The benefits of greener and healthier economies

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From material consumption to consumption of nature

It has long been assumed that increased material consumption and rising per capita gross domestic product (GDP) inevitably leads to increased wellbeing. We now know this is not true. The GDP:wellbeing gap has been partly caused by the negative environmental and health externalities of material consumption. Pollution causes harm, costs money to clean up, but appears on the positive side of the balance sheet for economic growth. Over-consumption of food contributes to GDP, but can cause obesity, which in turn costs to treat, again appearing to contribute to measures of GDP.

We have proposed a model to characterise how behaviour affects the choices and behaviours of individuals (Figure 15.1). It is widely assumed that *material consumption* (MC) positively affects wellbeing. However, this same MC produces negative side-effects that influence six factors critical for health and wellbeing (Layard, 2006; Jackson, 2009; NEA, 2011; NEF, 2013, Pretty, 2013: Pretty et al., 2015): i) healthy food; ii) active body; iii) healthy mind; iv) links with community and family; v) contact with nature and green/blue space; and vi) attachment to meaningful possessions. As each of these is negatively affected, either separately or in combination, so natural, social and human capital are eroded, and wellbeing itself declines.

Figure 15.2 proposes a variant whereby *environmentally sustainable consumption* (ESC) substitutes for MC, thus improving wellbeing and stocks of renewable natural, social and human capital assets, and *sustainable behaviours involving non-material consumption* (SBs-NMC) are substituted and sustained. SBs-NMC includes activities in nature (e.g. gardening, angling, walking) and in communities (e.g. volunteering, sports, meetings, community ceremonies and rituals). These are known to have direct benefits for individual wellbeing of both donors and recipients (NEF, 2013).

Thus increases in environmentally sustainable consumption and sustainable behaviours that substitute for material consumption result in behaviours that build capital assets and improve wellbeing, whilst at the same time slowing the convergence of consumption patterns towards high and unsustainable levels that

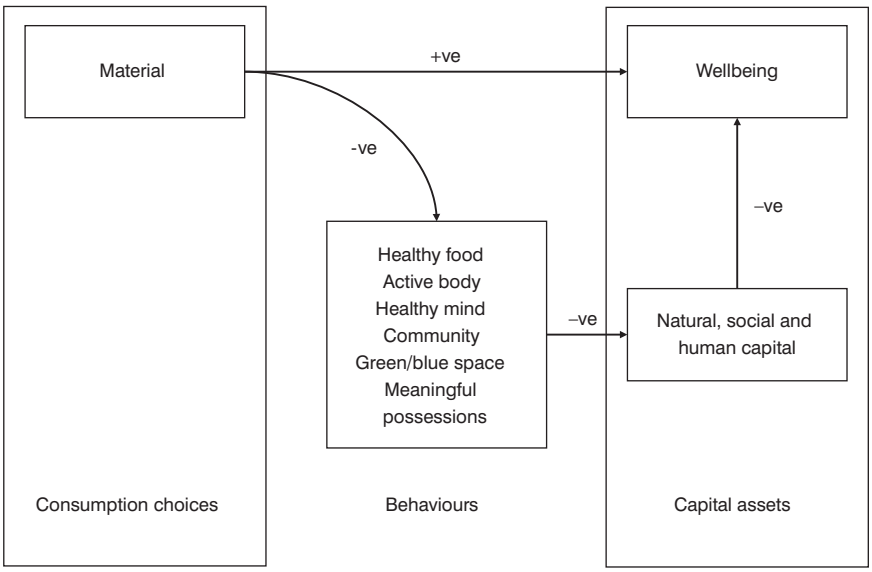

Figure 15.1 The side-effects of material consumption of goods and services and impacts on wellbeing

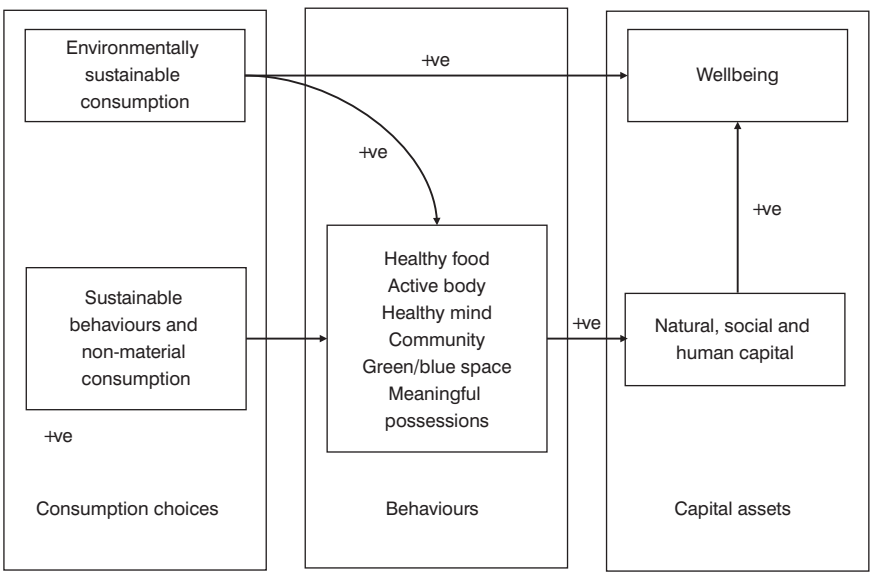

Figure 15.2 The effect of both green material and non-material consumption on wellbeing

threaten the integrity of planetary natural capital (Anderson and Bows, 2011; Pretty, 2013; Costanza et al., 2014). Some negative movements have often been accompanied by positive progress (away from costs and towards benefits). For example, there is evidence in some affluent countries of more social isolation and loneliness brought about by changing family and community structures, yet at the same time the rise in social media has increased online social connections. As the obesity crisis emerged, so has grown an interest in the sustainability of food and agriculture.

Aggregated together, the benefits of material consumption and the counter-trends should have delivered considerable improvements to aggregate wellbeing. Yet, measured as life satisfaction at the population level, they have not. At the global level, the iron cage of arithmetic is stark: increasing convergence by poorer and developing countries on patterns of high material consumption typically prevalent in affluent countries will put further pressure on global natural capital (Pretty, 2013). Substitution of material consumption by both environmentally sustainable consumption and sustainable behaviours is becoming increasingly urgent, implying the need for green technology development and widespread behaviour change, supported by policies, new forms of social organisation and regulations that incentivise rapid uptake.

The evidence for successful interventions is, however, limited: more often than not advances towards environmentally sustainable consumption (e.g. more sustainable agriculture, greater energy efficiency in industrial processes, greater renewable energy production, increased material recycling and reuse, adoption of non-ozone damaging refrigerants) has been overtaken by increases in the number of people consuming and their expanding levels of consumption. In affluent countries, some policies and regulations have shifted individual behaviours towards greater wellbeing, but generally these again have been limited in number (e.g. shift to non-leaded petrol, restrictions on public and private locations where smoking is permitted), or affect only small subsets of the population (e.g. recommendations for physical activity, daily consumption of fruit and vegetables).

Creating economic benefits

The UK Office for National Statistics (2013) is now measuring wellbeing at the national level in the UK; but these measures have not yet changed policy or practice, particularly in health and social care. Mitchell and Popham (2008) concluded that 'environments that promote good health might be crucial in the fight to reduce health inequalities.' There is growing evidence showing that choices and behaviours at the individual level can make significant contributions to wellbeing, regardless of technological and policy progress to support shifts from material consumption to environmentally sustainable consumption. Such activities that result in greater wellbeing, substitute for material consumption, and result in benefits for natural capital and social capital include gardening, walking and running, nature watching and visiting, spiritual contemplation and

social prayer, fishing, organised sports, volunteering, joining societies and clubs, playing music, engaging in art and writing.

This suggests a key dilemma: reducing material consumption to save the planet undermines an economy founded on continuing consumption; yet continuing material consumption at current rates to sustain the economy destroys the planet.

Yet a substantial financial dividend could be released by a greener and healthier economy (Beatley and Newman, 2013) centred on healthy food, regular engagement with nature, regular physical activity, the use of the power of thought and contemplation, the enhancement of social bonds, and increased attachment to possessions and places. Table 15.1 summarises the costs of the health externalities arising from modern lifestyles in the UK. The annual direct cost of mental ill-health, dementias, obesity, physical inactivity, diabetes, loneliness and cardio-vascular disease (including strokes) is £82 billion; the full cost to the whole economy is approximately £250 billion annually (18.6per cent of GDP). The revenue expenditure of the 248 national health system (NHS) Trusts in 2011–2012 was £102 billion.

There are many possible interactions between causes and outcomes. Mental ill-health will have direct costs and consequences; it may also lead to reductions in physical activity, which in turn could influence caloric intake. Loneliness could have an impact on onset of dementias. The individual costs of each of the seven conditions in Table 15.1 thus will include some of the costs for treatment for other conditions. Nonetheless, some costs have been allocated according to the presentation of a condition to the health service (e.g. CVD, diabetes), and these are real costs to the service providers. Others costs, such as of loneliness, are calculated from combinations of drivers. We thus assume a cautious reduction of costs by 25per cent to account for interactive effects and co-morbidities.

This implies there are health savings to be made if prevalence of these conditions and recruitment to medical treatment is reduced or prevented. Upstream activities and behaviours that prevent these negative health externalities improve the wellbeing of individuals and result in reduced costs to both the health service and economy at large. The Chief Medical Officer (CMO, 2013) suggests that the health costs of lifestyles and behaviours comprise a new canon for prevention. With an ageing population, cost inflation, and pressures on revenue, the UK's National Health Service as a system needs to find ways to invest in prevention rather than wait until it has to treat conditions. Table 1 shows that the annual health and social costs per individual, and thus the savings for each avoided condition, vary between £500 and 12,000, though are higher for dementias.

The cost of a single in-patient stay for an obese person is £3215; the average cost per Accident and Emergency presentation is £108; the average cost of a CVD hospital admission £4614 (NHS Reference Costs, 2015). The benefits to the national health system of programmes that prevent recruitment are thus relatively small per person, but aggregated up very quickly at population level, suggesting that investments in healthy lifestyle programmes would bring many benefits. Befriending programmes for the elderly-lonely reduce the annual number

Table 15.1 The costs of the health externalities arising from modern lifestyles in the UK

Condition	*Proportion of population affected*	*Number affected*	*Annual cost to NHS (£billion)*	*Full annual cost to economy (£billion)*	*Annual NHS cost per person with condition (£)*	*Full annual cost per person per condition (£)*
Mental ill-health	17.6 % of adults 10% of children	8.8 million	21.0	105.0	2,390	11,900
Dementias	13% of >65 year olds	0.75 million	20.0	20.0	26,700	nd
Obesity[1]	26% of adults 15% of children	13 million adults 1.9 million children	5.0	20.0	384	1,538
Physical inactivity[2]	20% of adults completely inactive	10 million adults	1.8	8.2	nd	nd
Diabetes (type 2)	4.5% of adults	2.9 million	13.75	29.0	4,741	10,000
Loneliness	30% of >65 year olds	0.9 million	10.0	40.0	768	3,072
Cardio-vascular disease (including hypertension and strokes)		1.84 million in-patient episodes (of which 0.24 million for strokes): 180,000 deaths	10.5 (of which 1.8 for strokes)	22.6	5,437–7,500	11,812
Total (assuming all costs independent and additive)			82.1	244.8		
Total costs (assuming one quarter of costs double-counted)			61.5	183.6		

Notes: 1 Obesity costs are assumed to be the same for adults and children. The annual health costs of obesity in the USA are $147 billion, equivalent to $1429 per treated person (CDC, 2014). 2 The individual costs of physical inactivity are not calculated as most are manifested in other co-morbidities (e.g. obesity, diabetes). Source: Pretty et al. (2015)

of general practitioner visits from 10.8 to 6.7, saving £195 per person; walking for health programmes produce £623 of benefits per person annually; mentally-ill patients accessing CBT and chronic disease management save £2000 per person.

The Chief Medical Officer (2013) estimates that there is a 6–10per cent annual rate of return on investments made in early life interventions. The costs of one year in a children's residential home are £149,000, of one admission to inpatient mental health services £25,000; the long-term costs of child obesity are approximately £600 million, the annual short-term costs of emotional, conduct and hyperkinetic disorders in children some £1.5 billion. Half of all adult mental illness begins before the age of 15, and 75per cent before the age of 18 (Foresight, 2008; CMO, 2013). Mental health problems track into adulthood, just as being overweight and obesity do (Knapp et al., 2011).

In the USA, the Union of Concerned Scientists (2014) has indicated that one-third (750,000 people) of annual fatalities are attributable to cardiovascular disease, causing direct annual medical costs of $273 billion. The average American consumes just 0.8 portions of fruit and 1.6 portions of vegetables daily (USDA ERS, 2013); each additional daily fruit and vegetable portion reduces the risk of stroke and heart disease by 4-5per cent (Dauchet et al., 2006). One additional portion consumed daily would prevent 30,000 deaths; consumption at recommended levels would prevent 127,000 deaths (calculated to have $11 trillion of present value arising from longevity and better lives).

The UK government's public health strategy, *Healthy Lives, Healthy People* (DoH, 2011), explicitly recognises that health considerations are an important part of planning policy. The National Planning Policy Framework (DCLG, 2012) further makes it clear that local planning authorities have a responsibility to promote healthy communities, and a number of local authorities have drawn up supplementary planning documents (SPDs) that seek to limit the number of fast food outlets in close proximity to schools. The challenge is to create a built environment that is 'sociable and green' (O'Donnell et al., 2014). The UK Public Services (Social Value Act) 2012 'requires public authorities to have regard to economic, social and environmental wellbeing'

A greener economy that emphasises ecological public health (Frumkin, 2005; Lang and Rayner, 2012) would be one in which attention is paid to the environmental and social context of the public not yet ill, patients and all professionals and families engaged in treatment and care (Pencheon, 2012; CMO, 2013). The Marmot Review (2008) of health inequalities concluded that "economic growth is not the most important measure of our country's success," and prioritised the accumulation of the positive effects on wellbeing across the whole life course by building social capital, encouraging active travel, use of public transport, availability of green space and healthy eating, and promotion of nature-based interventions for health. Public Health England (2013a, b) has observed that there is a need to find ways 'to walk out of necessity,' not choice. Some structures and policies are being established: the challenge of widespread

adherence to behaviour change remains, as does the wider narrative about the benefits of greener and prosocial economies.

As environmental and social context influences wellbeing and health, positive policies to shape economies and societies for individuals will increase the likelihood that more people will be able to live their lives well and for longer. A greener, healthier economy would prioritise choices for both environmentally sustainable consumption and sustainable behaviours involving green exercise over material consumption, thus resulting in wellbeing benefits for individuals, and co-benefits for nature and finite Earth.