disease, respiratory disease etc that match medical specialties and pharmaceutical responses) the new paradigm was 'translational research', seeking to use existing and new knowledge to provide more effective treatments – and to 'translate' research into marketable and profit-making products. In the Seventh Framework Programme, the health 'policy' research was brought back, and the overall theme including biological, clinical and public-health was renamed 'Health' research. While there remain substantial bureaucratic barriers for the researcher to overcome in applying, other structural revisions have made the EU research programmes more attractive: the funds can now be used for all researchers including the work of

those with tenured positions; and individual single-country science projects can be supported through the new European Research Council. (Alternatively, some country national programmes are moving away from funding individual scientists in 'responsive mode' to encouraging multi-site collaborative research that can be interdisciplinary and more innovative in scope).

Global health research

Yet while the term 'health research' is mostly used today to include laboratory, clinical and population-level research, there is not yet consistency. For example, the Global Forum for Health Research, set up with support of the World Health Organisation at the end of the 1990s to promote research in the less developed nations, has revised the term to 'research for health' (Global Forum 2010), in an attempt to emphasise public-health concerns for the population-level determinants of disease, as well as treatment. Equally, there is growing recognition of 'health research systems', the organisational, social and economic frameworks that support health research. Funding of research in low and middle income countries led by the Gates Foundation for treatment of HIV, TB and malaria has come sharply up against the importance of healthcare delivery, access and uptake research to maximise success of laboratory-to-bedside programmes. And the contribution of prevention in reducing the global burden of diseases is recognised in the emerging agenda for chronic diseases research (McCarthy et al 2010).

Historically, health research in low and middle income countries has been a mix of national and international programmes. The US (for example, the Fogarty International Centre at the US National Institutes of Health) and European countries individually have been donors, sometimes tied to specific research institutes (eg IRD 2010). Since the WHO 1997 report, the Council for Health Research, Education and Development has worked with member states to develop national research strategies, leading into programmes. The results remain patchy, as indicated by the reports on the COHRED website (REF), but thriving indigenous research is expected to increase relevant research, to support researchers fostering the next generation, and to reduce the brain drain to western countries.

The European Commission had collaboration with 'third countries and international organisations' in its research programmes since 1994. This capability was included in the thematic programmes (health, food, IT etc) in the Seventh Framework Research Programme. But at the same time, the rules of FP7 were widened to allow applications, not just as partners but also as leaders, from

almost all countries in the world, and for a focusing of calls on regions and across themes. Thus in 2009, the Call for Research for Africa included research topics (and funding) drawn from FP7 themes of agriculture, food and transport. To promote this process, moreover, there is a new instrument of 'era-nets', which can join researchers together in planning research feed research ideas into the European programmes.

European health research: successes and pointers

It may seem that there has been a slow awareness of the global needs for health research. The torch for collaboration was kept in earlier years by a few countries in a semi-postcolonial way, with research programmes determined by the donor country, and the lack of technology infrastructures as well as financial attractions have led laboratory scientists to migrate to western countries.

Nevertheless, the conjunction of the Report of the Commission on Health Research for Development, the financial resources of the Gates Foundation and the international concern on millenium development goals changed the situation markedly. The new agenda of globalisation brings new players to the table and alters the dynamics of priorities, incentives and practice (Global Forum 2010).

There have also been important impacts and changes in direction. Beyond trials and marketing of pharmaceuticals, there is now recognition of research on delivery systems, health cultures and behaviours including uptake, and wider determinants. The trials of low technologies such as bed nets, and economic incentives such as micro-payments, are changing the paradigm of health research, bringing in local communities, requiring different governance and seeking different end points.

Part 2 Globalisation and Health at the European Commission

Globalisation is a theme larger than health. It is seen as the new framework for economic and commercial development, for addressing issues of environmental sustainability, for security and social justice. Health is one part of the agenda, and not everyone puts it at the top.

The European Commission Global Health Conference, held in Brussels in June 2010, brought together three of the Commission's directorates with overlapping interests – the Directorate General (DG) for Health, DG Development and DG Research. In financial terms, these directorates are relatively small in comparison with the DG Agriculture spend on the Common Agricultural Policy (€44 bn, 31% of the total €141 bn budget), and on the Cohesion and Structural Funds (€50 bn, 33%) (this finance is slowly transferring from the southern European countries towards the 12 EU 'new member states' in the east and southeast). DG Research has €7.5 bn (5%) of the EU budget and DG Development has €3 bn (2%) for direct overseas aid. By contrast the budget for the Directorate for Health and Consumers' budget, at €50 million, is very small, a mere 0.1% of the whole EU budget.

The conference was organised by these three directorates. Since the title 'Global Health' only includes two of them, it is of interest to see that the Research Directorate was involved. Yet it was relevant to do so: because DG Research has more money available than the others; and DG research already has an established agenda on research with the less developed countries in maxi-regional groupings. DG Research's current Seventh Framework Research Programme allows applications from countries around the world, in association with European researchers. Moreover, DG Research has actively sought to work with the other two directorates in seeking to define internal Commission 'customers' for its public-health research priorities and calls. This has included work with the DG for 'External Affairs', which progressed the expansion of the European Union from 15 to 27 states in the 2000s and which now oversees a 'European Neighbourhood Policy' towards middle-income Mediterranean and Central Asian countries.

The Conference had two days, of which the first was identified as technical and the second political. In a way this reflected the structure of international conferences such as the recent UN Climate Change conference, with initial work leading to final political declarations. Participants, up to the 400-person capacity of the Charlemagne building hall were invited through European representative organisations rather than member states alone.

The opening sessions on health and development were given contemporary political spin with the words 'inequalities' and 'rights', although these were concerned more with moral issues than practical and political questions of how to achieve balanced global economic development and thereby greater health for all. There was discussion on traditional health issues of workforce, communicable diseases and non-communicable diseases. Country-led international health strategies

were considered, and the policies and programmes of the European Commission. However, research was considered from the current dominant paradigm of commercialisation by European pharmaceuticals manufacturers, and the protection of intellectual property – all six speakers in the workshop session 'innovation' took this approach, explicitly promoting research for for-profit industry. There were no presentations of health systems research for public good.

Research for public health

The Conference was framed around the European Union's policies and practices – spreading European influence by 'soft' means (discussion, exchange, small funding) rather than 'hard' means of trade and war. The conference included participants expected to be critics, in the forms of NGOs and academics, as well as politicians. But the research theme debate left unresolved the crucial choices between research for the private sector and for the public sectors, and thereby the balance between research for medicine and research for health.

The EU's Lisbon Treaty, signed in 2000, proposed a strategy for 2001-2010 based on three themes: an economic pillar for a 'competitive, dynamic, knowledge-based economy', with emphasis on information technology and a boost to research and development; a social pillar for employment ('making it easier to move to a knowledge economy') and combating social exclusion; and an environmental pillar proposing that economic growth should be decoupled from the use of natural resources. The Seventh Framework Programme for Research (2007–2013) proposed integration through the European Research Area and that national research budgets should grow to 3% of GDP.

Policy-makers hope that the increase in research, because it is linked to economic development, will be funded by industry. Since much economic activity is by so-called 'small and medium enterprises', employing up to 250 people by the EU definition., effort has been put into linking SMESs to the publicly-funded research programmes, hoping to create synergy and expansion. The strategy also encourages the protection of intellectual property through patents – away from a traditional European humanistic view that knowledge is universal.

The resulting slant is challenging for the health system. There is an increased pressure to invest in technological research, and for companies to gain financial return in sales through the health care market. Yet healthcare systems are publicly regulated and paternalistic, and 'trade' is at cost to the public as payers of health insurance and taxes. Equally, the emphasis on laboratory research

undervalues social, behavioural and organisational research. The emphasis on developing effective medical interventions has led to a new paradigm of 'translational' research, which seeks to link the 'laboratory' to the 'bedside'. And this paradigm is increasingly driven by commercial interests. It is difficult to penetrate into this paradigm the idea that the determinants of health lie outside the laboratory in the wider aspects of society and economy, and that 'translational' research on effective interventions in this wider public-health field is as relevant to the health sector as narrower clinical research (McCarthy 2010).

The pharmaceutical industry uses developmental work extensively, described within the Stage 1–4 paradigm, now enshrined by regulating agencies. By contrast, public-health innovation is usually described as a 'project', often isolated from other equivalent work, and often not properly evaluated. There is no strategic framework for public-health intervention research to give it equivalence to pharmaceutical research. As yet, also, regulatory agencies have limited evidence to reject public-health which are ineffective. Moreover, the lack of coordination across Europe means that innovations can develop independently in European countries without joint learning and with resulting waste of resources.

Challenges of globalisation

The health challenge of globalisation is how to succeed within the wider for-profit market system. Global corporate capitalism seeks not just to be within a market, but to control it (Yergin 1990). If research and innovation are the basis for commercial success, capitalism will seek to control and direct them towards corporate rather than public benefit. The EU has policies for globalisation which are stated to address social as well as economic issues. Yet the meaning of social, here, is 'more and better jobs and increased social cohesion' – that is, employment protection rather than broader actions for the benefit of society as a whole.

The returns from research and innovation, and their implementation in health and healthcare systems, should be calculated and set against the costs of alternatives. The pharmaceutical industry is now closely linked to the major global donor in the health field, the Gates Foundation, promoting the paradigm of treatment for diseases (HIV, TB, malaria) that are also preventable by alternative social public strategies and investment. Funds go into treatment of patients now while further cases arise, a 'downstream' policy which perpetuates the disease and thus the response. Since the total

research capacity is limited, economics should compare investment in public-health research in competition with, rather than in addition to, pharmaceutical research. Health research can provide a balance in approaches and to deliver sufficient evidence to influence policy and practice in more socially beneficial ways.

Civil society

A possibility is to develop the role of civil society to extend their contribution as equivalent to that of SMEs for industry. Health Civil Society Organisations (CSOs) are sometimes linked with academic colleagues, and may draw their staff transferring from the health and education sectors. They are often focused on specific services, as for-profit SMEs, or on policy advocacy. CSOs can respond flexibly, and have shown, particularly in addressing services for disadvantaged groups or for behaviour-related diseases, a closeness to users that may not be present in the commercial sector.

There is a growing literature on public involvement in health research in high-income countries (Staley 2009). Areas of involvement have included developing the research agenda, design, methods and impacts. Studies report benefits – and difficulties – for researchers, research participants and community organisations; but there are few articles on the impact of public involvement on research funding and commissioning. In EU-funded health research, also patients have been the focus for involvement (Hogan 2009). In the field of rare diseases, however, the pharmaceutical industry has been assiduous in gaining, and indeed often rewarding, patient involvement. The 'European Patients Forum' is almost fully funded by six pharmaceutical companies (Sourcewatch 2010). Hanney et al (2010: p9), in a study of the UK health research system, comment: 'organised patient groups tend to push for more research in their particular fields, and the lack of a strong advocacy group for public health may have contributed to the traditionally low levels of funding in that area'.

Yet civil society organisations are interested also in the systems of health research. In our study STEPS, funded by the Science in Society theme of the European Commission Seventh Framework Research Programme, CSOs in the twelve new EU member states have organised workshop meetings with researchers and national health research commissioners. There was a strong interest from the CSO participants, beyond knowledge passed from others to be implemented as practice, in themselves developing themes and being part of the research process.

In 2009, the Global Forum for Health Research, along with the People's Health Movement made a call for research proposals from civil society organizations (Global Forum 2010b). The call, citing the WHO Task Force Report on “Priorities for research on equity and health” (Ostlin 2009), called for interventions (including policies, programmes, etc) to address social, economic and political determinants of health, and existing interventions and research projects already in progress were encouraged. Civil society organizations could include registered charities, development NGOs, community groups, women's organizations, faith-based organizations, professional associations, trade unions, self-help groups, social movements, business associations, coalitions and advocacy groups.

CSOs were seen as participants in the entire research process, from design through to dissemination, CSOs contribute to proposing interventions and evaluation methods, as well as influencing policy choices and uptake of research into practice. There were 93 proposals received, from 53 countries and across 5 languages. Four selected research proposals are to be supported with mentoring, networking, a cash award of up to USD 10,000 for evaluation, presentation at an international conference and help in disseminating results. .

Ways forward

Can public-health sciences challenge the bio-medical paradigm? Epidemiology is able to demonstrate risks and associations quantitatively, and to monitor and demonstrate impacts from interventions. In much public health, the randomised controlled trial is impossible to apply, although for prevention of neural tube defects with folates, where a well-conducted trial has shown compelling benefit, governments have still delayed implementing public policy (Oakley et al, 2010). Surveying the public health research systems in European member states, the lack of development of social sciences for health research was evident (McCarthy and Clarke 2007): the main recipients of national research funds were the traditional science academies, while the ministries of health funded public health institutes with laboratory and sanitation sciences. In western European countries, social sciences are found within universities and have been a mainspring for both quantitative and qualitative research, linking to health services research, health promotion and health economics. This complements the contribution of medical practice to public-health research: disease control remains the dominant objective and research needs to address social and biological determinants as well as the effectiveness, efficiency and equity of the health system.

In the global context there is a need for a vision of what future structures for health research should

be. An interdisciplinary mix of skills is required; teams that have flexibility and sufficient skills to tackle both short and long-term questions; ability to learn from and contribute to international experience; capacities for the staff to retain their career trajectories and respond to changing policy and research priorities. These are the public-health research laboratories of the future. In the past, professors of epidemiology at the London School of Hygiene used to put on a white coat to meet students in the classroom. Partly this was in response to the many laboratory staff (mainly microbiology) in the building who used coats for their work; but it was also to signal that they were also 'scientists'. Now public health research can be signalled through international publications, meetings, media – and the internet. The challenge is to ensure it has sufficient standing in the global research market to be able to contribute its benefits to society.

Acknowledgements

The work is supported through the European Commission Science-in-Society strand of the Seventh Framework Research Programme.

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