
Original Article

An institutional theory of welfare state effects on the distribution of population health

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Abstract Social inequalities in health endure, but also vary, through space and time. Building on research that documents the durability and variability of health inequality, recent research has turned towards the welfare state as a major explanatory factor in the search for causes of health inequality. With the aims of (i) creating an organizing framework for this new scholarship, (ii) developing the fundamental-cause approach to social epidemiology and (iii) integrating insights from social stratification and health inequalities research, we propose an institutional theory of health inequalities. Our institutional theory conceptualizes the welfare state as an institutional arrangement – a set of ‘rules of the game’ – that distributes health. Drawing on the institutional turn in stratification scholarship, we identify four mechanisms that connect the welfare state to health inequalities by producing and modifying the effects of the social determinants of health. These mechanisms are: redistribution, compression, mediation and imbrication (or overlap). We describe how our framework organizes comparative research on the social determinants of health, and we identify new hypotheses our framework implies. *Social Theory & Health* advance online publication, 17 June 2015; doi:10.1057/sth.2015.19

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Introduction

The existence of social inequalities in health is well established: people with higher education, status and income have lower morbidity and mortality. Although social inequalities in health exist in all societies worldwide (Beckfield *et al*, 2013), the degree of these inequalities varies spatially, and notable differences exist within Europe (Bartley, 2004; Beckfield and Olafsdottir, 2009). There is a growing literature that examines how these between-country differences in health inequalities are potentially related to variations in the provision of welfare across Europe (for overviews, see Bambra, 2011a; Bambra and Beckfield, 2012; Bergqvist *et al*, 2013). This literature highlights that the welfare state has an important role in mediating the effects of the social determinants of health and also of socio-economic class on health. Currently, a motivating question for new research on health inequalities is how between-nation, on-average differences in summary health measures such as life expectancy can be reconciled with between-nation differences in the distribution of health and illness. That is, how should researchers theorize the role of the welfare state in the first and second moments of the health distribution?

In this article, we propose a theoretical framework for understanding how the welfare state organizes the distribution of health. We emphasize the role of institutional arrangements in distributing population health. Our objectives are to (i) organize recent social science scholarship on the welfare state and health inequalities into a general framework that conceptualizes the welfare state as a set of stratifying laws and policies, (ii) contribute to the further specification of the 'fundamental cause' approach to disease distribution (Link and Phelan, 1995) and (iii) re-engage research on health inequalities with structural theory in the social sciences (Cockerham, 2013).

Welfare States, Health and Health Inequalities

In its narrow definition as the state's role in education, health, housing, poor relief, social insurance and other social services, the welfare state clearly plays a key role as mediator in the influence of the material and social determinants of health and health inequalities. This is most obvious in terms of the strong relationship between universal health-care systems, higher levels of health-care decommodification (Bambra, 2005), better population health and lower health inequalities (for an overview, see Beckfield and Krieger, 2009).

But in its broadest definition, the welfare state sets the parameters in which the social determinants of health occur. Further, the way in which the *welfare state* distributes financial resources and welfare services has consequences for social and economic hierarchies. There are different types of welfare states offering varying



levels of welfare provision – often these are summarized in the form of different welfare state regimes: most prominently Liberal (minimal state welfare, heavy reliance on the private sector, for example, the United Kingdom, the United States); Conservative (status differentiating welfare, high role for employers); and Social Democratic (encompassing, generous, equalising benefits) (Esping-Anderson, 1990; see Bambra, 2007 for a review of the regime-types literature in public health). These have mediated the impact of the social determinants of health and also of socio-economic class on health to varying degrees.

The general pattern found by epidemiological studies that have analysed cross-national differences in population health between different types of welfare state is that infant mortality rates (IMR) vary significantly by welfare regime type, with rates lowest in the Social Democratic Scandinavian countries and highest in the Liberal ones. For example, Chung and Muntaner's (2006) multilevel longitudinal analysis of welfare state regimes found that around 20 per cent of the difference in IMR between countries, and 10 per cent for low birth weight (LBW), could be explained by the type of welfare state. Social Democratic countries had significantly lower IMR and LBW rates, compared with all other welfare state regimes. Existing theories of the social determinants of health led to an expectation that this high performance of the more encompassing welfare states in terms of general population health would also be reflected in terms of smaller health inequalities within these countries.

However, the expectation that a high level of on-average population health (for example, long life expectancy or low infant mortality) in encompassing welfare states should entail low levels of social inequality in health has not been borne out in a straightforward way (Mackenbach *et al*, 2008), and has generated debate over relative versus absolute measures of inequality (Bambra, 2011a, 2013), and the measurement of welfare states (Bergqvist *et al*, 2013). This raises the intriguing possibility that the causes of on-average summary measures like infant mortality and life expectancy differ from the causes of social inequalities in health. In more formal terms, the causes of the first moment of the health distribution probably differ from the causes of the second moment of the health distribution. Since we know that there is a strong correlation between the welfare state and the first moment of the distribution, the pressing question becomes how we should theorize the relationship between the welfare state and the *distribution* (rather than the on-average level) of health.

Current Theories of the Welfare State and Health Inequalities

Previous work on how welfare states affect social inequalities in health relies – implicitly or explicitly – on materialist, cultural-behavioural, and psychosocial approaches. Materialist theory emphasizes income: social inequalities in health



would mainly arise because groups with higher incomes are better able to afford access to goods and services that are conducive to good health (for example, health care, housing and healthy food). Cultural-behavioural theory stresses that the relationship between social factors and health is mainly a consequence of social differences in health behaviour (for example, in most countries, smoking and unhealthy diets are more prevalent in the lower socio-economic strata). Inequalities in health behaviour would mainly be a result of cultural acceptance of health damaging behaviour in the lower social groups. Finally, psychosocial theories focus on the emotional feelings and physical stress response that result from being exposed to social inequality and social exclusion. Rather than through the availability of material resources or cultural acceptance, social inequality would be associated with health through the presence of a social hierarchy as such. Social inequality creates relative differences between groups, which would lead to feelings of inferiority and subordination and ultimately to physical and mental stress responses.

The materialist, cultural-behavioural and psychosocial approaches can help to understand why some people have better or worse health than others when compared within societies, but without considering these individual- or household-level causes in institutional context, they are of more limited utility in explaining why some of these individual-level determinants should vary in their frequency or in their effects across institutional contexts. That is, given a distribution of the social determinants of health and a set of class relations, materialist, cultural-behavioural and psychosocial approaches identify processes that translate these distributions into health, but these theoretical approaches tend not to problematize the distribution itself. They are also less well equipped to explain how the same individual- or household-level causes vary in their effects across institutional settings.

Another issue is that each of the existing theories of health inequalities tries to pinpoint one or other specific aetiological cause of health inequalities. In welfare state terms, it is unlikely that it is one particular facet of a welfare model that leads to better/worse population health outcomes or smaller/larger health inequalities. Rather it is the entire approach to accumulation, legitimation and reproduction taken by a particular welfare state, over a long period of time or lifecourse, that may matter.

Further, because existing theories adopt methodological nationalism (Wimmer and Glick-Schiller, 2002), they overlook institutional effects that span national boundaries (Turner, 2004). An explanation that starts foremost with an understanding of welfare state *institutions*, rather than with conventional theories of health inequalities, is required. Again, this is not because we want to argue that material, cultural and psychosocial causes are not important or do not affect health; we argue that our institutional framework is necessary, in part, because it



helps to organize these causes into a comparative framework that explains how, where and when these causes have larger or smaller effects on the distribution of health. We develop such an institutionally focused approach below.

An Institutional Theory

While existing institutional theories mainly focus on institutionalization processes and seek to explain how institutions emerge, endure and change (Hall and Taylor, 1996; Korpi and Palme, 1998), we are mainly interested in institutional effects. That is, our explanandum is effects of institutions rather than causes of institutions, but we draw on institutional theory in conceptualizing how institutions relate to health inequalities. More specifically, our theoretical approach to the relationship between the welfare state and the distribution of population health builds on and contributes to a developing institutional turn in stratification theory (for a more general treatment of institutional theory across the social sciences, we refer the reader to Hall and Taylor, 1996). We contribute to this institutional turn by explaining how attention to health inequalities can generalize the turn beyond economic inequality. In so doing, we draw on what could be called the ‘old institutionalism’ (Stinchcombe, 1997), in emphasizing ideas that are codified into law, activated by policy and enforced by institutional agents. We note that a ‘new institutionalist’ variant of our approach could be developed for a more cultural sociology of health inequalities.

The institutional turn in theory and research on social stratification explains social inequalities in various assets, or capabilities (for example, resources parents provide to children, schooling systems, labour markets, poverty spells and accumulated wealth) as a function of the institutions or ‘rules of the game’ that organize political economy. This is a major shift away from the classical traditions of research on family background, educational attainment and occupational status, which dominated inequality research in post-war European and North American social science (Duncan and Blau, 1967; Sewell and Hauser, 1975; Erikson and Goldthorpe, 1992; Mueller and Shavit, 1998). Instead, contemporary work emphasizes meso-level rule-like arrangements in neighbourhoods and organizations in theorizing inequalities (Burt, 2005; Savage *et al*, 2005; Sørensen, 2007; Sampson, 2012). Even more recently, spurred in part by newly available, cross-nationally comparable, individual-level data (Gornick and Jaentti, 2013) and new techniques for the analysis of the multilevel data (Gelman and Hill, 2007; Snijders and Bosker, 2012), theories of inequality are turning towards macro-scale institutions to understand how ‘the rules of the game’ (as a common English shorthand for ‘institution’ puts it) create ‘winners’ and ‘losers’



in social life (Fischer *et al*, 1996; Kenworthy, 2004; Pontusson, 2005; Western, 2006; Brady, 2009; Pettit and Hook, 2009). Institutions, as we use the term, include welfare-state policies identified by Bergqvist *et al* (2013) in their review of three varieties of welfare-state and health research.

To date, social science research has investigated a relatively small set of institutions in its recent turn towards institutional explanation, and this work has also focused on economic goods such as wages and poverty. The institutions that best explain income inequality, for example, include public welfare expenditure, minimum wage-setting, corporatist bargaining arrangements, child care and family-leave policies, regulation of part-time and full-time employment, public pensions, and the expansion of incarceration in the United States. At the level of theory, the argument is that such institutions affect inequality in the distribution of goods (income, wealth, poverty) through direct redistribution (in the case of welfare-state income transfers), constraints on the wage distribution (in the case of a minimum wage) or through other determinants of income (in the case of incarceration, which raises the probability of exclusion from paid employment in the United States). We propose broadening these theoretical developments to a wider range of stratified goods, including the many elements of socio-economic position. That is, this developing institutional theory holds that inequality in some variable *Y* can be explained in part by institutional factors that (i) shift *Y* from people who have more *Y* to people who have less *Y* (or vice versa, through regressive taxation), (ii) limit how low or high *Y* can go for different population groups or (iii) affect other variables such as *X* that themselves affect *Y* and its distribution. We argue that these institutional mechanisms are helpful in thinking not only about the distribution of health, but also the distribution of the social determinants of health.

These three institutional mechanisms – redistribution, compression and mediation – identify how an institutional theory of health inequality can be developed. In European welfare states, the reason social inequalities in health are surprising is that health care has long been considered and delivered as a citizenship right as have other areas of social provision such as income support for the unemployed. At least for citizens, then (the picture is more complicated if we include non-citizen migrants), the redistribution (for example, income redistribution as an institutional effect on one of the social determinants of health), compression and mediation channels from institutions to inequality should be working to reduce health inequality. That is, welfare states set a minimum bound for the healthcare of citizens (compression, which happens in part as regulations of health-care access) and they limit inequality in some of the factors that have been established as robust social determinants of health, such as income (mediation).



We take the complexity of population health distribution in institutional context as an invitation to theoretical development. Any measure of health inequality is a snapshot, taken at one moment in the evolution of a population, that compares the health of one socially defined category of people to another. For instance, women aged 45–64 with a university degree could be compared with same-aged women with a lower level of educational attainment than a university degree, on the common metric of a depression scale, blood pressure or mortality risk over a defined period. An institutional theory explains this health inequality as a function of redistribution (shifting social determinants of health like income and wealth), compression (institutional arrangements that provide health care directly, thereby lowering rates of the most common illnesses for this group) and mediation (institutional arrangements that reduce educational inequality). These effects can be reinforcing, but they can also be cross-cutting.

This example illustrates well the theoretical complexity in understanding how health inequalities respond to institutions. Illnesses vary greatly in aetiologic period, with some like heart disease emerging over decades, and others like depression emerging quickly in response to disruption. Populations evolve over time, as people are born, migrate and die. People carry with them early-life conditions, such that an educational system in early adulthood determines educational inequality throughout the lifecourse. At the same time, institutions change, sometimes slower than bodies, but sometimes faster (Streeck and Thelen, 2005). People within a population at any one time have therefore potentially experiences with different *welfare state lifecourses* (Bambra *et al*, 2010). A key innovation we propose is that insights from the extensive literature on the lifecourse should be synthesized with social epidemiological knowledge about disease aetiology, and comparative-historical evidence on institutional change (Hall and Taylor, 1996; Korpi and Palme, 1998; Kangas and Palme, 2007).

Another theoretical challenge that arises in the case of health inequality – in part because welfare state institutions have direct and indirect effects on health – is the potential of cross-cutting or amplifying institutional effects across institutional domains. That is, welfare states can stratify health through health care, and, simultaneously, through the distribution of other valued goods that themselves operate as social determinants of health (such as employment security and precarity). With respect to inequalities in mortality, the institutional effect of health-care institutions may be restricted to amenable mortality (Nolte and McKee) while other welfare state institutions through their impact on social determinants of health also effect inequalities in mortality that are not directly affected by the health-care system. We conceptualize this simultaneous operation of institutions in multiple domains at multiple levels as *institutional imbrication* (the concept of imbrication draws on Sassen's work on globalization). Institutional imbrication is the overlapping of two or more institutions, such as when the



educational system distributes resources that are themselves important within the health-care system. For instance, a highly stratified educational system would amplify health inequality in situations where complex treatment regimes produce strong educational gradients in health care. Imbrication allows for amplifying, cross-cutting or moderating effects of institutional arrangements, accurately reflecting the reality that people live more than one policy at a time over the life course.

Note that this perspective would take into account the role of multiple disadvantage to explain the persistence of social inequalities in health in welfare states. By mostly targeting the financial dimension of disadvantage, welfare states may have neglected that financial adversity is often paralleled by other dimensions of disadvantage (Weber, 2006). People who are most in need of financial compensation by the welfare state also have lower educational levels, less social support and smaller social networks. In addition, financial disadvantage is found more among social groups that face discrimination and social exclusion, such as women (especially lone mothers) and ethnic minorities (Raphael and Bryant, 2004). This connects to Sen's (1999) capability approach. This general framework states that people will only be able to translate endowments (such as sufficient financial means) into capabilities (such as the capability to pursue a healthy life) if they possess sufficient so-called 'conversion factors' (for example, cognitive or social resources). On the basis of this general framework, we suggest that people are only able to turn the financial compensation and other incentives provided by the welfare state into health benefits if they have the right resources (private household or public welfare) at their disposal to do so (Bartley, 2003).

We emphasize that these resources may be located both at personal or social and societal levels. For example, at the personal level, people will benefit more from welfare arrangements if their educational level is higher (for example, because of better knowledge on how to make adequate use of health-care services provided by the welfare state). At the societal level, social norms may facilitate the use of welfare arrangements by disadvantaged groups (for example, in societies with norms that are positive towards working women, lone mothers will be more prone to use subsidized child-care arrangements offered by the welfare state). Turning to the institutional level, the specific institutional arrangements determine whether welfare beneficiaries can use their higher educational status for choosing child care, health care or other welfare arrangements or not (see on access to health care Reibling and Wendt, 2011).

Note also that the institutional arrangements that distribute population health through redistribution, compression, mediation and imbrication (overlap) need not be exclusively or even mostly national in scope. That is, arrangements that blur the boundaries of welfare (Ferrera, 2005) are incorporated in our endeavour



to build a theory of the distribution of population health that takes globalization (and other forms of trans-national interaction, such as regional integration) seriously by problematizing the very boundaries of institutions.

Institutions and ‘the Causes of the Causes’

In this section, we explain how our theoretical approach integrates research on the social determinants of health with research on the distribution of health and illness. The social determinants of health are the conditions in which people work and live – what have been referred to as the ‘causes of the causes’ (Marmot, 2006). The main social determinants of health are widely considered to be: income, working conditions, unemployment, access to essential goods and services (specifically water, sanitation and food); housing and the living environment; access to health care; and education (Dahlgren and Whitehead, 1991). We note that the social distribution of all these causes of causes is a function of institutional arrangements that vary systematically across societies (collective bargaining institutions profoundly affect working conditions and un/employment, and welfare states structure access to goods, services, housing, health care and education by defining some and not others as among the social rights of citizenship). Crucially, the distribution of institutional effects itself depends upon regimes of citizenship (Turner, 2004), which variably incorporate people into politics that establish the boundaries of the state, stratify people into ranked positions and allocate unequal goods to those positions (Kangas and Palme, 2007). Thus, institutional arrangements explain not only the distribution of the social determinants of health, but also account for how and why the social determinants vary in their effects across institutional settings.

Consider the labour market, long acknowledged as an important determinant of health and health inequalities. Physical working conditions (for example, exposure to dangerous substances such as lead, asbestos, mercury and so on, as well as physical load or ergonomic problems) were a major cause of ill-health in the working age population and, because of the steep social gradient in physical working conditions, remain an important factor behind social inequalities in health. Stressful psychosocial work environments (specifically demand control and support or effort reward imbalance; for example, Bambra, 2011b), however, have become more prominent as determinants of health, and exposure exhibits a strong social gradient that influences inequalities in health among employees. There are important international variations in working conditions that reflect differences within the wider welfare state and labour market regulation context. For example, workers in countries with higher union membership are able to obtain better working conditions (Benach *et al*, 2007). The decline of unions



across Europe (Ebbinghaus, 2002; Pinto and Beckfield, 2011) would be one macro-scale institutional change that should support increased inequalities in working conditions, and thus increased inequalities in health between union and non-union sectors; to our knowledge, the hypothesis that union decline contributes to the expansion of class-based health inequalities has not been tested.

Unemployment – one of the most important characteristics of the labour market as a whole, and also an individual's position within the labour market – is associated with an increased likelihood of morbidity and mortality (Bambra, 2011a). Recent research from the United States suggests, however, that the effects of unemployment on mortality are contingent on the level of unemployment, such that unemployment raises the risk of mortality only in the severest of recessions (Noelke and Beckfield, 2014). Because this work was done in the institutional context of the United States, it raises the intriguing hypothesis that unemployment's mortality effects are doubly contingent on not only the depth of recession, but also the deregulation of the labour contract. This is another example of how our institutional framework can generate novel hypotheses.

The negative health experiences of unemployment are not limited to the unemployed only but also extend to families and the wider community. Links between unemployment and poorer health have conventionally been explained through two inter-related concepts: the material consequences of unemployment (for example, wage loss and resulting changes in access to essential goods and services) and the psychosocial effects of unemployment (for example, stigma, isolation and loss of self-worth). Lower socio-economic classes are disproportionately at risk of unemployment and it is a key determinant of the social gradient in health. Health-related worklessness is also concentrated in more deprived areas and among less skilled workers. Again, our theoretical approach suggests that the health effects of unemployment should be dampened in places where the welfare state provides public resources that can substitute for the loss of private household resources.

Social protection (particularly wage replacement rates) during unemployment varies by welfare state regime. To a large degree this reflects the historical influence of differing political traditions, with those countries experiencing more post-war years of Social Democratic rule providing more generous systems of support (Esping-Andersen, 1990). In essence, there are three interrelating principles underpinning provision: universalism, social insurance and means-testing (Diderichsen, 2002). Systems based on universal provision do not make reference to previous contributions or means-testing and are offered to all citizens on an entitlement basis as long as specific demographic, social or health criteria are fulfilled. Often flat-rate benefits are paid. Under social insurance



systems, entitlement to benefits is dependent on previous contributions and in most cases subsequent benefit levels reflect previous earned income. Under means-testing, entitlement is restricted on the basis of income and the (often minimal) financial support is targeted at those in most need, usually after they have exhausted all other means (for example, personal savings or social insurance) (Korpi and Palme, 1998). Attention to the health-distributing effects of these varying institutional designs would contribute to the development of our theoretical approach.

For instance, the role of imbrication (overlap) can be specified by considering how unemployment protection mixes policy principles of universalism and means-testing. There are also clear differences by welfare state regime – due to the influence of differing political traditions – in terms of how these principles are put into practice, particularly in terms of the generosity of benefits paid to the unemployed (replacement rates), the qualifying period and conditions, duration of benefit payments and the waiting period before entitlement is activated. In each of these respects, the Scandinavian welfare states are generally more generous than the other welfare state regimes, particularly in comparison to the Liberal regime. Differences in the social protection offered to the unemployed could therefore be an important mediatory factor in the relationship between poverty, unemployment and health especially since employment-based inequality in health should depend on three factors: the level of unemployment, the age structures of the employed and unemployed populations, and the form of provision of unemployment insurance benefits.

A study by Bambra and Eikemo (2009) compared the extent to which relative health inequalities between unemployed and employed people varied across 23 European countries and in terms of the different approaches to social protection taken by different European welfare state regimes (Social Democratic, Liberal, Conservative, Southern and Eastern). The study found that in all countries, unemployed people reported higher rates of poor health than those in employment. There were also clear differences by welfare state regime. Relative inequalities between employed and unemployed were largest in the Liberal regime. Wage replacement rates for the unemployed are the lowest in these welfare states, and benefits are means-tested and subject to strict entitlement rules. The unemployed in the Liberal welfare states are therefore at a great financial disadvantage in comparison to those in employment and this may well explain the magnitude of inequality as financial strain has been found to be an important factor in the relationship between unemployment and ill health (Kessler *et al*, 1987). Furthermore, means-tested benefits are associated with stigma and so the non-financial problems of unemployment may be greater in the Liberal welfare states (Diderichsen, 2002). A comparative study by Rodriguez (2001) found that in the United Kingdom, Germany and the United States, the



likelihood of reporting poor health was significantly higher among unemployed people in receipt of means-tested benefits than those in receipt of entitlement benefits. These results illustrate the compression and mediation channels of our institutional theoretical approach.

Access to clean water and hygienic sanitation systems are the most basic prerequisites for good public health. In the advanced capitalist democracies, access to water and sanitation were among the first major public health reforms of nineteenth-century Europe, although it was often only with the slum clearances and the advent of the post-war welfare state that access became universal. Agricultural policies affect the quality, quantity, price and availability of food, all of which are important for public health. Access to healthy food is often restricted by what have been termed ‘obesogenic environments’: geographic areas (usually low income areas) with little access to fresh fruit and vegetables, high access to fast foods combined with low access to green space or sports facilities for exercise (Lake and Townshend, 2006). International variations in access to healthy food, obesogenic environments and the naturalization of the individual as the locus of autonomous food choices (Mayes, 2014) may be important factors behind differences in the health of populations, and well illustrate the compression pathway from welfare states to the distribution of population health.

Housing has long been recognized as an important material determinant of health, and health concerns underpinned the slum clearances that accompanied the advent of the post-war welfare state. Damp housing can lead to breathing diseases such as asthma; infested housing leads to the rapid spread of infectious diseases; overcrowding can result in higher infection rates and is associated with an increased prevalence of household accidents. Expensive housing (for example, as a result of high rents) can also have a negative effect on health as expenditure in other areas (such as diet) is reduced (Stafford and McCarthy, 2006). Housing also illustrates how imbrication (overlap) can affect the distribution of health through the social determinants, as subsidies for property development and mortgage loans generate property bubbles and counterproductively high interest rates.

Access to health care is a fundamental determinant of health, particularly in terms of the treatment of pre-existing conditions. In most European countries, access to health care is universal. However, there are variations in terms of how health care is funded (for example, social insurance, private insurance or general taxation), the role and level of co-payments for treatment, the role and level of prevention, the extent of provision – what has been collectively termed ‘health-care decommodification’ (Bambra, 2005), and how patients’ access to health-care providers is regulated (Wendt, 2009, 2011; Reibling and Wendt, 2011). Provision can also vary spatially within countries, depending upon how care



providers are incited to locate in deprived areas. People in lower socio-economic classes are also less likely to access health-care services than those in higher socio-economic classes with the same health need (Van Doorslaer *et al*, 2006; Reibling and Wendt, 2011). The regulation of access to health care is one example of how the redistribution channel might operate, as the welfare state regulates and incents the location of and access to medical care and public health resources.

There is undoubtedly a strong case for highlighting education as a major determinant of health and health inequalities – not least through its interaction with other determinants. Education has traditionally been an important route out of poverty for disadvantaged groups in many countries as qualifications improve people's chances of getting a job and of having better pay prospects. This in turn improves opportunities to obtain the prerequisites for health – nutritious food, safe housing, a good working environment and social participation (Dahlgren and Whitehead, 2007). There is a strong association between education and health: the lower the educational achievement, the poorer the adult health status, and vice versa (Furnée *et al*, 2008). High educational attainment improves health directly – greater health knowledge may help people promote their own health and avoid health hazards, including risky behaviour, and better access to medical care – but also indirectly – through influences on the types of work open to an educated person, the greater income that they can command, and the lower levels of stress that they encounter as a result of their privileged position (Dahlgren and Whitehead, 2007; Furnee *et al*, 2008). A well-functioning education system therefore has tremendous potential for promoting health (in general) and reducing social inequities in health (in particular) (Dahlgren and Whitehead, 2007). Access to higher education, the average education of the population, the quality of education and the necessity of education to mobilize other resources all vary across welfare states, and these forms of variation should help to explain how health is distributed by education in institutional context. This is potentially a case of imbrication: education may be a crucial factor in determining whether other social or health policies are successful in reducing health inequality.

Conclusion

In this article, we have developed an institutional theory of social inequalities in health. We accept as given the extensive documentation of health inequalities driven by the social determinants of health even in encompassing welfare states, and we take as a challenge the growing influence of the fundamental-cause approach to the distribution of health and illness. We argue that attention to four institutional processes helps to understand how the 'rules of the game' determine



the distribution of health. Redistribution channels resources among the population. Compression sets lower and upper bounds for the social determinants of health. Mediation intervenes on the operation of the social determinants. Finally, institutional imbrication (overlap) represents reinforcing or cross-cutting policies. We argue that the further specification and operationalization of these institutional processes will spur progress not only on the solution of existing public-health puzzles, but also on the identification of new puzzles.

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