Volume title: Macrosocial Determinants of Population Health

Chapter: Culture

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INTRODUCTION

The 14th Century English philosopher (and heretic), William of Occam, stated in his famous razor that 'entities must not be unnecessarily multiplied'. Roughly translated, this means 'the simplest theory that fits the facts corresponds most closely to reality'. Occam's Razor has a wide application in science. However, when dealing with complex systems like human societies, comprising many entities that often interact in multiple, weak, diffuse and non-linear ways, we may have to 'multiply entities' beyond what seems at first to be necessary.

This is particularly so in exploring the macrosocial determinants of health. An example, which goes to the heart of the subject of this chapter, how culture affects health, is the rise in youth suicide in many Western nations in the second half of the 20th century. It has been one of the most striking adverse health trends in the developed world of recent times; among young males in the United States, Canada, Australia and New Zealand, suicide rates more than tripled. A recent study found that rates of youth suicide were strongly and positively correlated with several different measures of individualism, including personal freedom and control (Eckersley & Dear, 2002).

The simplest explanation for the association is that the greater people's sense of freedom in life the more likely they are to choose death. Indeed, suicide might well be regarded as an ultimate expression of individual freedom of choice and control over one's life. But the study, which included a wide array of cultural and social variables, shows there may be more to the link between youth suicide and individualism. On the face of it, the results indicate that higher youth suicide is associated with not just freer youth, but happier, healthier, and more optimistic youth, so suggesting that suicide rises as social conditions and personal prospects improve.

This possibility, which has also been proposed by other researchers, certainly fits the 'facts' of this research, and has several plausible explanations. However, when we cast the net of evidence much wider, the facts support a very different interpretation. They show that rising suicide represents one end of a spectrum or gradient of distress and suffering that, in less severe forms, affect a much larger proportion of young people and which have also become more prevalent over time. Put another way, suicidal youth are not 'an island of misery in an ocean of happiness', but are, instead, 'the tip of an iceberg of suffering'. In other words, to understand the social determinants of youth suicide, we have to go a fair distance from suicide itself and its social correlates. The facts still fit, but the explanation is very different and no longer so simple.

The social story behind youth suicide illustrates many of the challenges in studying culture as a social determinant of health: the difficulties of defining just what culture is; finding indicators that 'pin down' cultural qualities and allow us to measure them; the often diffuse, pervasive nature of cultural influences; the complex interactions with other social factors. These are some of the issues discussed in this chapter.

The chapter includes: an account of how epidemiology and other disciplines have conceptualized and investigated culture; the case for a greater use of transdisciplinary synthesis to understand better the role of culture in health; a model of how culture affects health, drawing on psychosocial theories of health; some examples to illustrate the very different types of cultural impacts; and a description of the many streams of evidence that implicate culture in health.

The basic premise is that culture, especially the dominant culture of a society, deserves more attention as a macrosocial determinant of population health.

DISCIPLINARY PERSPECTIVES ON CULTURE

Epidemiology: culture as difference

Culture, as used in this chapter, is the way most people understand it and how dictionaries tend to define it: the language and accumulated knowledge, beliefs, practices, assumptions and values that are passed between individuals, groups and generations (Boyden, 2004). However, one of the issues that make the study of culture so fraught with contention and debate is that the word is used differently between, and even within, disciplines. A review undertaken over fifty years ago identified 164 different definitions of culture (Kroeber & Kluckhohn, 1952, cited in Boyden, 2004).

Epidemiology understands 'culture' mainly in terms of 'subcultures' or 'difference', especially ethnic and racial, and so, usually, as one dimension of socio-economic status and inequality, on which research into the social determinants of health has focused (Corin, 1994, 1995; DiGiacomo, 1999; Eckersley, 2001a, 2006a). Culture in the broader sense of the mainstream or defining culture of a society has been given relatively little attention in the recent literature. Generally speaking, the influence of culture (in this broad sense) on health has been seen as distal and diffuse, pervasive but unspecified.

The reasons for epidemiology's 'blind spot' about culture are both epistemological and methodological. Epidemiology, with its origins in medicine and its reliance on statistical methods, tends to treat individuals as units of disease and disability, which are the consequence of various social and personal exposures. As Corin (1994, 1995) has observed, epidemiology's 'categorical' approach to sociocultural factors, which fits comfortably within prevailing scientific paradigms, strips human realities of much of their social context and disregards and dismisses other approaches to social and cultural realities. People do not live in a purely objective world in which objects and events possess an inherent and objective significance; instead, these things are imbued with meanings that vary with individuals, times and societies, and which emerge from a network of associations, she says. There is a complex interaction between the objective and subjective worlds, and between reality, expectations and values. 'Every aspect of reality is seen embedded within webs of meaning that define a certain world view and that cannot be studied or understood apart from this collective frame.'

Glass (2006) articulates well epidemiology's weakness on culture in a commentary on Eckersley (2006a). Modern epidemiology, he says, shares a great deal in common with Newtonian physics, in which objects move through trajectories that are fully determined by their exposure to discrete, linear, invariant and local forces. Similarly, he says 'epidemiology is the search for individual trajectories through fixed and invariant space, in which discrete, isolatable, linear forces (exposures) are necessary and sufficient causes of those trajectories.' Culture, however is profoundly counter-paradigmatic; it has no place in a Newtonian vision of cause and effect. 'With few exceptions… epidemiology has great difficulty incorporating aggregate-level phenomena that exist in larger dimensional space beyond what touches or invades the individual.'

The neglect of culture raises the question of why all societies have developed rich, complex cultures to explain the world and to give meaning to life. It is not that the evidence is missing on the impact on health and wellbeing of qualities such as

materialism, individualism, and religiosity. Rather, the omission reveals a professional orthodoxy, a mindset that filters out concepts and issues that fall outside the dominant paradigms that frame thinking on the social determinants of health, and an intervention-based approach to health, both social and medical.

Other disciplinary views

Anthropology, which claims intellectual dominion over the construct of culture, eschews the broad use of the term employed here. Indeed, anthropologists even debate whether the term has any value at all, a discussion that, to the outsider, illustrates just how dauntingly arcane scholarly argument can become. Writing in the journal, *Cultural Anthropology*, Brightman (1995) notes that culture, the discipline's 'longstanding darling', is increasingly embattled. 'The utility, not to mention the integrity, of the construct of culture – as expounded by Tylor, relativized by Boas, and thereafter refracted through diverse functionalist, ecological, cognitive, transactionalist, structuralist, Marxian, and hermeneutic perspectives – is increasingly being challenged.' Some anthropologists want to reject 'culture' altogether in favour of 'discourse', 'hegemony' or 'habitus'.

Medical anthropologists, if they have not yet abandoned the word, have moved well away from a broad definition of culture in favour of a more restricted use of the term, one which acknowledges just how fuzzy, complex and multifaceted culture is - variably distributed, locally influenced and intimately connected to history, politics and economics (Dressler, 2006; Janes, 2006). They dismiss notions that whole societies (let alone groups of societies) can be characterized by a few dominant themes (such as individualism). Instead, they focus on the details of population patterning and distribution, individual and group differences, and culture as local knowledge and daily life.

These arguments may well be valid, but not to the extent of disallowing broad cultural influences on population health and wellbeing (Eckersley, 2006a, 2006b). We need to study culture at both small and large scales. Faced with the globalizing nature of social, economic, cultural and environmental forces, we must study these forces at a societal, even global, level. We cannot afford to limit our study to the small, local scale. We can draw parallels between cultural changes and environmental or economic changes. The actual and projected impacts of global warming vary dramatically from place to place in terms of changes in temperature, rainfall, and extreme weather events. This does not mean it can only be studied at a local level; indeed, we would never understand the processes if this were done. The same is true of economic globalization: its effects vary from country to country, between urban areas and rural, and among industries, but it involves global forces and must be studied at this level, as well as in more specific, focused ways.

The broader approach to culture is a part of psychology, where differences between individualism and collectivism remain a major research theme. Nevertheless, the validity and value of this distinction as a dominant way of categorizing societies are also being debated in the psychological literature (eg, Oyserman, Coon & Kemmelmeier, 2002). Psychologists also use other ways of characterising cultures and societies, including whether they are simple or complex, loose (tolerant) or tight (strict), vertical (hierarchical) or horizontal (egalitarian); these qualities interact with collectivism and individualism in shaping social qualities (Triandis & Suh, 2002). In sociology, individualization is a dominant theme, a defining feature of modernity and, even more so,

postmodernity (eg, Beck & Beck-Gernsheim, 2002). Sociologists sometimes distinguish between 'individualization' (self-determination, emancipation from traditional restrictions) and 'individualism' (self-centredness, selfishness). However, it is arguable that the first has led to the second, so the distinction, while it may be useful in some contexts, is not essential for the purposes of this chapter. Here, individualization is the process of increasing individualism.

These different disciplinary perspectives on culture point to the potential for a rich cross-fertilization between disciplines in studying culture's effects on health. For example, anthropology, its 'up close and personal' focus notwithstanding, does provide important insights into culture. Its view of culture as a system of meanings, a web or matrix of collective influences that shape people's lives, contrasts with epidemiology's more 'materialist' approach, and is the perspective adopted in this chapter. Also useful is the concept that individuals possess cultural models that derive both from their own biographies and from the collective or shared understandings that form the traditions of their society (Dressler, 2004). These models reflect a 'cultural consensus' about the way the world works, but this consensus is not complete and can be contested, even bitterly so. 'Cultural consonance' is the extent to which individuals reveal in their own beliefs and behavior the cultural consensus (with one focus of research, often conducted on ethnic minorities, being the association between cultural consonance and disease risk).

It follows that, just as other social determinants such as inequality can be studied at both population and individual levels, so too can culture. It can be measured as differences between societies (reflecting differences in cultural consensus), or as differences between individuals and groups within a society (reflecting degrees of cultural consonance). For example, some societies are more materialistic or individualistic than others (even among Western nations), and some individuals and groups within any one society will reveal these qualities more than others. Thus the evidence for cultural impacts on health can be drawn from both individual-level and population-level studies.

Beyond the conceptual, different disciplines can also contribute to the range of measures and indicators of cultural difference and health, and so to empirical studies of the relationships between culture and health. The cultural variables can often be drawn from surveys of attitudes, beliefs and values (eg, Eckersley & Dear, 2002), but can also be based on objective data on, for example, social fragmentation (renting, mobility, unmarried people, single-person households) (eg, Whitley, Gunnell, Dorling & Davey Smith, 1999), or social integration (divorce rates, education, labour-force participation, family relationships, social interaction, religious participation, community involvement) (eg, Fernquist & Cutright, 1998; Duberstein, Conwell, Conner, Eberly, Evinger & Caine, 2004). Both social fragmentation and integration reflect cultural changes, notably increasing individualism (and, like individualism, have been associated with suicide).

To summarize, the study of culture as a determinant of health would benefit from a more systematic examination of the potential of 'mixing disciplines' in research.

Transdisciplinary synthesis
There is growing scientific recognition of the importance of multidisciplinary, interdisciplinary and transdisciplinary research (with each term representing an increasing level of disciplinary fusion) (Rosenfield, 1992, Bammer, 2005). Transdisciplinary research is fundamentally about synthesis. While empirical research

seeks to improve understanding of the world through the creation of new knowledge, synthesis creates new understanding by combining and integrating existing knowledge from across a range of fields, disciplines and sciences (Eckersley, 2005).

Despite its potential, synthesis remains underused in science. Costanza (2003) calls for a dissolving of the barriers between traditional disciplines. A 'consilient transdisciplinary science' will emerge from a 'rebalancing of analysis and synthesis', he writes, a balance that is missing from most current university research and education. Bammer (2005), in setting out the case for establishing a new specialization of integration and implementation sciences, says recent advances in this area are not yet embedded in mainstream academic activity. 'At best, they have led to issue-focused, cross-disciplinary research centers. At worst, individual researchers are isolated at the margins of their departments.'

The value of synthesis goes beyond reviewing, summarizing and multidisciplinary research per se. Transdisciplinary investigation aims to develop new common conceptual frameworks, creating a new level of coherence (Higginbotham, Albrecht & Connor, 2001, cited in Bammer, 2005). There are two general ways for doing this: having an individual synthesize findings from many disciplines to provide a comprehensive explanation of a complex issue, or creating a team whose members work together on this task.

Synthesis raises several important conceptual issues (Eckersley, 2005; Bammer, 2005): it strives for coherence in the overall picture rather than precision in the detail; it dispenses with expectations of scientific certainty and exactness, including with respect to cause and effect - everything is provisional, and relationships are often reciprocal; and it challenges Occam's Razor, as noted at the beginning of the chapter.

As already discussed, disciplines draw on different conceptual frameworks and approaches, which yield different evidence and interpretations. Much remains to be done to integrate and reconcile these perspectives. In doing this, synthesis yields several intellectual and policy benefits: it adds value to existing specialized knowledge; reduces disciplinary biases; transcends (at least potentially) interdisciplinary tensions; improves researchers' knowledge outside their specialization; generates new research questions; is especially useful in examining complex systems; and enhances the application of knowledge. Concerning application, synthesis improves the fit between research and policy; strengthens the links between research and advocacy; is particularly appropriate for addressing the increasing scale, magnitude, complexity and interconnectedness of human problems; and suits the complex, diffuse processes of social change.

In dissolving disciplinary boundaries, synthesis exposes the 'false consensus' that can develop within disciplines, which then defines, and limits, the research questions asked. Examples include, as already noted, epidemiology's focus on socio-economic inequality, and anthropology's on 'small-scale' cultural effects. But such gains are not easily won. The cultures of scientific disciplines are like the cultures of societies: so ingrained that they appear to be the natural and right way to look at the world. For example, in a recent transdisciplinary project on young people's potential and wellbeing (Eckersley, Wierenga & Wyn, 2006), the authors could not agree on key issues, and even had trouble agreeing on how to disagree. Rather than disguising or blunting these differences with careful wording, they have highlighted them as a significant outcome of the project.

Transdisciplinary approaches are especially relevant to the study of culture and health, given interest in culture spans several disciplines.

CULTURE AND HEALTH

A model of cultural influences on health

Accepting and understanding the effects of culture on health has been assisted within the past two decades by the development of psychosocial theories of socio-economic inequalities in health. Researchers may still disagree on whether the sources of health inequalities are primarily, or fundamentally, material - resulting from differences in material exposures and experiences – or psychosocial – stemming from people's position in the social hierarchy and their perceptions of relative disadvantage (Eckersley, 2001a, 2005, 2006a). However, it is now common ground that psychosocial factors are a significant pathway by which inequality and other social determinants affect health, and that perceptions and emotions are important to health outcomes.

Drawing on this work, this chapter argues that cultural factors are linked, via psychosocial pathways, to psychological wellbeing, and that wellbeing is linked, through behavioral and physiological pathways, to physical health.

Psychosocial processes involve interactions between social conditions and individual psychology and behavior, and are associated (in their negative effects) with stress, depression, anxiety, isolation, insecurity, hostility and lack of control over one's life. Psychosocial factors affect health through health-related behaviors and also act via direct effects on the neuroendocrine and immune systems. Once we allow a role in health for psychosocial factors, then culture has to be considered because it has psychosocial consequences.

Psychosocial perspectives on health acknowledge cultural influences, but tend to frame these in terms of inequality. The cultural factors that matter are a consequence of inequality, a part of the psychosocial pathway. Marmot and Wilkinson (2001), for example, in noting the relationship between income inequality and social affiliation, suggest there is a 'culture of inequality' that is more aggressive, less connected, more violent and less trusting. However, we can also think of such processes as going well beyond inequality. A culture of individualism and materialism could also produce these attributes. In other words, developments in thinking about inequality in essentially cultural terms invite a broader consideration of cultural factors as determinants of health. Cultural qualities are a cause of inequality as well as a consequence, and also act on health independently of their effects on social structures.

Culture may help to explain health inequalities within societies in several ways: directly, through cultural differences among individuals and groups; by influencing levels of socio-economic inequality – for example, through the part individualism plays in market-oriented, or neo-liberal, political doctrines that are associated with greater inequality; and by interacting with socio-economic status to moderate or amplify its health effects - for example, materialism and individualism might accentuate the costs of being poor or of low social status by making money more important to social position and weakening social bonds and group identity. However, culture's role is also important in explaining health differences among societies, or changes in a population's health (or, more accurately, health potential) over time. It is this role on which this chapter focuses.

Psychosocial theories of health have drawn on the work of Durkheim, amongst others. Durkheim's notion of social integration provides a tradition within sociological theory for understanding the link between social conditions, including culture, and ill health (Mestrovic, 1985; Mestrovic & Glassner, 1983). Social integration (of which social support is a by-product) involves the interplay between two antagonistic aspects of human existence, the individual and the social. Durkheim believed integration was optimal when the two sides were in balance, and part of this balance required constraining human needs. He saw anomie as a 'malady of infiniteness'; it was a general law of all living things that needs and appetites are normal only on condition of being controlled.

In his seminal sociological study of suicide, Durkheim (1970) emphasized the role of social institutions such as the family and religion in binding individuals to society, in keeping 'a firmer grip' on them and drawing them out of their 'state of moral isolation'. 'Man cannot become attached to higher aims and submit to a rule if he sees nothing above him to which he belongs', he wrote. 'To free him from all social pressure is to abandon him to himself and demoralise him.' Durkheim saw clearly the distinction between material and moral causes of despair. In a comment particularly relevant to modern times, he says: 'If more suicides occur today than formerly, this is not because, to maintain ourselves, we have to make more painful efforts, nor that our legitimate needs are less satisfied, but because we no longer know the limits of legitimate needs nor perceive the direction of our efforts'.

The sociological literature on modernization and individualization elaborates on these consequences of freedom from social regulation and constraint. It is, however, characterized by ambivalence about the gains and losses, by the notion that the freedom people now have is both exhilarating and disturbing, and that with freedom come both new opportunities for personal experience and growth and the anxiety of social dislocation (eg, Bauman, 1995; Elliott, 1996).

This literature can be very complex and subtle, challengingly so to the disciplinary outsider; in comparison, the focus of the literature on the social determinants of health on structural differences and changes in the economy, family, education and labor market seems 'clunky'. Conversely, however, the sociological literature would benefit from a more precise mapping of the health consequences of individualization.

Specific cultural impacts on health: female genital mutilation

Cultures tend to be 'transparent' or 'invisible' to those living within them because they comprise deeply internalised assumptions and beliefs, making their effects hard to discern. As Corin (1994) says, cultural influences are always easier to identify in unfamiliar societies. Our own cultures appear to constitute a natural order that is not itself an object of study. This impression, she says, is an 'unsupported ethnocentric illusion'.

Accordingly, it is worth illustrating cultural impacts on health with an example that comes from 'unfamiliar' cultures (at least to those from European and Asian societies), and so is easily recognized (and also deplored). Furthermore, it concerns a specific cultural practice that has direct physical consequences for individuals and their health, so making the association between culture and health obvious, and amenable to conventional epidemiological study. The practice is female genital mutilation (FGM).

FGM involves partial or total removal of the external female genitalia or other injury to the female genitals for cultural or other non-therapeutic reasons. An estimated 100 million women worldwide have had FGM (WHO study group on FGM and obstetric outcomes, 2006). The practice relates to attenuating women's sexual desire to maintain chastity and virginity prior to marriage, and to encourage fidelity; some societies also appear to consider it more 'aesthetically pleasing' and more 'hygienic'.

It is well known that FGM can affect directly the health of the women who experience it, causing, for example, genital and urinary tract infections. Its obstetric impacts, however, have only recently become the subject of a major study. The WHO study, of almost 30,000 women in six African countries where the practice is common, found that women with FGM were significantly more likely to have adverse obstetric outcomes, with risks increasing with the extent, or severity, of the mutilation.

Births to women who have undergone FGM were significantly more likely to be complicated by caesarean section, postpartum bleeding, longer hospital stays, infant resuscitation, and still births or early neo-natal deaths (the study estimates that FGM leads to an extra one to two perinatal deaths per 100 deliveries). A commentary on the study (Eke & Nkanginieme, 2006) says that genital mutilation status should be included 'among critical health indices for less developed countries', expressing the hope that FGM 'will face the fate of past cultural rituals, such as the rejection of twins, the African slave trade, Chinese foot-binding and Victorian chastity belts'.

The case of FGM illustrates a wider point about culture and health. Health research has emphasized the negative consequences of psychosocial processes. Accordingly, this chapter is also primarily concerned with cultural sources of psychosocial stress, placing them alongside inequality as macrosocial determinants of health. However, cultures can also affect health more directly through the extent to which they promote or discourage healthy and unhealthy practices (in fact, this is their more widely understood and accepted role). Behaviors such as smoking, alcohol and other drug use, sexual promiscuity, and violence (or, in the case of healthy practices, exercise and a healthy diet) vary in prevalence as social norms and values change, as well as in response to psychosocial stresses. In other words, the psychosocial pathways linking culture and health can be both specific and diffuse, direct and indirect.

Diffuse cultural impacts on health: individualism

In marked contrast to FGM, the health impacts of a cultural quality such as individualism are much more complex, and correspondingly more difficult to study. Individualism places the personal at the centre of a framework of values, norms and goals, notably personal freedom and choice; fundamentally, individualism is about believing people are independent of each other.

Psychosocial theories of health emphasize the importance of social support and personal control to health. The psychological and sociological literatures suggest a variety of ways in which individualism reduces not only social support but also, paradoxically, personal control. These effects can be quite specific but, importantly, not necessarily reflected in changes in objective or external structures. However, these specific effects of individualism are not the only ways it affects health and wellbeing. The nature of cultural influences means that they are also very broad, pervasive and diffuse – a profound force that shapes (and is shaped by) many facets of being human, even personality.

For example, the study of youth suicide (Eckersley & Dear, 2002) cited at the beginning of the chapter found that suicide rates were not correlated with divorce rates, but that both suicide and individualism were significantly and negatively correlated with a sense of parental duty (measured as agreement that it is the 'parents' duty to do the best for their children even at the expense of their own wellbeing'). Furthermore, the correlation of suicide with parental duty was much weaker than that with broader measures of individualism (for example, agreement that people have a great deal of freedom of choice and control over their lives), suggesting parental duty is not a major pathway by which individualism impacts on youth suicide. Supporting this more diffuse role of individualism in health, suicide has also been linked, as noted earlier, to a lack of social integration and social fragmentation.

These findings are consistent with the conclusions of a major international review (Rutter & Smith, 1995) of the evidence of rising trends in psychosocial problems such as depression, drug abuse, suicidal behaviour and crime among young people in Western nations in the second half of the 20th century. It concluded that social disadvantage and inequality were unlikely explanations for the increases and called for further investigation of the theory that shifts in moral concepts and values were among the causes - in particular, 'the shift towards individualistic values, the increasing emphasis on self-realisation and fulfilment, and the consequent rise in expectations'.

Historically, individualization has been a mainly progressive force, loosening the chains of religious dogma, class oppression and gender and ethnic discrimination, and so associated with the liberation of human potential. It was supposed to be about freeing people to lead the lives they wanted. However, just as the reality of commitment differs from the ideal, so the reality of freedom differs from its ideal, especially when it is taken too far or is misinterpreted.

The costs of individualism have been described in many ways (Eckersley, 2006a): a heightened sense of risk, uncertainty and insecurity; a lack of clear frames of reference; a rise in personal expectations, coupled with a perception that the onus of success lies with the individual (despite the continuing importance of social disadvantage and privilege); a surfeit or excess of freedom and choice, which is experienced as a threat or tyranny; increased self-esteem (but of a contingent or narcissistic form that requires constant external validation and affirmation); and the confusion of autonomy with independence. As Bauman (2002) notes, there is 'a nasty fly of impotence in the ointment of freedom', an impotence that is all the more upsetting in view of the empowerment that freedom was expected to deliver.

The result is a perception by individuals that they are separate from others and the environment in which they live, and so from the very things that affect their lives. The more narrowly and separately the self is defined, the greater the likelihood that the personal influences and social forces acting on it are experienced as external and alien. The creation of a 'separate self' could be a major dynamic in modern life, impacting on everything from citizenship and social trust, cohesion, and engagement, to the intimacy of friendships and the quality of family life. The more culture focuses on the individual, the more impotent and insecure people seem to feel; and the more diminished they feel as individuals the more precious they become in the face of slights and insults and the more stridently they defend their personal 'rights'.

Thus the issue here is not just a matter of the changed interactions between the individual (as a physical entity) and social structures and institutions, as in the

Newtonian model discussed earlier, but of the way in which the individual self is construed, especially in terms of its relationships to others. In other words, the result is not only increased objective isolation, but also more subjective loneliness. Broadly speaking, it would seem that individualism has produced a self that is socially and historically disconnected, discontented, and insecure; pursuing constant gratification and external affirmation; prone to addiction, obsession and excess.

Thus there is a strong case for believing that increasing individualism is affecting psychosocial factors such as social support and personal control, and so harming psychological wellbeing and physical health. These negative impacts of individualism help to explain why societies do not appear to have reaped the full psychosocial benefits that should have flowed from other cultural changes of recent decades, also linked to individualization, such as increased social tolerance, diversity and pluralism (including greater gender, religious, ethnic and racial equality).

Evidence of cultural determinants of health

Apart from the two specific examples discussed above, there are several streams of evidence, some admittedly indirect and circumstantial, that support the view that culture is an important social determinant of health. As well as illustrating the general concept, this evidence also serve as a summary of a wide-ranging critique of modern Western culture and its defining qualities of materialism (or consumerism) and individualism. Some of these qualities are becoming increasingly global in their influence.

The direct effects of cultural factors on health: Individualism's health impacts, notably suicide, have already been discussed. Another quality of Western culture is materialism (attaching importance or priority to money and possessions). Many studies have shown materialism is associated with lesser satisfaction of human psychological needs and so diminished wellbeing; materialism seems to breed unhappiness, depression, anxiety, anger, isolation and alienation (Eckersley, 2005; Kasser, 2002). People for whom 'extrinsic goals' such as fame, fortune and glamour are a priority in life tend to experience more anxiety and depression and lower overall wellbeing - and to be less trusting and caring in their relationships - than people oriented towards 'intrinsic goals' of close relationships, personal growth and self-understanding, and contributing to the community. In short, the more materialistic people are, the poorer their quality of life

Adverse health trends that are better explained by cultural changes than structural: A UK study (Collishaw, Maughan, Goodman & Pickles, 2004) of comparable surveys conducted in 1974, 1986 and 1999 found the expected gradients in adolescent mental health problems according to socio-economic status and family-structure, but also that the prevalence increased across all social classes and family types. The authors say these uniform effects suggest that specific socio-demographic trends cannot fully explain time trends in adolescent adjustment, and suggest that 'relatively broad societal changes (for example, in the media, youth culture or social cohesion) are affecting adolescent mental health'. US researchers (Luthar, 2003; Luther & Latendresse, 2005) argue that comparative studies of rich and poor youth reveal 'more similarities than differences in their adjustment patterns and socialisation processes'. Their studies indicate that children in rich families, a little researched group, may be more likely than other children to suffer substance use problems, anxiety and

depression. Two possible explanations are given: excessive pressures to achieve and isolation from parents, both physical and emotional.

Trends in personality and other psychological qualities that affect wellbeing and which have been associated with cultural changes: US researchers have analysed psychological tests of children and youth conducted over decades and found marked increases in trait anxiety (or neuroticism), self-esteem and extraversion, while sense of control over life had declined (Twenge, 2006). They say the findings show that broad social trends - not just genes and the family environment, as psychologists have assumed - are important influences on personality development. They link these changes to increasing individualism and declining social connectedness. Anxiety and lack of control are associated with diminished wellbeing; even high self-esteem, once regarded as a source of wellbeing, is now seen as problematic by many psychologists.

Media influences: The media are one of the most distinctive features of modern times: powerful and ubiquitous, employing stunning technologies, dominating people's leisure time (Eckersley, 2005; Myers, 2001). Increasingly, they are defining a cultural frame of reference that extends well beyond the local, immediate and the personal. The images of the world and themselves that people see reflected in the media shape who they are and what they become. Attention has focused mainly on the links between media violence and real violence, evidence for which is now as about as strong as that between smoking and lung cancer. But negative media impacts extend far beyond encouraging aggression; their cultural effects are much more complex and pervasive. These include the promotion of: apocalyptic images of the future; a superficial, materialistic and self-indulgent lifestyle; invidious comparisons with the lives of people who are more powerful, beautiful, successful and exciting; unrealistic expectation of what life should offer; and diminished social cohesion and civic engagement.

The changing nature and role of religion: Religious belief and practice enhance health and wellbeing (Eckersley, in press). The benefits flow from the social support, existential or spiritual meaning, sense of purpose, coherent belief system and moral code that religion provides. All these things can be found in other ways, although perhaps less easily; religions 'package' many of the ingredients of health and wellbeing. However, religion is no panacea. Americans stand out from the people of other developed nations in the strength of their religious belief and observance, an island of religiosity in a sea of secularism. Yet the United States compares poorly on many social indicators, including life expectancy, crime, poverty and inequality. Other cultural factors appear to be countering religion's protective role, perhaps by changing the quality of religious and spiritual experience.

Public perceptions of quality of life: Studies in the United States, Australia and elsewhere over the past decade reveal levels of public anger and anxiety about changes in society that were not apparent thirty years ago. They show cultural factors, including declining moral standards and excessive materialism, consumerism, and individualism, are among the dominant reasons many people feel quality of life is declining (Eckersley, 2005, 2006b). People are concerned about the greed and selfishness they believe drive society today, underlie social ills, and threaten their children's future. They yearn for a better balance in their lives, believing that when it comes to things like individual freedom and material abundance, people don't seem 'to know where to stop' or now have 'too much of a good thing'.

People's views of the future of society and the world: Futures studies across many countries consistently reveal, in people's expected futures, concerns about the pace and pressure of modern life, loss of community, too much consumerism, and destruction of the natural environment (Eckersley, 2005; Hicks, 2006). Their preferred futures (perhaps reflecting humanity's evolutionary and historical origins) emphasize closer-knit communities, more conviviality and intimacy, human-scale settlements and technologies, and a clean, healthy environment.

While people's perceptions of quality of life and the future confirm concerns about the health effect of cultural patterns and trends, these visions of the world are themselves cultural constructs with implications for health (acting via the psychosocial, behavioural and physiological pathways already discussed). Psychological research suggests that adaptability, being able to set goals and progress towards them, having goals that do not conflict, and viewing the world as essentially benevolent and controllable are all associated with wellbeing (Eckersley, 2005). Biomedical research has shown that people become more stressed and more vulnerable to stress-related illness if they feel they have little control over the causes of stress, don't know how long the source of stress will last or how intense it will be, interpret the stress as evidence that circumstances are worsening, and lack social support for the duress the stress causes (Sapolsky, 2005). Negative views of quality of life and the future of the world and humanity are likely to impact on several of these subjective states, most obviously by encouraging perceptions of the world as hostile and dangerous and that conditions are deteriorating.

As the streams of evidence indicate, culture's impacts are most obvious with psychological wellbeing. Cultural influences on physical health are likely to be hard to disentangle from the many other social and personal factors involved, as we have already learned with other distal determinants such as income inequality. These factors include health care: in attempting to measure the health effects of social and cultural determinants, we must take into account the growing role of biomedical advances, which are extending life but, in doing so, may be masking the health effects of the changes in the social conditions in which people live.

Nevertheless, the evidence linking culture to physical health is persuasive. Health authorities now accept that that there is strong and consistent evidence for a causal association between depression, social isolation and lack of social support, and heart disease (Eckersley, 2006a). Mortality among people who are socially isolated is two to five times higher than for those with strong ties to family, friends and community (Berkman & Glass, 2000). Cultural factors, notably consumerism, are also implicated in adverse social trends such as growing obesity, which, in turn, is linked to physical health problems, including heart disease, diabetes and cancer (Eckersley, 2001b).

CONCLUSION

This chapter has argued that the cultures of societies are underestimated determinants of population health, and that cultural factors can act on health through both their specific effects on behavior and their more diffuse influences on ways of thinking and living. It discussed different disciplinary perspectives on culture and why epidemiology has tended to overlook culture as a macrosocial determinant of health, and proposed that transdisciplinary synthesis provides one powerful means to improve our understanding of how culture affects health. Drawing on psychosocial theories of health,

the chapter suggested that cultural factors are linked, via psychosocial pathways, to psychological wellbeing, and wellbeing, through behavioral and physiological pathways, to physical health. It offered two examples of cultural impacts: the direct and specific effect of female genital mutilation; and the much more pervasive and indirect effect of individualism. Finally, it described a range of different types of evidence relating to culture and health.

The complex and subjective nature of the role of mainstream cultural factors in health makes them hard to study. There may be limits to what we can learn about these impacts, especially concerning clear proof of causation. But the research is still useful and worth doing. It helps us to understand the fundamental drivers of population health. The application of this research to improve population health is correspondingly diverse and diffuse. It is probably not primarily through specific public health policies, programs and practices. As with the more tangible matters such as smoking (or female genital mutilation, as we saw), there is probably a role for public education campaigns to inform people about the health effects of various cultural attitudes, values and practices. However, the most important application of research into culture as a determinant of health may be in the contribution it can make to a much broader political and public debate about the lives people want to lead, the societies they want to live in, the futures they want to create. It is a forum in which science cannot claim supreme authority in the search for answers, but one in which it will jostle and mingle with other ways of knowing as people seek to improve their lives.

Science often struggles with those aspects of life that are subtle, intangible, tenuous, abstract, subjective. Yet these aspects make up a big part of the human condition. There is an enormous gap between what science describes and what people experience, between the mechanisms of life and what it is to be alive (Birch, 1999). Understanding population health will only be possible through a proper connection between the objective and subjective, between the outer world and the inner experience.

It may well be that science will never give us clear-cut and objective recipes for making life better. Nevertheless, it is contributing to a growing willingness to question and discuss what, all things considered, makes a good life. This may be a radical view in science, but it is preferable that we obtain imperfect knowledge about the important issues of the times than precise answers to what are, in the overall scheme of things, trivial questions.

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