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The sociology of pharmaceuticals: progress and prospects

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Abstract This paper takes a critical look at progress and prospects regarding the sociology of pharmaceuticals over the years. Key themes examined include: (i) medicalisation and pharmaceuticalisation; (ii) regulation; (iii) consumption and consumerism; (iv) expectations and innovation. Papers in the monograph are also introduced and discussed in relation to these themes. The paper concludes with some further comments and reflections on progress and prospects in this field, emphasising the continuing importance of sociological engagement with these personal and political issues in the 21st century.

Keywords: pharmaceuticals, medicalisation, pharmaceuticalisation, regulation, consumption, consumerism, expectations, innovation

Introduction

Recent years have witnessed an upsurge of interest in pharmaceuticals and society, a trend which in part reflects the growing power and influence of the pharmaceutical industry over all our lives, as patients, consumers and citizens. Medicine costs the National Health Service (NHS) in England alone over £7 billion every year, 80 per cent of which is spent on branded (patented) products, with the pharmaceutical industry the third most profitable activity in the UK economy after tourism and finance (House of Commons Health Committee 2005). These figures, in turn, are part and parcel of the bigger global picture of pharmaceuticals sales which are forecast to grow by five to six per cent between 2007 and 2008 to over US $735 billion a year – with North American sales alone constituting nearly half of this market, and North American and European pharmaceutical sales together constituting over three-quarters of global pharmaceutical sales (IMS MIDAS 2008 http://www.imshealth.com). Scarcely a day goes by, moreover, without some story or other in the media about pharmaceutical products and practices. On the one hand, newspaper headlines boast new breakthrough 'wonder drugs'. On the other hand, stories of drug crises or controversies are regularly rehearsed in the media, thereby stirring fear and fascination in the public mind as to the power of pharmaceuticals and the industry that markets and manufactures them. Clearly pharmaceuticals have an important role to play in the alleviation of human suffering and the saving of lives. They are also, however, the source of much controversy, contestation and conflict, not simply in terms of their development, testing and marketing, but in terms of their very meaning and consumption.

This monograph is both a reflection of and response to this upsurge of interest in pharmaceuticals and society, casting further critical sociological light on these developments,

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discourses and debates. It is possible, in this respect, to point to a variety of themes and issues which taken together demonstrate both progress in sociological research on pharmaceuticals over the years and future prospects.

Medicalisation and pharmaceuticalisation; doctors, disorders and drugs

The first and perhaps most long-standing sociological theme has centred on the role of pharmaceuticals in the medicalisation of society. When Illich (1975), way back in the 1970s, talked of the iatrogenic effects of modern medicine and how the consumption of medical products helped sponsor a 'morbid society', a key target of his critique was our 'over-reliance' or 'dependence' on drugs as well as doctors. Others more fully or squarely located within medical sociology, particularly North American medical sociology, have also taken up these themes, albeit in a less radical or libertarian way than Illich. Specific emphasis has been placed by these authors on the expansion of medical jurisdiction and control over more and more areas of our lives, in the name of health and illness (Zola 1970, Freidson 1970, Conrad and Schneider 1980a,b). The role of the pharmaceutical industry within these processes, nonetheless, remained a somewhat muted or neglected theme in the medicalisation literature of the 1970s through to the 1990s, with sociological attention focusing on the power and influence of medicine in the social construction of disease and decisions about its treatment. More recent work, however, has begun to reappraise these processes in the light of current trends and developments regarding the medicalisation of society. Conrad (2005, 2007, Conrad and Leiter 2004), for example, in updating his previous work in this area (Conrad 1992, Conrad and Schneider 1980a,b), has pointed to what he terms the 'shifting engines' or 'drivers' of medicalisation over time – see also Clarke *et al.* (2003) for a somewhat different line or emphasis on transitions from medicalisation to so-called 'biomedicalisation'. Whilst the definitional centre of medicalisation remains with doctors, Conrad argues, the primary drivers of medicalisation now pertain to consumerism, managed care markets and developments in biotechnology, including the pharmaceutical industry.

Other more critical commentators (many of whom, significantly, are not sociologists), have taken these arguments one or more steps further, claiming that what may once have been regarded as medicalisation is now best seen as outright 'disease-mongering' in which the helping hand of the pharmaceutical industry looms large. Critics such as Moynihan (Moynihan 2002, Moynihan and Henry 2006, Moynihan *et al.* 2002) and Blech (2006), for example, through a series of case studies, have shown how pharmaceutical companies in collaboration or conjunction with doctors, pressure groups and the media, are no longer simply manufacturers of drugs but of diseases for these drugs to treat! – see also Law (2006) on 'Big Pharma'. A recent issue of the *Public Library of Science – Medicine*, for instance, devoted a whole section to essays on this very issue, including case studies of a range of diseases or disorders from ADHD (Phillips 2006) through erectile dysfunction (Lexchin 2006) and female sexual dysfunction (Tiefer 2006) to bipolar disorder (Healy 2006). These critiques, to be sure, are important. Not all forms of medicalisation, however, involve disease-mongering. Nor do all forms of medicalisation entail pharmaceuticals or processes of pharmaceuticalisation. Ideally, medicalisation should be considered as a value-neutral term that simply denotes the making or turning of something into a medical matter, the merits of which are open to empirical investigation depending on the case in question (Conrad 2007, 1992). Medicalisation, as such, may have positive and negative or light and dark faces, involving both gains and losses for the parties involved.

Whatever the merits of the case for outright disease mongering, one key vehicle for the expansion of pharmaceutical markets is of course direct-to-consumer advertising (DTCA): a development which to date is limited to countries such as the USA and New Zealand. On the one hand, this may be viewed as an entirely new development or departure. On the other hand, an instructive parallel and precursor may be found in the guise of patent medicine advertising in the past. Conrad and Leiter's paper, for example, sheds valuable further light on these issues. Taking two advertising exemplars as its case studies – the late 19th century Lydia E. Pinkham's vegetable compounds for 'women's complaints' and contemporary Levitra for 'erectile dysfunction' (ED) – instructive parallels are drawn by these authors between the patent medicine era and the DTCA era. One of the great ironies of DTCA in this respect, Conrad and Leiter argue, is that it extends the relationship of drug companies, physicians and consumers in ways that rehearse or return us to a situation similar to Lydia Pinkham's day, when the drug manufacturers had a direct and independent relationship with consumers. Whilst the extravagant claims of Pinkham are now constrained by law, moreover, we must also contend with the fact that modern advertising has become far more subtle and sophisticated in its attempts to persuade or convince consumers that its products are the right ones in an increasingly competitive pharmaceutical marketplace. The pharmaceutical industry and consumers, Conrad and Leiter conclude, are increasingly important players in medicalisation, facilitated in part by the advent (or return to) DTCA.

Another key factor or player in these medicalising processes, of course, as Conrad and Leiter's paper on DTCA clearly attests, are the media. Previous sociological studies, for example, have demonstrated both celebratory and critical media discourses on drugs, depending on the media, format and drug in question, the relative 'newness' of the drug to the market, and its 'newsworthiness'. For example, when benzodiazepine tranquillisers were first prescribed in the 1960s they generally received an enthusiastic welcome in the UK and US media and were proclaimed as heralding a new therapeutic era. As their popularity grew, however, their therapeutic value ceased to be newsworthy and a more critical coverage developed, drawing on the comments of a small but growing band of professional and lay critics. Initially, in the 1970s, this concern focused on claims about their overuse as a 'chemical crutch' for personal problems, before shifting in the 1980s and 1990s to claims about these drugs' 'addictive' potential, (Gabe and Bury 1996a, 1996b), with users portrayed in the local and national UK press as innocent victims, through no fault of their own, who then tried to withdraw and embark on a 'return journey' to normality (Gabe *et al.* 1991). Moreover, through these forms of mediation and marketing, drugs may come to take on personalities of their own, achieving some sort of quasi-mythic or celebrity status in the popular imagination, construed or constructed as the archetypal hero or villain (see for example Martin 2007, Nelkin 1995).

Some of these issues, for instance, are addressed in Williams and colleagues' paper on newspaper coverage of the wakefulness-promoting drug Modafinil (brand name Provigil). Constructions of this drug in the print news media, these authors show, range from largely uncritical endorsement of its clinical applications as a 'breakthrough' or 'wonder drug' for a growing list of sleepiness-related conditions, to somewhat more cautious or critical coverage of its wider (potential) uptake as a lifestyle drug of choice, or in sport or military contexts. Again, we see here, in the guise of this wakefulness-promoting drug, the now familiar if not commonplace rehearsal of concern over the blurring or shifting boundaries between 'treatment' and 'enhancement', and the broader articulation of cultural anxieties about a move to a 24/7 society in which sleep becomes increasingly optional if not obsolete. A notable feature of the paper, in this respect, is the authors' preference for the term

'pharmaceuticalisation' rather than medicalisation in order to capture these concerns in the press: concerns, that is to say, to do with the potentially widespread use and uptake of pharmaceuticals for diverse purposes which extend far beyond the realms of medicine or the strictly medical.

Another prime expression of the mediation of pharmaceuticals, of course, concerns the Internet or cyber-space/culture – see, for example, Miah and Rich (2008). This includes not simply access to information on pharmaceuticals via Internet searches, but the purchase of pharmaceuticals through online or e-pharmacies and the sharing of information and support through Internet chat rooms and online forums of various sorts (Fox *et al.* 2005a,b). In these and other ways, new opportunities for the mediation of pharmaceuticals are opening up in all our lives, for better or worse, routes that may very well bypass the traditional doctor-patient relationship altogether. Some of these issues, for example, are taken up in Fox and Ward's paper on the pharmaceuticalisation of daily life – as with Williams *et al.*'s paper, the preference for pharmaceuticalisation over medicalisation is once again notable. Taking as their problematic the new emphasis on lifestyle in the production, marketing and consumption of pharmceuticals and drawing on a diverse array of sources – including literature from social science, economics and health services research, together with their own research on pharmaceutical consumption – Fox and Ward identify two broad processes at work here. First, a domestication of pharmaceutical consumption, through computer mediated access and consumption within the home, particularly the bedroom and the kitchen. Second, the pharmaceuticalisation of everyday life, as pharmaceuticals come to be seen by consumers as 'magic bullets' for a range of everyday daily life problems. The domestication of pharmaceutical consumption and the pharmaceuticalisation of life, in this respect, become a complex mixture or heady brew of factors, including the biological effects of the drug on the body, the legitimacy of the problem or disorder in question, the willingness of consumers to adopt the technology as a 'solution' to a problem in their lives, and the corporate interests of the pharmaceutical industry. For these authors social relations surrounding contemporary pharmaceutical production and consumption 'link the world of business to the private world of citizens, forging new diseases and treatments from the very fabric of daily life'.

Regulation; science, politics and the pharmaceutical industry

If medicalisation and pharmaceuticalistion constitute one key strand of sociological research on pharmaceuticals and society over the years, then the science and politics of the pharmaceutical industry, including issues of development, testing and regulation, constitute another rich seam of work. Abraham (1993, 1995, 1997, 2002, 2007, Abraham and Davis 2005, Abraham and Lewis 2002, Abraham and Reed 2001, Abraham and Sheppard 1999), for example, has been at the forefront of this research over the past 15 to 20 years, documenting through detailed empirical case study work and comparative analysis elements of controversy and corporate 'bias' which, at one and the same time, demonstrate the inadequacies of existing regulatory practices and procedures, and the need for more rigorous and robust policy interventions at the institutional and legislative levels. These include the development of independent drugs testing by regulatory authorities, increased patient and public representation on regulatory committees and more frequent and thorough oversight of regulatory performance by the legislature – see also Busfield's (2007a) recent sociological analysis of scientific 'fact making' in the clinical trials of drugs and in post-approval drugs assessment, and the subsequent Abraham (2007)-Busfield (2007b) debate.

Many of these issues were explicitly taken up and addressed by the House of Commons Health Committee (2005) Report on *The Influence of the Pharmaceutical Industry*. Whilst rightly noting how pharmaceuticals may be a force for the good in contributing to the health of the nation, the report is nonetheless peppered with references to a 'failing' regulatory system, to 'lax oversight' and to practices on the part of the pharamaceutical industry which 'act against the public interest', given the power and influence of marketing forces. Recommendations cover several key areas, including the licensing process, with greater transparency and independent assessment of evidence, improved Medicine and Health Care Products Regulatory Agency (MHRA) mechanisms for restraints on medicines promotion, tougher restrictions and greater vigilance to guard against 'excessive' or 'inappropriate' prescribing, and a fundamental review of the MHRA itself.

In revisiting these issues, Abraham's paper provides both a timely review of 20 years of sociological research on pharmaceutical development and regulation and a reassertion of the importance of a realist empirical research programme for the investigation of these issues, based on the notion of 'objective interests' – *i.e.* the objective interests of pharmaceutical companies in profit maximisation and the objective interests of patients/public health in the optimisation of the benefit-risk ratio of drugs. Drawing on international comparisons of drug regulation, Abraham shows how commercial interests have biased the science of drug testing and review away from patients and the public in favour of the industry: a process, he argues, which is best characterised as 'neo-liberal corporate bias'. Far from being the 'inevitable by-product' of technoscientific progress in pharmaceuticals, moreover, these international comparisons are valuable in demonstrating considerable scope for improvement. Similarly, the lowering of technoscientific standards for drug safety across the EU, US and Japan is not, Abraham argues, an inevitable price to be paid for faster development of therapeutically valuable medicines, but more plausibly a consequence of the international spread of neo-liberal corporate bias in pharmaceutical regulation.

The gender and sexual politics of pharmaceutical development, testing, and regulation adds another important dimension to the picture here. We see this very clearly, for example, in Casper and Carpenter's paper on the politics and controversy surrounding initiatives to introduce the human papilloma virus (HPV) vaccine for cervical cancer in the United States of America. These initiatives have, in the words of the authors, 'animated longstanding concerns about vaccination . . . and young women's bodies and behavior'. The HPV vaccine, in this respect, raises the spectre of both past controversies about vaccination and current political concerns in the area of sexual morality. Vaccines, the authors argue, are a distinctive kind of pharmaceutical invoking notions of 'contagion' and 'containment'. Pharmaceuticals, moreover, develop lives or biographies of their own; trajectories shaped at every stage or phase by politics. Viewed in this light then, it is not so much the public debates about vaccination as such that are the most important dimensions to the story here, but that its target is a sexually-transmitted disease, which thereby draws into the debate issues of sex, gender and women's bodies that are far more charged. The launch of the HPV vaccine in short, these authors argue, appears to have 'inflamed' US health care politics which in turn has affected plans for marketing the drug. This in turn underlines both the struggles provoked by this new gendered technology and the ever emerging and evolving 'biographies' of pharmaceuticals themselves, which to repeat, are deeply political.

Broader questions also arise at this point about the global nature and dynamics of the pharmaceutical industry. These include debates on the 'globalisation' of medicines control (Abraham and Reed 2003), whether or not the pharmaceutical industry is in fact truly 'globalised' in the first place – multinationalisation, or Westernisation, Busfield (2003) argues, are more accurate terms of reference – and the growing practice of out-sourcing or

'pharming' out clinical trials to the developing world where regulatory standards are lower or looser and bodies are in cheap supply (Shah 2007). Important questions need to be asked here, for example, about who gets what, when, and where - *i.e.* the global inequalities and injustices spawned through the current system of drugs development and distribution. Of particular significance here is the prioritisation of drugs for affluent societies where chronic conditions prevail and lucrative markets beckon over other basic life-saving drugs for those in poorer parts of the world, many of whom exist on less than a dollar a day (Busfield 2007a, Petryna *et al.* 2006, Shah 2007).

One seeming success story on this count, at face value at least, concerns the state-sponsored national provision of Antiretroviral Therapy (ART) for people with HIV in Brazil. Yet, as Cataldo's paper suggests, based on his detailed ethnographic research in a *favela* (shanty town) in Brazil, the universal character of this public health programme is challenged or problematised in a number of ways through local definitions of illness, problems of adherence to treatment, structural violence, political alienation and the lack of perspectives about the future. These developments, moreover, echoing other writers (Petryna 2002, Petryna *et al.* 2006, Biehl 2004, Rose 2007), point to new or novel forms of socio-political identification and participation focused on the notion of 'therapeutic' or 'biological citizenship'. In particular, they raise concerns about free access to treatment, the right to health care, and the viability and sustainability of public health policies in a 'developing' or 'middle income' country.

Consumption and consumerism; medicines in the marketplace

A third long-standing strand of sociological research on pharmaceuticals concerns what may loosely be termed consumption and consumerism. Initial work in this area focused on providing a 'social audit' of the use of prescribed medicines in the community (*e.g.* Dunnell and Cartwright 1972). In the 1980s and 1990s the focus shifted to exploring the social meaning of medications ranging from anti-hypertensives (Morgan 1996) to benzodiazepine tranquillisers (Helman 1981, Gabe and Lipshitz-Phillips 1982, 1984, Gabe and Thorogood 1986) and how such meanings were shaped by users' ethnicity and gender (Cooperstock and Lennard 1979, Gabe and Thorogood 1986, Ettorre and Riska 1995).

More recently, with the growing sociological interest in consumption and consumerism (Rief 2008), attention has increasingly focused on users of pharmaceuticals as knowledgeable and reflexive actors, assessing the risks and benefits and making informed choices in consultation with professionals (Fox *et al.* 2007, Fox *et al.* 2005a). Such consumerism, in turn, is reinforced by UK government policy which constructs patients as experts and exhorts professionals to develop a 'partnership' with their patients (Taylor and Bury 2007). These developments are explored in the paper by Stevenson, Leontowitsch and Duggan, who consider how consumers of over-the-counter medicines engage with pharmacists, and how pharmacists seek to maintain their professional expertise in the face of health-care consumerism. Based on interviews with customers and pharmacists, group discussions with pharmacists and tape-recorded consultations and observations in two pharmacies, they show how pharmacists' attempts to engage customers in discussions about their treatment did not result in a reduction in the importance of pharmaceutical expertise. Instead, both pharmacists and customers acknowledged the importance of the asymmetry of knowledge between them. Nonetheless, customers did not always see pharmaceutical expertise to be necessary and at times talked about over-the-counter medicines as a commodity, and treated transactions in pharmacies as no different from those in other retail outlets. And pharmacists

were aware that they were running a business and that they needed to be sensitive to the danger of losing trade if they resisted selling a product that a customer had requested.

Sociological work on consumerism is not just focused on individual users of health care as knowledgeable and reflexive actors. Attention has also been paid to the way in which users act collectively to represent their interests as members of self-help groups, patient-advocacy groups and health social movements in the public sphere (Kelleher 2004, Brown *et al.* 2004). In the case of pharmaceuticals this has involved focusing on how health consumer groups – voluntary sector organisations that represent the interests of patients – engage with the pharmaceutical industry around issues such as the availability of and access to medicines. This provides the focus for the paper by Jones. She explores how health consumer groups in the UK disclose and manage links with pharmaceutical companies in the context of their increasing involvement in the policy process. She focuses on claims that companies engage with groups in order to try and 'capture' their policy agenda. Drawing on evidence from group and industry websites and interviews with representatives of consumer groups, industry and other health-care stakeholders she reveals that only around a quarter of groups known to receive financial or in-kind support openly admit to this. Even so, Jones rejects the view that this lack of transparency demonstrates that these groups' policy agenda has been 'captured'. Rather, she points to a coincidence of aims (both sides have an interest in medicines being available), the existence of tacit support for guidelines to manage conflicts and the fact that funding from industry generally represents only a small proportion of these groups' income. Nonetheless she acknowledges that the lack of transparency with regard to disclosing funding strengthens critiques of undue influence and may well reduce policy makers' willingness to treat consumer groups as the legitimate voice of patients in the policy process.

Expectations and innovation; pharmacogenomics, regenerative medicine and beyond . . .

A fourth and final strand of sociological research has been very much taken up with innovative new developments in bioscience, biomedicine and biotechnology, including pharmaceuticals, which, taken together, point to or promise reconfigured futures. Rose (2007), for example, in his broad survey of this newly emerging field, highlights what he takes to be the growing 'politicisation' of all life forms, given the rapid pace of developments in bioscience, biotechnology and biomedicine at the dawn of the 21st century. This politicisation covers the morphing or mutating of biomedicine through molecularisation, debates around the very nature and status of what it is to be 'human', the formation of new biosocial identities, communities and forms of citizenship, and the reconfiguration of the boundaries between normality and abnormality, health and illness, treatment and enhancement. Developments in neuroscience, for example, including novel forms of psychopharmacological intervention or enhancement, raise a host of social, legal, ethical, political and economic issues which necessitate informed dialogue and debate across disciplinary boundaries and wider public and policy-making arenas – see, for example, the recent flurry of reports on cognitive enhancement agents by the Academy of Medical Sciences (2008), British Medical Association (2007), Department of Trade and Industry (2005). Psychopharmaceuticals, in this respect, are becoming central to the way in which conduct is governed, obliging individuals to engage in 'constant risk management, to monitor and evaluate mood, emotion, cognition, according to finer and more continuous processes of self-scrutiny' (Rose 2007: 223).

These developments in turn encourage us to ask pertinent sociological questions about the biopolitics of the future, including sociology's own role in the co-construction or

co-production of various utopian and dystopian biofutures. Recent research on the sociology of *expectations*, for example, has drawn attention to: (i) the dynamic role which expectations play in defining roles, attracting investors and building mutually binding obligations; (ii) how expectations differ between various social groups (*e.g.* scientists, policy communities, industry, consumers, public); and (iii) how the futures they envisage are 'contingent', 'contested', 'embraced', 'imagined', including both the 'retrospecting of prospects' and the 'prospecting of retrospects' (Brown and Michael 2003) – see also Novas (2001) on the political economy of hope.

The development of new vaccines, for example, is an obvious case in point, generating hopes, fears, and a variety of other moral and political agendas which both hark back to the past and project into the future – see, for example, Casper and Carpenter's paper discussed above. Another key area where these issues are very clearly evident is in relation to recent developments in pharmacogenetics and pharmacogenomics (*i.e.* the splicing or hybridisation of pharmacological and genetic/genomic knowledge in order to predict drug reactions). This is a field of considerable hyperbole and hope regarding a new era of so-called 'personalised', 'bespoke' or 'tailor-made' medicines, construed as the perfect antidote to the 'one-size-fits-all' remedies currently on the market, where side-effects or adverse drug reactions (ADRs) are commonplace. Whilst major pharmaceutical industry interest and investment in this area is relatively recent (little more than 10 years old in fact), pharmacogenetics as a term of reference or organising principle has been around much longer, dating back to the late 1950s. These developments, moreover, generate a number of concerns from a diverse range of constituencies, including potential problems of 'over-segmented' (read 'unprofitable') markets, the proliferation of genetic testing, and the 'racial politics' of personalised medicine – see Brown and Webster (2004), and Sneddon (2000) for useful discussions of some of these issues and Hedgecoe (2004) for an illuminating study of the politics of pharmcogenetics in relation to Alzheimer's and breast cancer. Questions also arise as to just how personalised these developments can ever be. To the extent indeed that 'personalised' medicine is ever truly possible, then as Hedgecoe (2004: 5) wryly remarks, this is best seen as the equivalent of purchasing a small, medium or large T-shirt from GAP than of being fitted for a smart tailor-made Savile Row suit!

Barr and Rose's paper sheds further comparative light on some of these issues in relation to anti-depressant drugs. Drawing on their empirical study of the views of patients with depression regarding genome-based therapies for their condition (GENDEP) in eight European countries – England, Poland, Slovenia, Italy, Belgium Denmark, Germany and Croatia – these authors show how discussions of the clinical acceptability of genome-based therapies for depression cannot be divorced from some of the wider issues regarding depression and anti-depressants. This includes a commonplace tendency to conflate notions of a pharmacogenomic test for antidepressants with a genetic test for depression, doubts about the medical model of depression, and a 'deep ambivalence' regarding the use of anti-depressant medication. On the one hand, strong hope is expressed about new drugs to treat depression. On the other hand, concerns remain over the need to take such drugs either now or in the future to manage or modify moods. These views in turn are tied up with a belief that psychiatric illness is somehow 'different' from physical illness and that depression carries with it a certain cultural value, including positive links to creativity, selfhood and identity. There is then, in short, as these authors clearly demonstrate, a great 'ambivalence' regarding the personal and cultural significance accorded to depression and anti-depressant medications which genetic testing is likely to exacerbate rather than alleviate.

Another key area of hyperbole and hope concerns current research into stem cells: developments which hold out the promise or prospects of new treatments for conditions

such as Alzheimer's disease, Parkinson's disease and motor neurone disease, through the cultivation of replacement neurons. At first glance this may have seemingly little to do with pharmaceutical investments, signifying in fact a direct threat or challenge to prevailing drug-based forms of treatment in the present or future, personalised or otherwise. Yet, as Wainwright and colleagues' paper in this monograph suggests, a new paradigm of stem cells research is emerging, the 'disease in a dish' approach, whereby human embryonic stem cells (hESC) will be used as 'tools' to unravel the mechanisms of disease and enable the development of new drugs. It is here, at this nexus of regenerative medicine, hESC and pharmaceuticals, that a new set of problems and expectations is being forged; developments which Wainwright and colleagues argue can profitably be understood in terms of Bourdieu's theoretical concepts of capital, habitus and field, particularly 'expectational capital' which is derived from this set of ideas. Experts' persuasion practices and strategies, from this perspective, advance their interests in this uncertain field; a performative strategy which helps stabilise this emerging 'disease in a dish' model of translational research and new pharmaceutical drug development.

Taken together then, a variety of sociological agendas, both old and new, coalesce around pharmaceuticals and society, as this introduction clearly attests; issues, to repeat, which touch all our lives as patients, consumers and citizens. At a time of reinvigorated debate about the political and public faces of sociology (Burawoy 2005, Turner 2004), and the biopolitics of life itself (Rose 2007), sociological research on pharmaceuticals holds out the potential, promise or prospect of analyses which combine an appreciation of what Wright Mills (1959), in the *Sociological Imagination*, classically described as personal troubles and broader public issues of social structure. In potentially holding those in positions of power to account, moreover, and in engaging in informed dialogue and debate with its publics, sociological research on pharmaceuticals admirably demonstrates the continuing importance of the discipline to these developments, discourses and debates. The contributions gathered together in this monograph, we believe, exemplify this promise and potential in an era where the power and force of pharmaceuticals to treat or enhance us, and the interests shaping their development and distribution, manufacture and marketing, look set to grow well into the 21st century.

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