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A history that goes hand in hand: Reflections on the development of health economics and the role played by *Social Science & Medicine*, 1967–2017

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1. Introduction

As a journal, *Social Science & Medicine* has been around since the very early days of the health economics sub-discipline, making its first appearance in 1967, well before the two primary disciplinary specific health economics journals in the field: *Journal of Health Economics* in 1982 and *Health Economics* in 1992.

This paper provides a brief commentary on the role of the journal, in the context of the development of health economics itself over the last fifty years, from fledgling journal and new sub-discipline, to the clear establishment of both as important influences. The commentary aims to draw some conclusions about the role that *Social Science & Medicine* has played in the development of the discipline, as well as around publication issues in health economics more generally. It is worth noting that this is a personal take on these issues, and that the views expressed here are undoubtedly influenced not just by my own context in terms of acting as the Health Economics editor for *Social Science & Medicine*, but by my geographical location in the UK and my 'research location' in the areas of qualitative research and capability measurement, which sit outside of the more mainstream foci of neo-classical/welfarist (economist) theory, extra-welfarist health-focused (health economist) theory and the application of econometric methods.

The paper begins with a brief look at the development of health economics over the last fifty years, focusing in particular on the challenges of applying economic theory to health. It then considers the development of the health economics aspect of *Social Science & Medicine* over the same period, before exploring the role that the journal has played in the publication of health economics research. The final main section notes some observations on recent bibliometric analysis in the health economics field, and the limitations of such analysis for providing a rounded review of publication within the field of health economics. A few concluding comments are offered.

2. The development of health economics over the last 50 years

Economics, of course, is first and foremost applied to the study of the economy, yet its models and theories have also generated new sub-disciplines in areas as diverse as social policy, agriculture and the environment. Health economics is one of these sub-disciplines. Over the past fifty years, health economics seems to have flourished where the economics of other areas of social policy, such as education, has not (Blaug, 1998; Wagstaff and Culyer, 2012). Indeed the subject is now sufficiently established and long-standing to be starting to generate its own history, with a recent call for a special issue of *Oeconomia* on the history of health economics (Oeconomia, 2017) and Wellcome Trust funded work in the UK exploring this history (Sheard, 2017).

The origins of health economics are frequently traced back to the work of economists such as Mushkin (1962), Arrow (1963) and Grossman (M. Grossman, 1972a; M. Grossman, 1972b) working in the health area from the early 1960s, with Williams noting that health economics in the UK probably began in the ten years prior to 1972 (A. Williams, 1998). Notwithstanding this accepted wisdom within the profession, Forget notes an example of the conduct of an elementary cost-benefit analysis from the late 1600s in relation to a public health intervention for ameliorating the plague, as well as the extent to which the emerging health economics drew on increasingly structured work on quality of life measurement from the 1940s and 1950s (Forget, 2004), suggesting a rather longer intellectual history. Nevertheless, the main growth within health economics did happen from the 1970s (Forget, 2004), with policy influence also occurring from this time

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(Hurst, 1998).

Throughout its relatively brief history, health economists have had the difficult challenge of trying to apply a body of theory that assumes the existence of markets and rational human actions, to a topic area that is, for the most part (particularly outside the US) characterised by a lack of health care system incentives of the type reflected in traditional market theories and by individual behaviour in relation to both health and use of health care that is not always well approximated by the model of rational maximisation of utility. Whilst economics can give, and has given, important theoretical insights into the ways that markets can fail within health care, these tend to be at a high level of generality and insufficiently context specific. There is a tension for health economists, who frequently work in a multi-disciplinary health or medical environment and outside the traditional academic economics department, in holding to the tenets of economic theory in a setting where it has clear limitations. As Blaug suggests, "health economics is a field which must make the average neoclassical economist squirm because it challenges his or her standard assumptions at every turn." (Blaug (1998), p.S65).

Health economists have, perhaps, found a greater necessity than others in the economics discipline to adapt their theoretical and methodological approaches to the realities that they face and the scepticism that can be expressed by colleagues outside the discipline. Being faced directly with a day to day environment where there is a desire to make a practical difference to the misery of those facing distressing health conditions, there may be more incentive to seek innovative alternatives that lead to higher benefits in terms of health and wellbeing, rather than maintaining a slavish adherence to purist theory. Health economists have certainly shown a willingness to adapt in this way, and a good example of such a move is the almost wholesale shift within normative health economics in the UK and further afield to an extra-welfarist normative position that enables information beyond preferences about goods and services (utility) to be considered in evaluation (Brouwer et al., 2008; Coast et al., 2008b). Nevertheless, it has been noted that although "… health economics would seem to be a perfect topic for heterodox dissent … radical economists and Marxists have not on the whole been attracted to health economics" (Blaug (1998), p.S65), and that health economists have tried to maintain some features of the mainstream even though they have clearly dismissed some other aspects (Coast, 2009).

The very different health care systems in different parts of the world have also led to very different forms of health economics in different settings. Where health care is predominantly privately provided, as in the US, standard economic concepts may be more applicable and research drawing on these approaches is dominant (Blaug, 1998); in settings where private markets are much weaker, or indeed non-existent, different problems pre-dominate and different solutions are required, such as the development of tools to enable the assessment of efficiency in these non-market settings.

In dealing with these difficult issues, health economists have drawn not just on the work of their parent discipline of economics, but also on the wider social sciences: qualitative research methods drawn from anthropology and sociology have been used to better understand rationing and priority setting mechanisms (Owen-Smith et al., 2015; N. Smith et al., 2016; I. Williams and Bryan, 2007) and financing systems in health care (Cruz and McPake, 2010; De Allegri et al., 2006); experimental methods drawing from psychology as well as economics have been used to explore behaviour (Dolan et al., 2015; Lagarde and Blaauw, 2017; Promberger et al., 2012) and values (Ratcliffe et al., 2016); alternative theoretical bases drawing particularly on work in development and philosophy have been used to generate new forms of measurement (Anand and Dolan, 2005; Greco et al., 2015; Huynh et al., 2017; Lorgelly et al., 2015; Simon et al., 2013). The benefits from health economics research that draws from economics but also more broadly across the social sciences, can only be achieved, however, if this research can be disseminated widely, and that is one of the roles that *Social Science & Medicine* has played for the last fifty years.

3. Publishing health economics papers in *Social Science & Medicine*

Health economics was clearly a fledgling area of research at the time that *Social Science & Medicine* was launched, yet by 1977 the field of 'medical economics' was sufficiently established that it was able to provide one of six sub-sections for the newly categorised *SSM*, perhaps providing the first of the major health economics journals that Forget notes as beginning to appear in the late 1970s (Forget, 2004). This brief period during which the journal was split in this way is interesting to consider, not least because it is possible to easily separate out those papers falling into the health economics field. During this period, 72 full papers were published in the 'medical economics' sub-section, with US-based authors clearly dominant, with more than 50 papers. The UK, in second place, was a long way behind with just six papers and of all other countries, just Canada, Denmark, Sweden and Switzerland published more than a single paper in the 'medical economics' part of the journal during this four year period. Nevertheless, these other countries perhaps punched above their weight with three (Culyer and Maynard, 1981; Jönsson and Lindgren, 1980; Sintonen, 1981) of the six (Culyer and Maynard, 1981; Fiedler, 1981; Gish, 1979; Jönsson and Lindgren, 1980; Sintonen, 1981; Walsh and Warren, 1980) most highly-cited papers (Scopus, 30th March 2017) emanating from non-US based authors.

Since the return to a non-sectioned journal in 1982, there have been many health economics papers published, with a number of outstanding contributions to the discipline from across the globe. Some of the highly-cited contributions include papers focusing on issues around: equity and inequality (Deaton and Lubotsky, 2003; Goddard and Smith, 2001; Hawe and Shiell, 2000; McIntyre et al., 2006; Morris et al., 2005; Van Doorslaer and Gerdtham, 2003; Wagstaff et al., 1991); agency relationships (Charles et al., 1997, 1999; Gafni et al., 1998); health care systems (Gilson, 2003); determinants of health (Evans and Stoddart, 1990; Filmer and Pritchett, 1999; Ng et al., 2009); cost and resource use measurement (Koopmanschap and van Ineveld, 1992; Zhang et al., 2011) and its determinants (Dunlop et al., 2000; French et al., 2000; McDonald and Kennedy, 2004); measuring health outcomes (Drummond et al., 1993; Loomes and McKenzie, 1989; Marra et al., 2005; Nord, 1992; Robinson et al., 1997; van Agt et al., 1994) and broader wellbeing in the health context (Blanchflower and Oswald, 2008; Coast et al., 2008a; Ryan, 1999); and methods for economic evaluation more generally (Gafni and Birch, 2006).

Whilst shifts in published topics in *Social Science & Medicine* to a great extent mirror the broader concerns of health economists (with, for example, extensive publication on Quality Adjusted- Life Years (QALYs) in the late 1980s and 1990s), a number of the economics contributions to the journal have been characterised by being somewhat outside the mainstream of health economics. The mainstream of health economics typically comprises the application of econometric analysis to large datasets; often with an underlying neo-classical theory (although also at times focusing on largely epidemiological questions). A second focus of health economics is the production of normative economic analysis or modelling of specific interventions. Whilst *Social Science & Medicine*, of course, has many of both of these 'typical' paper types, it has also typically been open to economics papers that challenge the prevailing focus on quantitative techniques and/or mainstream theoretical assumptions. These notions are exemplified by the work of Gavin Mooney, "one of the most innovative and influential health economists of his generation" (Jan, 2014, p.257) and a member of the *Social Science & Medicine* Editorial Advisory Board for many years. Mooney published many contributions in *Social Science & Medicine* and his work was, following his untimely death, celebrated with a special issue (Donaldson and Birch, 2014). Mooney's research went beyond standard health economics in a number of directions: in thinking about the

appropriate outcomes for economic evaluation (Mooney and Lange, 1993; Ryan and Gerard, 2014); in considering a broader basis than efficiency as the foundation for resource allocation (Mooney, 1998, 2004; Wiseman, 2014); in critiquing the normative underpinning of health economics (Jan 2014; Jan et al., 2003); and in advocating that community values should provide the basis for health policy (McIntyre, 2014; Mooney et al., 2002).

These notions of going beyond the mainstream can be seen in the publication of health economics work within *Social Science & Medicine*, both among the highly cited papers mentioned earlier and in other work published within the journal. Some of the most innovative health economics research published in the journal has occurred when that work has taken notice of, and blended with, other areas of social science in an effort to better represent the health economy and the views and values of actors within that health economy. Essentially, much of the work published in the journal has gone beyond the standard approaches, pushing the research boundaries in a number of directions.

Work published in the journal has, for example, gone beyond the accepted approach to economic evaluation, embracing work on alternatives to the standard (for health economists) health-focused normative extra-welfarist approach to evaluation, including methods rooted both in welfarism (Birch and Donaldson, 2003; Lee et al., 2013; Mooney and Lange, 1993; Olsen and Donaldson, 1998) and capability (Anand and Dolan, 2005; Coast et al., 2008a; Greco et al., 2015; Grewal et al., 2006; Lorgelly et al., 2015; Mitchell et al., 2015; Simon et al., 2013). Research has focused on going beyond the patient in terms of outcomes (Al-Janabi et al., 2008; van den Berg et al., 2005) and beyond the health care system in terms of costs (Koopmanschap and van Ineveld, 1992; Krol et al., 2012). In terms of understanding the determinants of health, research has gone beyond the health care system (Amin et al., 2015; French et al., 2012) and there has been an extensive focus on equity issues (Ngalesoni et al., 2016; Wagstaff et al., 1991), going beyond the usual economic focus on efficiency. Work has also taken macro-level approaches to consider international issues with influence beyond individual country settings (R. D. Smith, 2004; R. D. Smith et al., 2011).

Methodologically, too, innovative approaches for the economics discipline have been welcomed, with the journal providing a place to publish for those economists whose work is, at least in part, situated in broader social science approaches. Research using methodological approaches more usually associated with sociology or anthropology has been supported by the journal, with health economics qualitative research (Coast, 2017) on a broad range of topics including priority setting (Coast et al., 2002; Garpenby and Nedlund, 2016; Owen-Smith et al., 2015; N. Smith et al., 2016), rationality (Baker, 2006), health insurance (De Allegri et al., 2006) and conceptualising outcomes (Al-Janabi et al., 2008; Grewal et al., 2006; Jackson and Roberts, 2015). Experimental economics approaches have also been embraced (Dolan et al., 2015; Lagarde and Blaauw, 2017).

Health economics is clearly based on the economics discipline and draws strengths from maintaining its links with economics, but there is also a space for broader, innovative, integrated approaches that draw on the strengths of other social science disciplines. Increasingly, funding agencies are focusing on inter-disciplinary work, as in the recent UK call for inter-disciplinary work from across the social sciences on behaviour around antimicrobial resistance (Economic and Social Research Council, 2016). Alongside such interdisciplinary research, there is a need for open-minded journals that can provide a home for such work. Whilst those doing conventional cost-effectiveness analyses will generally house their research within medical journals and those pursuing traditional econometric analyses are well served by the main health economics journals (the March 2017 edition of *Journal of Health Economics*, for example, is entirely composed of such papers), *Social Science & Medicine* has traditionally provided a home for these cross-disciplinary, often very innovative papers.

Perhaps one factor that has influenced this open approach within the journal is that the editors of *Social Science & Medicine* over the years have not been from a single or very small number of institutions. Instead, its subject editors (introduced from 1977 onwards, where previously there were regional editors) have been based in different types of departments, different institutions, and different countries over the years. For health economics, these comprise the USA (2), Canada (2), Netherlands (1) and UK (1) and the regular shift in editorial location and background may have enabled the journal to retain a broad and inclusive approach to the health economics research it publishes. The shifting base for the editorial role within *Social Science & Medicine* contrasts sharply with the *Journal of Health Economics* which has throughout its history been 'jointly edited from Harvard and York' (https://www.york.ac.uk/che/publications/journals/), and *Health Economics* which was also started at the University of York and retains an editorial base there. The grip of the University of York on the health economics sub-discipline was noted by Croxson in her history of the UK HESG (Croxson, 1998), and albeit to a lesser extent, this can still be seen today. For *Social Science & Medicine*, the regular change in editorial location and the background and interests of its editors has, perhaps, resulted in a broader sense of what 'health economics' encompasses.

4. Publishing in health economics

Health economics is a broad discipline with practitioners who do very different types of work, that gets published in very different types of journals. There is an increasing number of discipline specific journals, led in historical and status terms (although not necessarily impact factor) by *Journal of Health Economics* and *Health Economics*, established in the early 1980s and early 1990s respectively. These have been followed by the proliferation of further health economics journals, devoted either to particular regional areas (*African Journal of Health Economics; American Journal of Health Economics; European Journal of Health Economics*), or to specific areas of study (*Applied Health Economics and Health Policy; Health Economics, Policy and Law; PharmacoEconomics*). Health economists also publish in the core economics journals and, importantly for influence on health service provision, in broader health and policy journals (such as *Health Policy; Medical Decision Making; Journal of Health Services Research & Policy; Value in Health*), broader social science journals (including *Social Science & Medicine*) and medical journals. Indeed, as Forget notes, "… health economists do not typically write for other economists. They write for practitioners and for policy makers" (Forget (2004), p.20).

There is often a tension for academic (health) economists in choice of publication outlet. Credibility as a (health) economist might be seen as requiring publication in (health) economics journals. Yet, it may not always, or even most often, be other economists that the health economist wants or needs to influence; also of importance are other social scientists and, particularly, the general medical community. For those who want to make a difference to medical practice, the choice to publish in a general medical journal is often clear. Publishing in the broader social science journals can also be a good option for those doing innovative multi-disciplinary work that draws on theories or techniques outside those traditionally found in the (health) economists' toolbox.

The issue of credibility is important however. In 2012, Wagstaff and Culyer published, in the *Journal of Health Economics*, research on the most-cited publications in health economics, the "top 100 health economists" and the "top 100 institutions in health economics", based on a bibliometric analysis of health economics papers (identified through use of a health JEL code) included in EconLit. This work deserves comment because of the skew it imposes on understanding of the health economics discipline both in terms of its top health economists and its top papers; EconLit is a source that selects journals (and other literature) based on their economic content and thus use of this source excludes peer-review journal dissemination by health economists to wider academic and policy groups, including both the broader social science and medical communities. A major concern with the paper is that, because of its singular focus on the economics literature base, it

misses the essential multi/interdisciplinary nature of health economics on the one hand and the important 'health' element on the other. Whilst acknowledging concerns, for pragmatic reasons Wagstaff and Culyer understandably accepted the limitations of this database and used these data to rank institutions and health economists on the basis of their 'h-index'.

Wagstaff and Culyer state that they 'leave open the tantalizing question of whether our reliance on EconLit biases our results in such a way as to deny anyone entry into the top ten!' (Wagstaff and Culyer (2012), p.437), but it is clear from even a cursory examination of other, broader bibliometric databases that this is indeed the case. Using data from Google Scholar (accessed in March 2017) it is possible to identify health economists who: (i) appear on the Wagstaff-Culyer list, by name, and have a 'Google Scholar profile'; (ii) do not appear on the Wagstaff-Culyer list, but have a 'Google Scholar profile' with a job title that includes the terms 'economics' and 'health' and/or who list 'health economics' as a keyword. Whilst there are obvious caveats in using these data, not least of which is that not all academics (including a number of those on the Wagstaff-Culyer list) have a Google Scholar profile, it is instructive to consider those health economists meeting these two criteria with the highest Google Scholar h-indexes and to compare them with those on (or not on) the Wagstaff-Culyer list (see Table 1).

Unsurprisingly, those who appear at the top of the Wagstaff-Culyer list from 2012 (and who have a Google Scholar profile) also, in 2017, have Google Scholar h-indexes that are among the highest. Unfortunately, however, there are clearly also economists who are excluded in the analysis conducted by Wagstaff and Culyer. Table 1 ***by no means*** produces the sort of rigorous bibliometric analysis that the Wagstaff-Culyer list provides, but it suffices to show, in a relatively 'back of the envelope' manner, that focusing just on health economists' publications in journals and other sources listed on EconLit misses a large part of the totality of health economists' contributions, including missing the entire contributions of extremely productive and renowned health economists whose Google Scholar h-indices equate with those who appear high up on the Wagstaff-Culyer list of the top 100 health economists, as well as some of those who have a more general contribution that includes health economics.

Table 1
Top 'health economists', from those for whom there is a publicly available 'Google Scholar profile', ranked by Google Scholar h-index.

Name	Ranking as at March 2017 based on h-index included in Google Scholar profile	h-index Google Scholar, March 2017	Position on Wagstaff-Culyer list	h-index, Wagstaff-Culyer EconLit 2012 list
Joseph P. Newhouse	1	101	10	28
Angus S. Deaton[a]	2	98	22	21
Martin Knapp	3	93	–	–
Jere R. Behrman[a]	4	88	13=	26
W. Kip Viscusi[a]	5	86	4=	34
Alvin E. Roth[a]	6	86	95=	13
Magnus Johannesson[a]	7	82	13=	26
Jonathan Gruber	8	79	2	39
Frank A. Sloan	9	79	3	36
Richard Lilford	10	77	–	–
Mark Sculpher	11	76	–	–
George Torrance	12=	71	–	–
Adam Wagstaff[a]	12=	71	4	34
Alastair Gray	14	70	–	–
John E. Brazier	15=	69	–	–
Eddy van Doorslaer	15=	69	9	29

[a] Not identifiable on 'Google Scholar profiles' through a job title that includes the terms 'economics' and 'health' and/or through listing of 'health economics' as a keyword.

Of course, there would be just as many limitations in an analysis conducted entirely through Google Scholar, if not more (not all researchers have publicly available profiles; those that do, may not self-identify with 'health' and 'economics' terms; those including 'health economics' as a keyword may have backgrounds in other disciplines; papers for health economists included in a Google Scholar profile may not be health economics papers (for example, those providing the health economics expertise in a randomised controlled trial may be named on the main trial paper for their contributions to more general aspects of the trial, even if the paper does not include economic analysis); health economics papers published in non-health economics journals may not have been reviewed by health economists). But suggesting an alternative bibliometric approach is not the point of this discussion; rather it is to illustrate that focusing entirely on publications indexed in EconLit misses much of the contribution to health economics of papers published in other journals, particularly around issues such as preference-based measurement, healthcare resource use, and economic evaluation and its methodological development.

It is clear from this brief foray into publication practices, that many economists with a focus on health publish extensively outside the economics journals, including in journals focusing on medicine, health care and health policy and the more general social sciences, with the economists who are at the cutting edge in working with other disciplines also sometimes publishing in the journals of those other disciplines - psychology, social science, human biology, development and so on. Whilst the paper by Wagstaff and Culyer is both interesting and informative, by focusing primarily on those health economists who choose to publish extensively in economics journals, it also does the broader community of health economists somewhat of a disservice by making the discipline seem much less outward looking than it really is. It is notable that Newhouse, in 1997, surveyed health economists to find out about their views of the most influential paper of that time in terms of both influence on the health economics discipline and on UK policy: 'Not only was the winner in the same paper in both categories, it was not published in an economics journal' (Newhouse (1998), p.S88).

Of course, any single economists' h-index will be influenced by publication in a large variety of journals, and sadly, the influential paper noted by Newhouse (by Alan Williams (A. Williams, 1985)) was not published by *Social Science & Medicine* either, but there is evidence that *Social Science & Medicine* attracts some of the strongest papers in health economics. There are clearly a number of health economists' papers published by the journal that ***are*** comparable, in terms of current (June 2017) Google Scholar citation levels, with the papers featured in the list of the top 300 health economics papers (across twelve categories) also published by Wagstaff and Culyer (Wagstaff and Culyer, 2012). Important examples include the paper by Wagstaff, Paci and van Doorslaer on measurement of inequalities in health (Wagstaff et al., 1991) that would feature third (n = 1288) in the 'Efficiency and equity' category behind papers on economic status and health in childhood (n = 1477) (Case et al., 2002) and motivation, agency and public policy (n = 1310) (Le Grand, 2003), and papers by Charles, Gafni and Whelan on shared decision making in the context of agency relationships (Charles et al., 1997, 1999) that would feature second (n = 2692) and third (n = 1777) behind only Grossman's seminal 1972 contribution (Michael Grossman, 1972b) (n = 5810) in the category of 'Demand for health and health care'; there are other papers that would also feature in these same two categories with comparable current citation levels to the papers included in the top 300 (Goddard and Smith, 2001; Hawe and Shiell, 2000; McIntyre et al., 2006). Whilst categorising authors is clearly problematic (in particular, the definition of a 'health economist') and was avoided by the Wagstaff-Culyer methodology, it is clear that *Social Science & Medicine* has been an influential outlet for significant health economics research alongside its more disciplinary focused peers, and continues to provide important contributions to publishing in health economics.

5. Concluding comments

For the last fifty years, *Social Science & Medicine* has grown alongside the discipline of health economics. For health economists, it is has offered a valuable outlet for health economics research within the mainstream but also for research that draws on broader social science theory and methodology. The journal has often provided an academic lifeline for those whose research does not fit into neat disciplinary boxes, who are operating on the boundaries of health economics and whose papers are often developed in teams that include authors from other social science disciplines, outside of economics. A journal such as *Social Science & Medicine* has, at its heart, the flourishing of the social science disciplines such that they can ultimately add to human health and wellbeing across society, and remains a positive publication choice for many health economists.

But what of the future? As with all areas of academic research, there are now multiple journals filling similar or slightly differentiated spaces, and it will be incumbent on the editors going forwards to maintain a distinctive and open approach to the publication of health economics research that truly brings a social science approach to the questions of the health economy and those within it, so that publishing in *Social Science & Medicine* remains an attractive option. Authors of such papers are encouraged to submit to the journal!

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