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Perspective

Social capital and the social formation of health-related preferences and behaviours

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Abstract: Social capital appears to be an important determinant of health production and health utilization and demand. However, there is limited evidence on the mechanisms underlying this relationship. In this article we draw on the evidence and insights reported in this special issue along with findings from the economic and other social science literature to develop a discussion on the explanations of the likely (behavioural) mechanisms that underpin the connection between social capital and health. An important and under-explored influence mediating the relationship between social capital and health (behaviour) lies in the 'social formation of health preferences and constraints' individuals face in determining their life-styles and in using health care. In particular, we point to the interdependence in how individuals in the first place perceive and also respond to common health risks and the role of cultural transmission and social identity as conveyors of this process. We argue that an emerging body of evidence suggesting that interdependent preferences influence health calls for further re-formulation of traditional demand for and production of health models. Additionally, methodological problems are highlighted and possible ways forward suggested.

1. Introduction

The development of the social capital literature in social science, economics, and other related disciplines provides a new perspective to understanding the social foundation of human actions. Social capital, understood as 'the information, trust and norms of reciprocity inhering in one's social network' (Woolcock, 1998: 153), appears to explain differences in governance (Putnam *et al.*, 1993; Putnam, 2000), efficiency in human capital formation (Coleman,

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1988), the success of development strategies in low income country contexts (Grootaert and van Bastelaer, 2001), and the economic success of migrant groups in the USA (Portes, 1998). Only recently research has focused on the role of social capital as a key variable in understanding health production (Moore *et al.*, 2006; Shortt, 2004; Mladovsky and Mossialos, 2008). Accordingly, the articles in this special issue offer further evidence suggesting that levels of social activity in a group (collective social capital), as well as people's perceptions of being part of a wider community, social networks, and psychosocial trust (individual social capital) influence either health-related behaviour and/or the use of health care. However, as Scheffler (2008) argues, it is apparent that the mechanisms leading to the formation of social capital and how this influences health are still very much in a black box. There is therefore a need to conceptualize the existing evidence further. This short article will discuss how social capital might explain health outcomes and health care use drawing from the economics and social science literature and in particular the studies included in this special issue. Specifically, the discussion focuses on linkages between interdependence in health preferences and the way this might affect health-related behaviour, through social capital. Additionally, methodological problems are highlighted and possible ways forward suggested.

As demonstrated by the set of studies included in this special issue, there appears to be an association between social capital and health, but current knowledge does not permit the full development of a model to explain the causal mechanisms that account for the observed heterogeneity. An attempt to explain this heterogeneity can be found in Laporte *et al.* (2008), where diverging individual and community level effects of social capital on health care utilization are reported. Interestingly the authors suggest that each form of social capital is likely to operate through a different mechanism. On the one hand, individual social capital perhaps serves an enabling role by improving access to health care (e.g. transportation services), while community social capital serves to obviate some physician visits that may involve counselling/caring services most important to seniors. Jusot *et al.* (2008) find an association between psychosocial resources and self-assessed health, mainly by way of sense of control at work, but unfortunately the type of analysis does not allow any conclusions about a specific causal mechanism to be drawn. They concede that their findings could be explained by a 'pessimistic bias' (the same individuals tend to pessimistically assess both their health status and their capacity to muster social resources). Iversen (2008) finds that voting participation in local elections is positively associated with self-assessed health but finds mixed results for religious activity and sports organizations. While the author hypothesizes this may suggest the welfare state diminishes the effect of structural community social capital, as represented by voluntary organizations, on health, the author also concedes the data and statistical methods used in the study can only claim association rather than causality.

Folland (2008) in this issue is concerned more specifically with causal mechanisms and develops a theoretical interpretation of how economic models should conceptualize social capital as determining health production. Importantly, Folland (2008) identifies key behavioural mechanisms to explain how the availability of information, stress reduction effects, and the importance of responsibilities to oneself and others impact on risk attitudes and people's sense of self-control, all these factors standing out as potential causal mechanisms linking social capital and health. Hence, social capital could be argued to affect health through the related concept of self-valuation of life in the health economics literature, whereby the individual serves as a public good to many other people who value him. The existence of these interpersonal bonds provides utility, and the value of health is increased by them, according to Folland. By this logic, he argues, when risk of death stems from behaviour such as smoking, social capital increments provide added incentive to quit the behaviour.

In this commentary, as well as drawing upon evidence from the papers reported in this special issue, we attempt to provide additional insights, links, and explanations of the likely (behavioural) *mechanisms* that underpin the *connection* between social capital and health. We argue that several mechanisms are largely unexplored in the social capital literature and point out that developments in the broader economics and social science literature have already begun to elucidate some approaches that might help explain the health and social capital relationship. In particular, we argue that an important influence mediating the relationship between social capital and health behaviour is the so-called 'social formation of health preferences and constraints', overlooked by Folland and others. Namely, we propose that the association between social capital and health may be caused by interdependence in how individuals in the first place perceive and also respond to common health risks by adopting protective or preventive measures. We go on to argue that this association is itself mediated in part by cultural transmission. Similarly, another form of social creation of preferences lies in the social formation of individual identities that condition individual actions and preferences (Akerlof and Kranton, 1999). This hypothesis is supported, for example, by research suggesting that social interactions might enable individuals to compare themselves with each other and perhaps encourage behaviours that might prevent obesity (Costa-Font and Gil, 2004). Other research has suggested that clear and consistent stigmatization, and in some cases discrimination, can be documented towards obese individuals in the field of employment, education, and health care (Puhl and Brownell, 2001), again a potential source of interdependence of preferences.

Evidence pointing towards the social formation of health preferences, we argue, calls for further re-formulation of conventional tradition of demand and production of health. Classical demand for health theory has advocated the idea that individuals, through their actions – which in turn are determined by exogenously given preferences and time and resource constraints – affect

the stock of health capital (Grossman, 1972). This underlying framework assumes that health status is to a large extent subject to individual control (not counting random shocks and genetic endowments along with the inevitable depreciation through age)[1] rather than influenced by socially structured factors that pose constraints on behaviour (e.g. binge drinking) and influence the utility of certain health behaviours (e.g. social smoking). The so-called traditional approach to health production draws upon an old formulation of neoclassical economics that did not incorporate social interactions in the formation of preferences for health. The critique of classical demand for health theory runs parallel to the social science debate over what Hart (1986) has distinguished as the individualistic and the structural approach. Most individual-level studies examine only individual-level determinants of health, though it is increasingly apparent that there is a need to identify and disentangle structural 'social effects' from pure individual influences. For example, besides the well-known examples of social smoking and alcohol consumption, social science has long demonstrated that whether certain types of food are consumed or not is culturally driven (Caplan, 1997). Another important social effect is that of risk perceptions. There is qualitative evidence to suggest that how people perceive the risks of health-related behaviour along with their preferences for risky prospects is socially formed (Caplan, 2000). A clear example where social context appears to be highly influential is that of mental health, given that mental disorders are largely sensitive to environmental factors. Durkheim's classic study of suicide (Durkheim, 1897) was one of the earliest to highlight the role of ecological and environmental effects (mainly social integration) on mental health. Contemporary studies point towards similar effects. For example, Propper *et al*. (2005) observed a relationship between neighbourhood and levels and changes in mental health in England.

In light of what is known about the structural dimension of health production, in dealing with explaining the mechanisms whereby social capital influences health, it would seem reasonable to take the social creation of health behaviour into account. However, many studies of social capital continue to employ only individualistic demand functions. For example, while Folland (2008) in this issue develops an interesting argument about the social incentives for improved health behaviour, his analysis remains within the conventional individualistic health production model. Hence, our argument here points out further structural linkages that have been largely left unaddressed in the literature on social capital and health and suggests techniques for measuring the effects of these linkages.

1 According to this model, differences in health status across individuals result from personal characteristics and behaviour, which arguably constitutes an intrinsic natural endowment. In this perspective, each individual, or agent, is conceptualized as a decision maker endowed with preferences, forming expectations, and facing constraints

Indeed, critics of social capital theory have argued that despite the desire to incorporate social factors into economic models, methodological individualism still forms the cornerstone of social capital theory. This Fine (2001) defines as 'an understanding of society from the perspective of aggregating over the behaviour of individuals'. Seen this way, social capital theory is portrayed as reductionism of the social to individual rational choice in response to market imperfections. Important concepts in social science that are not normally encapsulated within the tradition of methodological individualism are overlooked. One implication of this has been the conceptualization of social capital as tangibly productive (more social capital being associated with increased productivity), though other indirect effects on variables that can enhance productivity are recognized in the economics literature. This has obscured the potentially negative effects of social capital, discussed in more detail below.

In the next section, we develop the concept of interdependence between individuals in their health preferences and behaviours and its relation to social capital as immediate mechanisms to explain the association between health and social capital. We do so by drawing on the literature on endogenous effects and cultural transmission. The role of identity and the social multiplier effect is also discussed. Finally, we devote a section to a discussion of how this new perspective can potentially affect the main debates in contemporary health policy.

2. Sources of Interdependence in health preferences and behaviour

2.1 Interdependence and social interactions

The idea of interdependent preferences has long been sustained not only in disciplines such as sociology and anthropology (perspectives which are not elaborated in this article) but also from the very beginning in the economic literature initiated by Veblen (1934) and Duesenberry (1949) which pointed towards the role of demonstration effects and conspicuous consumption. However, only a few works (for example Becker (1974)) initially referred to the need for social interactions to be explicitly acknowledged besides interdependency that already takes place in markets. Furthermore, Pollack (1976) introduced the idea of interdependent preferences in consumer behaviour. Other similar economic models are: spatial dependency (Case, 1991); Schelling's (1978) critical mass hypothesis; the bandwagon effect (Leibenstein, 1950); 'conformity' (Bernheim, 1994); and endogenous social effects (Manski, 1993, 2000). Similarly, social learning models suggest that people infer 'truth' from the behaviour of others (Ellison and Fudenberg, 1993). The importance of social context and social dependence has only recently been empirically tested in econometric models using spatial econometrics (Case, 1991; Costa-Font and Moscone, 2008). For example, consumption models find that social influence can take place in the

process of internalization of an effect, its identification, and compliance with a decision already made (Yang and Allenby, 2003).

These and other econometric models and techniques could potentially be drawn upon by social capital researchers to take into account the effect of interdependent preferences and help overcome limitations in social capital research. Here we focus on the work of Manski (1993, 2000) who distinguishes three different effects that could give rise to social influences that transform preferences, expectations, and behaviours. He argued that in observing that members of a group behave similarly we might encounter *correlated effects* due to shared institutional and individual characteristics (which arise due to common constraints on individuals such as a common past experience, exposure to similar risk regulations, the influence of media and information campaigns etc), *contextual or exogenous effects* where behaviour varies with characteristics that derive from outside the reference group (for example varying behaviour being associated with varying levels of income or education within a group) or *endogenous effects* whereby the behaviour of individuals varies with the behaviour or expectations of other members of the group.[2] Endogeneous effects lead to what is coined as the 'social multiplier', where for example a change in an agent's action might affect his/her own health along with that of another through social influence (Glaeser *et al.*, 2003). The argument developed in this article about the importance of interdependent preferences in health is conceptually parallel to Manski's model of endogenous effects.

Manski (1993) argues that the association between the three different effects may lead to an inability to identify the structural parameters of a model seeking to understand the channels through which society affects the individual. This, he points out, has negative implications for policy formulation, since it becomes unclear which effects have resulted in any given observed outcome. Manski (1993) is mainly concerned with modelling endogenous effects and argues that when using individual data one of the problems with the incorporation of endogenous effects into econometric models is the so-called 'reflection problem', whereby aggregate behaviour simultaneously determines and is determined by individual behaviour. Other problems associated with modelling endogenous effects include defining a specific 'group' in which endogenous effects operate and identifying the relevant (possibly psychosocial) influence responsible for the social multiplier. Accordingly, it must be recognized that it is indeed difficult to ensure that all correlation effects are identified, so that correlation between each health input and the individual error terms can be expected to remain.

It is striking that the problems outlined by Manski in seeking to econometrically model the channels through which society affects the individual could also be said

2 Typically one possibility to measure social interaction effects is either by using lagged group effect or alternatively by using other indicators of central tendency besides the mean, such as the median (Manski, 2000).

to broadly affect social capital studies, which have been largely unable to elucidate the causal mechanisms that lead from the formation of social capital to health production and, we argue, have overlooked endogenous effects and the reflection problem. Manski (1993) proposes solutions to the reflection problem. Econometric tests and controls for 'within and between group' analysis, along with instrumental variable approaches and natural or randomized experiments (Case and Katz, 1991) show that the reflection problem can be circumvented by improved quality data, which is becoming increasingly available. This article proposes that social capital studies would also benefit from drawing on and adapting such concepts and econometric techniques to further develop the existing evidence on the relationship between social capital and health. For example, studies of social capital have not fully accounted for social multiplier effects and would benefit from greater interaction with the (albeit limited) literature which explores social multiplier effects and health – see for example Cultler and Glaeser (2006) who find clear evidence of the social multiplier in the impact of smoking bans. More broadly, we argue there is a need for social capital research to take into account the social and cultural formation of health preferences through endogenous effects. Possible avenues for further research are proposed below.

2.2 Cultural transmission in the formation of endogenous effects

This article has argued that not considering interdependent preferences or endogenous effects can significantly bias health production estimates. In reformulating the traditional health production approach and seeking to understand the influence of endogenous effects, we have pointed to the need to identify the relevant (possibly psychosocial) influence responsible for the social multiplier. Inspired by the model of 'cultural transmission' developed by Bisin and Verdier (2000), it can be argued that preferences for health and health care, like preferences for other goods, are influenced by cultural transmission. According to the cultural transmission model, demand for health is partly determined by vertical transmission (intergenerational effects) and partly by horizontal transmission (contemporaneous influences) of health-related preferences. That is, parental and family environment determine individuals' preferences for food, health care use, and acquisition of health information, along with other non-tangible determinants such as optimism and risk aversion through the mechanism of parental altruism. Similarly, the cultural transmission model suggests that the individual's social environment matters in the formation of preferences, including his/her preferences for health, through the mechanism of cultural adaptation and imitation from peers, society, and role models. Accordingly, one might well speculate that these mechanisms explain the association between social capital and health.

There have been some social capital studies which have taken the transmission of norms into account. Taking the example of smoking, the results of a

study showing that the proportion of community social capital attributable to religious groups is inversely and strongly related to the number of cigarettes that smokers consume (Brown *et al.*, 2006) are explained by the authors as being caused by strong non-smoking norms that exist in most religious groups. They argue that these norms would affect both smokers within the groups as well as those who come in contact with the groups. The authors argue that their findings suggest that attention to changing the smoking norms in voluntary organizations may be an effective approach to tobacco control.

Since the study includes individuals aged 18 and over the role of vertical transmission (namely parents' influences on children) is not immediately relevant, but it could be argued that the study is an example of community-level horizontal transmission (i.e., peer and community effects) of health preferences through cultural and social norms that lead to imitation and community enforcement. Further development of the econometric model would be needed to ascertain whether the transmission of smoking norms is indeed the explanatory factor. An additional explanation is that the results might reflect the transmission of beliefs, which are also arguably socially formed. Indeed, Cutler and Glaeser (2006) show that beliefs about the negative health effect of smoking creates 25–50% of the difference between US and Europe smoking patterns, as opposed to price and other socioeconomic and demographic variables. Assuming that beliefs also operate through vertical transmission where learning takes place between generations, an early commencement of anti-smoking information campaigns is likely to be effective.

The cultural transmission approach could also be used to develop further confirmatory empirical evidence to explain the negative effect of social capital, evidenced by a study suggesting that the obesity 'epidemic' in the United States has spread from person to person in a manner reminiscent of viral infections (Christakis and Fowler, 2007), so that interacting with relatively fat people had the effect of making people fatter. This raises a problem with social capital studies related to the nature of the (substitution/complementary) relationship between social capital and other inputs in the health production function as raised by Folland (2008) in this issue. If the relationship is of complementarity, then more social capital would be expected to increase health no matter what. This follows Coleman's view of social capital as 'productive, making possible the achievement of certain ends that in its absence would not be possible' (Coleman, 1988: S98). However, this view overlooks the importance of the transmission of social norms, which might be positive or negative. For example, research into social capital in US immigrant groups revealed that the same attributes of the normative structure (trust, social support, sanctions etc) that made the accumulation of human and economic capital possible in some groups were in other groups unproductive, for example by permitting free-riding on communal resources by less diligent members of the group, deriding efforts to study and work hard, or cutting off sources of information

(Portes and Sensenbrenner, 1993). The conceptualization of social capital as the cultural transmission of social norms therefore puts into question the concept of social capital as solely productive and engenders an alternative view of social capital that seeks to understand how social structures and norms promote or constrain productive behavior.

There may be many other ways to conceptualize the relevant influence responsible for the social multiplier. Interdependent preferences or endogenous effects as concepts could also operate through social identity, where the importance of social formation of health preferences and production lies in the environment and the resulting social identity which affect the constraints, expectations, and/or preferences of other agents in the production of health (Manski, 2000). For example, empirical evidence indicates that negative body image is linked to depression along with low self-esteem, and poor health habits (Goodman and Whitaker, 2002). Accordingly, health-related behaviour might be socially determined in part through the influence of individual's self-image or self-acceptance in each social environment. This implies that the violation of or damage to each individual's desired self-image might lead to anxiety, unease, and ultimately depression through mechanisms such as social norms and prevailing cultural values. Conceptually, the mechanisms of identity could be usefully counterbalanced with various features of social capital such as proximity so that the influence of social interactions on identity can be expected to be larger when (groups of) individuals are socially and territorially closer to each other.

3. Implication for interdisciplinary health policy debates

This article has sought to point out that the role of the social formation of health-related preferences and risk behaviours in determining health outcomes has been overlooked in studies of social capital and health. Arguments for the importance of the social formation of preferences and risk behaviours has waxed and waned in heath policy debates. Early social epidemiological studies on the effect of social networks on health conducted in the USA and Scandinavia the 1960s found a negative correlation between social integration (the number and frequency of social relationships) and mortality, controlling for a variety of variables including health behaviours (House *et al.*, 1988). The results led House *et al.* (1988) to downplay the importance of risk behaviours and to argue that 'social relationships, or the relative lack thereof, constitute a major risk factor for health – rivalling the effects of the well-established risk factors such as cigarette smoking'. The dominant explanation for the findings was not related to the concept of interdependent health preferences, but rather focused on the idea that 'social support' improved health through emotional well-being and self-esteem, help with tangible needs such as errands, help with making choices, and provision of information (Berkman and Glass, 2000).

Since the 1980s, the debate into the social determinants of health has been propelled in a different direction by demonstrating the links between socioeconomic inequality and health. The highly influential Black Report published in England revealed a step-wise socioeconomic gradient in health (Townsend *et al.*, 1988). In the 1990s, social epidemiologists continued to find evidence of the socioeconomic gradient in health (Wilkinson, 1992; Kaplan *et al.*, 1996; Kennedy *et al.*, 1996). In many countries, such findings have supported alternative approaches to health policy which seek to redress structural inequalities in society as a means to improving population health. This has led to calls for institutional reforms that guarantee better access to health information and programs that promote community support in improving access to health care.

Social capital theory has had a considerable influence on the health inequalities debate. Three main theories to explain the socioeconomic gradient responsible for health inequalities have been proposed. The first is the neo-material interpretation where the role of infrastructure and the welfare state is seen as the main causal mechanism (Lynch *et al.*, 2000). The relationship between this and social capital is yet to be fully explored. An important area for future research raised by Inversen (2008) in this issue is the potential crowding in (out) between welfare state and social capital expansion. The welfare state could stand as an explanation for weak social capital effects in countries where health care provision is already generous. The second is the cultural/behavioural explanation supported by evidence of extensive differences between social classes in health-related behavioural risk factors such as smoking (Huisman *et al.*, 2005) and obesity (Costa-Font and Gil, 2006, 2008). Interdependent preferences may play an important role in developing this research. Third is the psychosocial environment interpretation which can be sub-divided into effects which (a) take place in the body through psycho-neuro-endocrine mechanisms (perceptions of low social rank causing chronic stress) and (b) take place in society through reduced social capital. The former psychosocial explanation is supported by the Whitehall study (Marmot and Wilkinson, 1999), which showed that among British civil servants the employment grade in prevalence of the metabolic syndrome (which has been shown to predict diabetes and coronary heart disease) alone was more powerful than the combination of behavioural risk factors, including smoking, physical activity, and alcohol consumption. The latter psychosocial explanation is supported by Kawachi *et al.* (1997) who demonstrated that various measures of 'social trust' were negatively correlated with income inequality and rates of most major causes of death, after adjusting for poverty. Another study found that social capital measured by individual level participation in, for example, political parties and organizations was a strong predictor of socioeconomic differences in leisure-time physical activity, controlling for demographic and other variables (Lindstrom *et al.*, 2001). The results of Jusot *et al.* (2008) in this issue suggest that psychosocial factors may partially explain social inequalities in health in France. However,

as this article as highlighted, it is still unclear through which mechanisms social capital affects health inequalities.

In short, research over the last 20 years has led to evidence that all three causal mechanisms (neo-material, cultural/behavioural, and psychosocial) probably have an effect on the socioeconomic gradient in health and importantly that these causal mechanisms interact with each other. This suggests that policies are needed which address all three factors. One implication of this is that there need not be a stark division between liberal and structural policies, whereby an important step forward would be for the design of incentives for health behaviour. It also suggests a need, as argued in this article, for studies of each causal mechanism to include variables which incorporate the effect of the other two mechanisms. Studies of social capital have not succeeded in this to date, although in many cases limitations in the data make this understandable.

4. Conclusion

We have argued that one way to interpret the evidence that social capital stands behind health production is to take into account the endogenous 'social creation of preferences and constraints' along with other forms of social interaction effects (Manski, 2000). Empirical evidence seems to suggest that social capital has a 'conveyor effect' in the efficiency of health production, influencing demand for health and individuals' perceptions of health risks. However, further empirical evidence is required to test these effects so that social capital effects are correctly differentiated from other correlated effects and unobservable variables. Upon confirmative findings, we might call for a re-conceptualization of evidence explaining health production and demand for health and health care.

The literature on the associated influences and potential channels through which social capital affects health is increasing, but the understanding of its mechanisms is still in its infancy, even though these mechanisms are a fundamental factor in explaining health behaviour, as well as physical and mental health outcomes and the causes of health inequalities. An area that has not received sufficient attention in the literature, which to date has largely focused on pure individualistic models, is the influence of culturally transmitted endogenous effects such as social identity and interdependent preferences for heath-related risk behaviour. We argue that social capital studies have the potential to investigate the type and the intensity of social constraints on individuals' health-related behaviour, as well as follow Manski's (2000) tradition, in studying how people perceive health risks, form expectations of the future, and influence each other through signalling their preference through their actions. Accordingly, rather than being understood in isolation, we argue that rational health behaviour results from solving coordination problems influenced by a

large set of both observable (e.g., education and income) and to date largely unobservable (in econometric models) social constraints (e.g., social norms and identity). This new tradition of economic analysis calling for the incorporation of cultural transmission and social multiplier effects may be able to enhance the utility of social capital theory further by incorporating the influence of factors traditionally conceptualized as 'unobservable' constraints.

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