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Health and the social investment state

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ABSTRACT

This paper calls on social policy scholars to approach health differently in their research. Our goal is to bring core insights from social epidemiology into conversation with welfare state and social policy research. We argue that the social investment framework has the most potential for this integration. The objective of social investment policies is to keep modern welfare states sustainable through high employment and strong human capital. This requires not only a large and well-educated workforce, but also a *healthy* one. Specifically, we encourage social policy scholars to engage with the social determinants of health literature by studying health not as outcome of the healthcare sector but of the welfare state as a whole. We argue that the social investment framework facilitates these endeavours and we offer suggestions for future research. Health should not just be seen as an outcome of specific policies, but rather as input for a sustainable welfare state.

KEYWORDS Health; institutional complementarity; research agenda; social determinants of health; social investment; welfare state

Introduction

Recent years have seen a vibrant scholarship on health policy and politics. While much is now known about changes to health policies and institutions over time, this scholarship still lacks research on the linkages between health policies and health outcomes (Marmor & Wendt, 2012). We argue that a new strand of health policy and politics scholarship is needed: studying not the healthcare sector, but *public* health. Public health differs from healthcare, because it has a preventative rather than a curative function. Goal of this paper is to bring core insights from social epidemiology research into conversation with welfare state research and propose a research agenda for this new welfare state scholarship on public health.

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Social epidemiology is a branch of epidemiology – the method used to find the causes of health outcomes and diseases in populations – focused on the relationships between social and structural factors on the one hand and health on the other hand. This is referred to as the *Social Determinants of Health* (SDH). The SDH are a complex web of relationships linking structural factors (policies, inequalities, institutions) to people's behaviour, and subsequently to individual health (CSDH, 2008; Whitehead & Dahlgren, 1991). Given its interest in the effects of structural societal factors, the SDH scholarship also speaks to welfare state scholarship. This exchange could be particularly fruitful in explaining the specific mechanisms linking the welfare state to health outcomes.

In welfare state scholarship, the social investment framework has the most potential for the integration of the SDH perspective and social policy research. The objective of social investment policies is to keep modern welfare states sustainable by maintaining high employment and strong human capital. This requires not only a large and well-educated workforce, but also a *healthy* one (Diderichsen, 2016). Social investment demonstrates the need to study health not only as outcome of healthcare and welfare state policies, but also considers health as input for active social policies.

Still, social investment has not often been analysed in relation to health. While social investment studies have focused on active labour market policies and early childhood education and care policies, there has not been much work focusing on health. Some authors have already taken steps to integrate health in the social investment framework (Diderichsen, 2016; Kvist, 2015; Schwander, 2019). These authors provide important entry points for the integration of health in the social investment framework. Still, such studies are the exception rather than the rule. Most recent academic volumes and journal articles on social investment refer to health in passing or not at all (Bonoli & Natali, 2012; Busemeyer et al., 2018; Hemerijck, 2017; Midgley et al., 2017; Morel et al., 2012).

In this paper, we propose a social investment perspective on health and develop avenues for its use and application. We analyse health through the lens of Hemerijck's (2017, pp. 21–23) stock, flow and buffer policy functions of the social investment state, which encompasses old as well as new social risks. *Stock* is the policy function linked to strengthening people's skills and capacities (e.g., early childhood education and care, training programmes, life-long learning). *Flow* is the policy function directed at making the most effective use of labour resources over the life-course in support of high employment (e.g., parental leave, active labour market policies). *Buffer* is the provision of social protection with the policy function of both securing income protection and securing economic stabilization (e.g., minimum wage, unemployment benefits). *Institutional complementarities* exist between each of these three policy functions. This concept relates to the way different

policies have a cross-cutting effect on the health distribution in society (Beckfield et al., 2015).

By integrating core insights from the SDH scholarship with research on social investment literature, we develop a future research agenda aimed at disentangling the complex mechanisms between macro-level welfare state institutions and micro-level health outcomes. The article proceeds as follows. In section 2, we review the state of the art on social epidemiology, specifically the SDH perspective, to identify gaps in social policy research. In section 3, we use insights from social epidemiology to offer a health-focused interpretation of the stock, flow and buffer policy functions and the institutional complementarity concept. This results in an agenda for future social policy research.

State of the art

Social policy research on health

In their extensive literature review, Marmor and Wendt (2012) identify two strands of health policy scholarship: one focused on political institutions and actors in healthcare *policy*, and the other focused on identifying and categorizing healthcare *systems*. Much of the early welfare scholarship on health can be situated within this first category (e.g., Giaimo & Manow, 1999; Hacker, 1998; Immergut, 1992; Tuohy, 1999). Recent scholarship has included studies on health attitudes amongst citizens (Jensen & Naumann, 2016; Schneider & Popic, 2018), the influence of the populist radical right on health policies (Falkenbach & Greer, 2021; Rinaldi & Bekker, 2021), health institutions in Eastern and Southern Europe (Asensio & Popic, 2019; Popic & Schneider, 2018), demographic ageing (Greer et al., 2021; Hess et al., 2017), and European health policy in general (Immergut et al., 2021). The Covid-19 pandemic furthered such research interests with a new but growing scholarship on the policy responses to Covid-19 and their outcomes (e.g., Bambra et al., 2021; Lynch, 2020b; Popic, 2020).

The second strand of literature identifies typologies of healthcare systems. Healthcare systems do not typically fit the typologies that have been identified for welfare states in general (Esping-Andersen, 1990; Ferrera, 1996). Scholars of healthcare have therefore identified alternative typologies based on the input side of health politics (which actors dominate in the healthcare system?) (Moran, 1999; Wendt et al., 2009) and on healthcare system characteristics (how are health care systems organized and financed?) (Reibling, 2010; Wendt, 2009). Yet not one typology has become dominant in this body of scholarship.

Unfortunately, neither strand of scholarship considers the question of *public health*. Healthcare as a sector is illness- or individual-based, because

healthcare service intervenes when an individual patient needs medical care for treatment of a disease. Public health is hazard- or population-based: the moment of intervention is when health is endangered, which precedes possible intervention of the healthcare sector (Trein, 2018). In short, healthcare is focused on cure, whereas public health is focused on prevention. The curative clinical approach, dealing with illness and its cures, has dominated health policy during the last 150 years (Trein, 2018, p. 26). Public health, however, has gained terrain since only a few decades, amidst growing political concerns over health inequality (Lynch, 2020a).

Consequently, research on health policy and politics does not always attend to the public health outcomes of healthcare systems. In a systematic review of 45 published articles on health inequities between 1992 and 2008, Beckfield and Krieger (2009) find that, despite common interests, scholars of healthcare systems rarely engage with scholars of health outcomes and vice versa. Marmor and Wendt (2012) similarly encourage health policy researchers to include health outcomes in their analysis. Exceptionally, Hall and Lamont (2009) use population health as a proxy for social well-being. They argue that population health can be seen as an indicator of peoples' capabilities to pursue goals important in their own lives; that health is a relatively uncontroversial measure of well-being; and that it provides measurable outcomes to explain (Hall & Lamont, 2009, p. 2). Unfortunately, few welfare state scholars have followed their lead to study the impact of welfare state arrangements on health and health inequality.

We argue for the integration of welfare state arrangements and public health in social policy research. Social policy scholarship currently underestimates the interdependence of welfare state arrangements and health, thereby downplaying health as an important outcome of healthcare *and* social policies that operates at both an individual and a societal level. We argue for the development of new research on the close links between health and welfare institutions. Here, we believe that insights from social epidemiology could help develop this scholarship.

Social epidemiology research on the welfare state

Social epidemiologists study the relationships between social and structural factors on the one hand and health on the other, referred to in this field as the *Social Determinants of Health* (SDH). The SDH framework, introduced by Whitehead and Dahlgren (1991) and later adopted by the World Health Organization (WHO) Commission on SDH (CSDH, 2008), focuses on the interlinkages between socio-economic factors and health. The framework distinguishes between downstream factors and upstream factors. *Downstream* factors are directly linked to the biochemistry of health, for instance risk behaviours like smoking. *Upstream* factors are only indirectly linked to health

outcomes, such as social policies, culture and societal values or socio-economic status (CSDH, 2008; Marmot, 2005).

The SDH framework shows that upstream factors such as political institutions and societal inequalities are important drivers of health inequalities. Global health inequality is staggeringly high; there is a spread of average life expectancies of 48 years across countries globally and 20 years or more within countries, for instance the USA (Marmot, 2005). Countries display large differences in organization of their healthcare sectors, sanitation infrastructures, and even climate – all of these influence health outcomes. Less straightforward is how high levels of health inequality can persist sub-nationally. In The Hague, for instance, a Dutch city with over half a million citizens, the difference in perceived good health between the citizens living in disadvantaged compared to affluent neighbourhoods is over 12 years (Van Dijk, 2016). Upstream factors help explain this inequality, for instance by attributing eating habits and housing conditions to poverty.

Since the welfare state is a main redistributor of SDH, a wide range of social epidemiology studies has gauged the effect of welfare state arrangements on health outcomes. Such studies are characterized by high levels of analysis, often comparing country-level population health indicators to political and welfare state regimes (Øversveen et al., 2017, p. 108). Most of these studies use a regime approach, such as Esping-Andersen's (1990) typology of social-democratic, corporatist-conservative and liberal welfare states (Bergqvist et al., 2013; Olafsdottir, 2007). Yet, because healthcare is not explicitly integrated in this typology, scholars have been hesitant to fully adapt Esping-Andersen's theory for social epidemiology (Bambra, 2005, 2007; Bergqvist et al., 2013; for an overview, see Beckfield et al., 2013).

Still, scholars have found evidence for a relationship between political and welfare state characteristics, and public health. In a meta-review, for instance, Muntaner et al. (2011) found that left and egalitarian political traditions were positively associated with population health in 9 out of 10 studies testing this relationship. They theorize that left and egalitarian political parties build strong welfare states and implement redistributive policies, which reduces social inequalities, and improves population health (Muntaner et al., 2011; Navarro et al., 2006). The authors also found a positive association between welfare generosity and population health in 19 out of the 31 studies. Here, they expect that Social Democratic regimes have a positive effect on population health through the generous provision of universal welfare policies and labour market decommodification (Muntaner et al., 2011).

Per the SDH framework, we would expect health inequality to reduce as welfare states develop. After all, there is a positive effect of generous welfare states on absolute population health (Bergqvist et al., 2013; Muntaner et al., 2011). However, approximately a third of the welfare generosity studies in the review reported inconclusive or contradictory associations between

particular welfare states and health *inequality* (Muntaner et al., 2011). For instance, socioeconomic inequalities in mortality and morbidity are *not* smaller in countries with relatively universal and generous welfare policies (e.g., the Nordic countries) than in other countries with liberal (e.g., the United Kingdom) or family-based (e.g., Southern Europe) welfare regimes (Eikemo et al., 2008; Mackenbach et al., 1997; Mackenbach et al., 2008). English data on health inequality, moreover, suggest that inequalities in mortality narrowed until 1950, but have since then substantially widened. Counterintuitively, this widening coincided with the construction and expansion of the welfare state, rather than its retrenchment in the 1980s and 1990s (Mackenbach, 2012, p. 762).

According to Mackenbach (2012), two hypotheses might explain ‘the paradox of health inequality’. First, lower socioeconomically positioned groups have become more homogenous and thus also more exclusively composed of individuals with personal characteristics that increase the risks of ill-health in the past half century. Second, highly developed welfare states are further along in their epidemiological development and might have reached a stage in which health improvement depends to a large extent on behavioural change. Further research on the paradoxical relationship between welfare policies and health inequalities is needed to test these hypotheses.

Whereas most social epidemiology research on the relationship between welfare states and health has consisted of large-N, cross-case analyses (Smith & Schrecker, 2015), recent publications have emphasized theory development. The discussion has shifted from the question *if* welfare state institutions have an impact on health inequality to *how* this impact can be theorized. The goal of this research is to identify and explain the causal mechanisms and pathways linking welfare institutions to health inequalities (Beckfield et al., 2013, p. 140). Based on the empirical knowledge available, these mechanisms are complex and non-linear in nature. Social epidemiologists have therefore called for a more methodologically pluralist approach (Eikemo & Øversveen, 2019).

In sum, there are plentiful possibilities to generate important insights from a cross-fertilization of social policy and social epidemiology research. Whereas social policy research sometimes downplays health outcomes, social epidemiology scholarship has made new advances in understanding the influence of several welfare state arrangements on health outcomes. For social policy scholars, it is interesting to engage with the ongoing debate on the paradox of health inequality and to study its different drivers. For social epidemiologists, the institutional knowledge of social policy scholars can be used for theory development and analyse of the causal mechanisms through which welfare states impact health. In the remainder of this paper we will integrate the knowledge from social epidemiology in a popular welfare state framework called the social investment state.

Conceptualizing health in the social investment state

We argue that the social investment framework in particular has potential for the integration of SDH and social policy. Crucial to the social investment approach is the idea that 'social policies should be seen as a productive factor, essential to economic development and to employment growth (Morel et al., 2012, p. 2). Examples of typical social investment policies are early childhood education and care, life-long learning, active labour market policies, and flexible work arrangements. Academically, social investment is an analytical framework for social policy (Nolan, 2013, p. 460). Politically, social investment is a welfare state perspective or strategy developed since the 1990s and promoted by institutions such as the European Union and the Organisation for Economic Co-operation and Development (OECD) (Hemerijck, 2018). Finally, social investment finds its philosophical foundation in the capability approach of Amartya Sen (Sen, 2001; Wolff & De-Shalit, 2007).

We believe the social investment framework is particularly suitable for integrating social policy and SDH scholarship for two reasons. First, a healthy population is a necessary condition in a social investment state. The objective of social investment policies is to keep modern welfare states affordable by maintaining a high employment rate and strong human capital. To reach those goals, you do not only need a large and well-educated workforce, but also a *healthy* one (Diderichsen, 2016). Yet, surprisingly, social investment scholarship has largely focused on active labour market policies and early childhood education and care policies, but not on public health. There are, of course, exceptions. Some social policy scholars have already (1) made a case for considering healthcare as social policy (Schwander, 2019); (2) provided policy entry points to tackle health inequality with social investment policies (Diderichsen, 2016), and (3) integrated research on health in different life-stages to offer a life-course perspective on health (Kvist, 2015). Nevertheless, the rich SDH scholarship has yet to be integrated in the social investment framework.

Second, the social investment framework is part of a broader shift from passive to active social policy that runs parallel to developments in health policies. Instead of protecting against old social risks (e.g., illness, old age), the welfare state has changed to protect citizens against new social risks: transitions between jobs, managing to combine work and care etc. (Bonoli, 2005). Policy has shifted from protecting against income loss towards income loss prevention. Similarly, instead of curing illness with healthcare, much health policy now focuses on preventing illness (public health) from occurring in the first place. Due to rising healthcare costs and renewed political interest in health inequality, European governments are increasingly investing in preventative public health, albeit not necessarily successfully (Baum & Fisher, 2014; Lynch, 2020a).

We can distinguish two perspectives on social investment. In the first perspective, social investment captures the full range of welfare state policies. This perspective is defined and strongly influenced by Hemerijck's definition of social investment as a welfare state paradigm covering both old and new social risks (Hemerijck, 2018). Social investment in this sense indicates a new approach to think about the welfare state across the board – in *stock* policies for creating human capital, in *flow* policies for adapting policies to life-course events, but also *buffer* policies which pertain to social protection. A second perspective adopts a narrower perspective and defines social investment policies as policies that 'aim to create, mobilize, and/or preserve human skills and capabilities' (Häusermann et al., 2022). These authors centre their definition of social investment on new social risks and exclude compensatory policies targeting old social risks. From this perspective, compensatory policies are *not* part of social investment.

We use insights from social epidemiology to offer a health-focused interpretation of the social investment framework, seen from the stock, flow and buffer policy functions. Subscribing to the first perspective on social investment, we relate health and healthcare to welfare state policies across the board. Indeed, public health has a preventative function and could therefore be linked to the second interpretation of social investment in terms of activation without compensation. Nevertheless, we argue that insights from social epidemiology show how 'old' social protection could possibly have a preventative function as well. Therefore, it is important to include not just stock and flow, but also buffer policy functions.

Hemerijck (2017, 2018) adds a fourth component called *institutional complementarity* to emphasize the synergy effect of the three policy functions. We relate the concept of institutional complementarity to a similar concept drawn from social epidemiology literature: *institutional imbrication*. We propose a research agenda for scholars of the social investment state, and social policy scholars more broadly, to relate their research to health issues (see Table 1). We will elaborate on the different elements of this research agenda below.

Stock

The stock policy function is defined by Hemerijck (2017, p. 20) as the creation, enhancement and maintenance of human capital or capabilities, for instance by investing in the education of children who will become the future workforce. In knowledge economies, investing in human capital is deemed necessary to maximize employment and future productivity. Health is a prerequisite to achieve these goals, yet Hemerijck explains the stock function only in relation to education, training and learning during the different life-course phases.

Table 1. Research agenda: health in the social investment state.

Social investment policy function	Future research to integrate health
Stock	• Include lifestyle prevention programmes (children and adults) in analyses • Analyse gender equality and maternal health as investment in children's health
Flow	• Study health as component of life-course transitions • Operationalize health as resource for activity • Relate the fiscal life-course to the health life-course
Buffer	• Study social protection not as old social spending, but as investment in public health
Institutional complementarity	• Study the institutional complementarity of the healthcare sector to the social investment state • Tackle the research question how different welfare state institutions contribute to health inequality in collaboration with social epidemiologists

Nevertheless, we argue, lifestyle prevention should be acknowledged as investment in human capital. Epidemiology research, for instance, shows that lifestyle factors such as diet and exercise are related to cardiovascular disease (Estruch et al., 2018; Ross et al., 2019). Indeed, governments have targeted health behaviour such as smoking, eating high-fat diets, or physical inactivity to prevent life-style related diseases (Baum & Fisher, 2014). In this sense, lifestyle prevention as health promotion is one of the most accepted and successful ways in which social investment in health is already taking place. Social investment scholars should therefore take these lifestyle policy programmes into account, when analysing human capital or work productivity benefits as result of lifestyle improvements.

When discussing the stock function in the social investment state, social investment scholars emphasize investment in children through early childhood education and care policies (Bonoli, 2013; Esping-Andersen, 2002). Preventative investment in arrangements supporting the development of children are repaid, as they become productive adults. In this reading, early childhood education is largely focused on cognitive abilities, but not on health. However, also here research shows a relation between children's health (more specifically the first 1000 days after conception) and cardiovascular disease, diabetes and fertility in adult life (Barker et al., 1989; Hoffman et al., 2019; Roseboom et al., 2006). For this reason, for instance, the Dutch government launched a programme called 'Promising Start' to improve children's health in the first 1000 days after conception (Min. VWS, 2018). Other well-known programmes aim to stimulate healthy diet in school cafeteria, including those advocated by celebrities as Michelle Obama and Jamie Oliver. These types of programmes are not included in social investment analyses.

Moreover, child health is not only determined by nutrition and other medical factors, but also by maternal care. Family environments of young children are major predictors of cognitive and socioemotional abilities, as well as a variety of outcomes such as crime and health (Heckman, 2008). Integrating health into the conceptualization of the stock function not only echoes the emphasis on investing in children of social investment, but also the importance of gender equality. Esping-Andersen (2002) strongly underlined the need for greater gender equality in labour markets and households, because female labour market participation is critical to sustain the welfare state in ageing societies. Moreover, parenting is crucial to child development. Gender equality, maternal health and maternal care should therefore also be studied as policy objectives with the aim of investing in children's health.

Flow

The second social investment policy function is flow, or the activation of full labour market participation over the life-course. Flow means 'making the most effective use and efficient allocation of labour resources over the life-course in support of high employment participation of both genders' (Hemerijck, 2017, p. 20). In the social investment literature, this function is mainly understood in terms of work-life balance, with emphasis given to (re)integrate parents (especially mothers), school-leavers, the unemployed, older workers, and the disabled into the labour market (Hemerijck, 2017, p. 20).

Some research on work-life balance already takes health outcomes into account. Lunau et al. (2014) have found, for instance, that work-life imbalance is associated with poor self-rated health and mental well-being at the European level and that welfare regimes can have an impact. Still, better integration of health in the flow aspect of social investment is necessary, because health is not only an outcome of work-life balance policies. Health can itself have major impact on people's participation on the labour market.

Illness and disease are in themselves important transitions in the life-course. For individuals, health may be the reason they are inactive and need to be reintegrated in the labour market. Research has shown that health and employment are part of a two-way street. Ill-health selects into unemployment (Van Rijn et al., 2014), but unemployment also causes ill (mental) health (Roelfs et al., 2011; Van der Noordt et al., 2014). This is particularly the case for those in precarious jobs and unemployment, especially long-term unemployment (Marmot et al., 2012). In other words, you need to be healthy to work, while having a job over the long run will make you live a longer healthier life.

To make the most effective use of labour resources over the life-course, it is important that people in the prime of their lives do not get stuck in a vicious cycle of economic insecurity, chronic stress and bad health. Stress disrupts

hormonal balances and can lead to obesity, diabetes and coronary hearts disease, sleep deprivation and depression. Moreover, stress impedes the ability of people to manage their lives, plan, prioritize and can lead to impulsive behaviour and lack of self-confidence. One of the main causes of chronic stress is economic insecurity including poverty, joblessness, but also the fear of losing a job and the consequences thereof (Mullainathan & Shafir, 2013; Shern et al., 2016).

One way forward is to relate health to the social consequences of illness and disease. To do so, it is necessary to conceptualize health not as the absence of disease, but as a *resource for activity*. Van der Wel et al. (2012, p. 235), for instance, do so by redefining the term 'sickness' as 'the extent to which ill health is accompanied by joblessness'. They then measure health as a self-reported current economic status, with two categories: (1) unemployed, early retirement/given up business, permanently disabled or/and unfit to work, fulfilling domestic tasks and care responsibilities, other inactivity; and (2) working full/part time, pupil/student, military service (Van der Wel et al., 2011, p. 1610). The authors argue that operationalizing health as activity through the term 'sickness' places health in the social sphere, which influences study outcomes. For instance, welfare states affect sickness in society through eligibility criteria to a different degree than they can affect illness and disease, which are terms defined in the medical sphere (Van der Wel et al., 2012, p. 236).

Another solution is to combine a health life-course perspective with a fiscal life-course perspective. Government spending on the health of the disabled, long-term ill and elderly could turn into an investment, if these groups are able to remain active on the labour market and thus pay taxes instead of receiving social support. In his life-course conceptualization of the social investment state, Kvist (2015, p. 141) mentions the need for preventative measures to stimulate active ageing. Active ageing aims to move the transition from work to retirement to later in people's lives. It seeks to boost active, independent and healthy living, thereby increasing wellbeing while reducing care needs. Pension reforms have already raised retirement ages in countries, but the real social investment is made in earlier stages: early preventive measures can delay the onset of age-related mental and physical disabilities (Marmot et al., 2012). This in turn could improve the health of older individuals and encourage them to continue working (Connolly et al., 2017).

Buffer

The final social investment policy function is the buffer or social protection function aiming 'both at securing income protection and at securing economic stabilization' (Hemerijck, 2017, p. 21). Buffer is the most debated function, as scholars have raised the question whether social investment

provides enough protection against social risks and promotes equality. The fundamental critique is that social investment is no longer aimed at the social goal of equality, but has been reduced to an economic agenda (Morel, 2013). Social investment, like any other welfare state strategy, creates stratification. Social investment arrangements impose the requirement to be an active, responsible and 'able' employee on citizens. Yet, not everyone can live up to this expectation. Social investment can therefore have severe impact on the reinforcement and even growth of social inequalities (De Graaf & Maier, 2017).

We argue that the SDH framework provides the insight that old welfare state spending on social protection could be seen as new social spending in the form of investment in population health (Braveman et al., 2011). The expected return can either be a reduction in healthcare costs for society as whole, or an increase in tax revenues from increased labour-market participation. As mentioned earlier, liberal democracy but also left and egalitarian political traditions are found to have a salutary effect on population health (Muntaner et al., 2011; Navarro et al., 2006). Research has also shown that labour market participation is lower among people reporting longstanding illness and particularly so among low education groups. These non-employment rates are lower in countries with more comprehensive social policies, especially active labour market policies and generosity (Van der Wel et al., 2011). Active labour market policies belong to the flow function, but generosity of social security is related to the buffer function, thereby strengthening the argument that the activation of stock and flow is not enough for a healthy labour force.

Enhancing the buffer function resonates with the critique on social investment that a more balanced strategy of activation and protection is necessary (Pintelon et al., 2013). Health prevention has already been mentioned as part of the stock function of the social investment state, but health prevention is often only focused on lifestyle prevention (Baum & Fisher, 2014). Yet, the SDH literature has shown that lifestyle and health behaviour are only intermediary factors causing health inequality. To seriously reduce health inequality, governments therefore need to tackle structural socioeconomic factors instead (Syme, 2007). Social policy scholars, meanwhile, should consider social protection costs as investment in population health in their analyses.

Institutional complementarity

It is important to note that in Hemerijck's approach to social investment, stock, flow and buffer are complementary. The three social investment policy functions provide the best returns under a policy mix that deliberately aligns all three functions together in varying combinations across the life-course. Hemerijck (2017) shows how quality childcare services, parental

leave schemes, and active labour market policies together enable parents to engage in gainful employment ('flow'). This adds to the revenue bases of social protection ('buffer') and helps children to build up strong human capital start in life ('stock') (Hemerijck, 2017, p. 24).

Institutional complementarities are amplified by integrating health into the stock, flow and buffer policy functions. For example, investing in social protection ('buffer') could give parents a safety net in case of illness or job loss ('flow'), making sure children grow up in a safe and healthy environment ('stock') and grow old without health complications and age actively ('flow'). Ample evidence from social epidemiology research suggests that welfare state arrangements could have synergy effects on the health life-course too. This makes studying the effects of health and the healthcare sector as complementary to other welfare state arrangements in social investment research a valuable endeavour for future research.

As a starting point, Beckfield et al. (2015) have developed an institutional theory of welfare state effects on the distribution of population health, in which they conceptualize the welfare state as an institutional arrangement that distributes health. The authors identify four mechanisms that tie the welfare state to health inequalities through the production and modification of SDH. *Redistribution* shifts SDH like income and wealth from people who have more to people who have less (or vice versa) (p. 6). *Compression* sets a limit on how high or low a resource can go for different population groups. For instance, free access to healthcare lowers rates of the most common illnesses (p. 6). *Mediation* happens when policies that affect institutional arrangements, such as education, indirectly also affect health and its distribution (p. 6). These effects can be reinforcing and cross-cutting. The authors call this *institutional imbrication* (p. 7). Imbrication is very similar to institutional complementarity, but relates to the overall health distribution in society.

The concepts of institutional complementarity and institutional imbrication are a first conceptual step in untangling the institutional mechanisms that connect welfare state institutions to health and vice versa. They help theorize the simultaneous operation of institutions in multiple domains (e.g., social security, labour, education, healthcare, preventative healthcare) and at multiple levels (e.g., macro-level social policies and micro-level health behaviour and health outcomes). Such a theoretical starting point accurately reflects that 'people live more than one policy at a time over the life course' (Beckfield et al., 2015, p. 8). In the conclusion we provide complementing methodological suggestions.

Conclusion

This article has proposed a future research agenda on public health by integrating research on social policy and social epidemiology. First, health should

not only be studied separately as a sector in the welfare state, but as an *integrated* part of the broader welfare state. Second, health *outcomes* should be added as outcome measures of all welfare state arrangements, not only for healthcare policy. Third, health should be viewed as necessary *input* for the effectiveness of active social policies in the social investment state. Finally, complex *mechanisms* between macro-level welfare institutions and micro-level health outcomes should be untangled, considering the complex ways in which different policies intersect and/or overlap. The concepts institutional complementarity and institutional imbrication offer theoretical starting points.

The social investment framework has considerable potential for marrying the different disciplines. By integrating health into the social investment framework, we have shown how the stock, flow and buffer functions could be understood, when including health. The stock function could be extended to include health prevention programmes, especially for children. The flow function could be strengthened with the understanding that health is an essential life-course transition, determining when people potentially exit and re-enter the labour market. The buffer function is crucial in a health perspective on the social investment framework, since social protection in itself is an investment in a healthy population and should thus no longer be understood exclusively as 'old' social spending.

We have also argued that the concepts of institutional complementarity and institutional imbrication are essential for linking the SDH to the social investment state. The theoretical development by Beckfield et al. (2015) signals a research gap in social epidemiology research. New knowledge should be gathered to identify and explain the causal mechanisms linking welfare institutions to health inequalities (Beckfield et al., 2013, p. 140). Social policy scholars can contribute to closing this research gap with their deep knowledge of political institutions and actors and help social epidemiologists explain the institutional mechanisms of health inequality.

The research agenda developed in this paper calls for innovative use of theory, data and methods. We have offered an overview of social epidemiology research and theoretical starting points for this future research endeavour. Exchange of data and knowledge of data sources can be shared amongst social epidemiologists and social policy scholars, for instance, to start answering the question to what extent social protection should be seen as health investment. When integrating the SDH in social investment state scholarship, the interconnectivity and cross-cutting effects of social policies are enlarged. For instance, policy analyses could include lagged health effects or indirect effects of health on labour productivity in society at large. A recent example of this type of interdisciplinary research is the study by Morris et al. (2019) on the gendered effects of certain social investment policies on cardiovascular disease in Europe.

Methodologically, an approach using large-N health epidemiology and smaller-N comparative case studies or policy analyses could be particularly promising. Such an approach helps to better isolate institutional effects in observed health outcomes from a social investment perspective. One example is a study conducted by Whitehead et al. (2000) who use both an empirical analysis of household survey data and policy analysis to explore pathways leading to the health disadvantages of single mothers in England and Sweden. A similar methodological approach could create valuable new insights, if applied to different contexts. Also necessary are more pluralistic methodological approaches to study the complex institutional mechanisms of health inequality like ‘mundane’ methods and institutional ethnography (e.g., Holmes & Hall, 2020; Sinding, 2010).

Finally, a possible silver lining of the Covid-19 pandemic is that it has already stimulated a start of the conversation between social epidemiology and social policy scholars. Most recently, for instance, Bambra et al. (2021) have carefully described the Covid-19 pandemic as a ‘perfect storm’ of a virus intersecting with social inequalities, showing that the virus, in fact, does discriminate. The authors’ analysis moves beyond data on Covid-19 cases to include inequalities in the lockdown, inequalities in the economic crisis as a result of the pandemic, and an analysis of public policy during the crisis. Only analysing the effect of healthcare institutions on health does not suffice: income, education and labour policies *all* have health effects. A broadening and deepening of these knowledge exchanges is necessary to move forward the scholarship on health and the social investment state.

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