Thesis

Learning our way into the future public health: a proposition

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ABSTRACT

This article attempts to bridge the gap between the values and skills that currently inform public health and those that we need to confront the future. We draw on a set of radical arguments. Firstly, the ability of modern people to understand, predict and control the natural world has brought many benefits but evidence is accumulating that the methods and mindsets of modernity are subject to diminishing returns and adverse effects. This is manifest in the rise of new epidemics: obesity, addiction-related harm, loss of well-being, rising rates of depression and anxiety and widening inequalities. Secondly, there is little evidence that people are embracing new forms of thinking or practice, despite other threats which have the potential for massive effects on many lives, such as climate change and peak oil. Thirdly, if the problems we face may indicate that 'modernity' is in decline because unsustainable, then profound change is necessary if we are to avoid collapse. This analysis suggests that public health needs a new approach. We set out propositions and models that could help us learn our way into the future.

Keywords an integrative model of health, cultural change, decline of modernity, sustainability, the future public health

Introduction

This article can be understood as an attempt to bridge the gap between the values and skills that currently inform public health and those that we will need to confront the future. We base our case for 'the future public health'[1] on the following radical arguments. With the benefit of hindsight we can identify a number of 'changes of age' in human history, each with a distinctive outer world (social structure, economy, ecology and culture) and inner world (belief system, values, motivations and consciousness).[2] Each change of age was catalysed by resource and population pressures.[3] To cope, our ancestors developed new outer and inner worlds and the modern age has followed this pattern. The ability of modern people to understand, predict and control the natural world has brought undoubted benefits, such as better health, health care and material prosperity. However, evidence is steadily accumulating that the methods and mindsets which were successful in the early period of modernity are subject to diminishing returns and adverse effects.[4,5] One manifestation of this is the rise of new epidemics such as obesity,[6] addiction-related harm,[7] declining

well-being,[8] rising rates of depression and anxiety[9] and widening inequalities.[10] The tools of modernity have proven unsuccessful in tackling such 'diseases'[11]

As yet there is little evidence that many people are responding positively, embracing new forms of thinking or practice. We rather observe denial, resistance and passive forms of adaptation that prop up an existing (and inadequate) system.[12,13] Whilst we might be able to ignore or deny the effects of modern epidemics, other threats have the potential for massive effects on many lives and can neither be ignored nor denied. Climate change,[14,15] peak oil[16] and resource depletion (amongst other problems) provide evidence that there are limits to the modern ideals of unlimited economic growth and conventional forms of

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progress. This does not mean that economic growth cannot continue in the short term, nor that progress cannot continue to be made in many aspects of life. It does imply that our current economic model is not sustainable and that our culture is no longer underpinned by the confidence in ideas of progress and growth that gave it such initial energy.[17]

Modernity is in decline because it is not sustainable. In brief, humanity is facing another change of age but is experiencing 'an ingenuity gap', in the sense of a yawning gulf between problems and our capacity to think up workable solutions.[18] If we are to navigate the turbulent transition our civilization faces, profound change will be needed.[19] A key issue for the public health community is how we can find a way to think and act effectively in potentially overwhelming circumstances. None of us have a set of maps or blueprints for the future, which prompts us to suggest that public health needs a new approach.[11,20] We set out a number of propositions and models that could help us learn our way into the future public health.

Propositions for the future public health

The above arguments underpin our first proposition: we need to change ourselves and our culture, in a manner that makes bridging the ingenuity gap and responding to the challenge of sustainability possible. Our second proposition is that we can only do so by re-integrating dimensions of life that have been effectively separated by modernity itself—the interior and the exterior; the objective and the subjective; the individual and the collective; the good, the true and the beautiful, or science, ethics and aesthetics. Our third proposition is that this reintegration provides us with the basis for a new model for public health and its practitioners. We end the paper by presenting an integrative model of health.

Modernity and differentiation

To understand how we find ourselves in our current predicament it may be helpful to think about modernity and its origins. When Galileo joined a small group of those who argued that the earth moved round the sun and not the other way round, it was not possible to examine the objective truth of planetary movements without simultaneously challenging ideas of morality (man and his world ('Woman' being understood at this time as responsible for humanity's 'fall' from divine grace, and therefore a culpable and inferior being.) as the centrepiece of God's creation, with moral responsibilities) and beauty (the harmony of the geo-centric universe). Galileo was met by opposition because those who objected had never differentiated what is 'true' (science)

from what is 'good' (ethics and morality) and what is 'beautiful' (aesthetics and art).

Part of what made the modern world possible was the ability to examine evidence in order to establish 'truth' without this process threatening morality and aesthetics. In the centuries that followed Galileo, science and its associated technologies brought us multiple benefits. The modern differentiation of the spheres of art, ethics and science allowed each to pursue its own path and values. However, this eventually allowed an imperialistic science to dominate the other spheres by claiming that they possessed no inherent reality of their own—an ideology best described as 'scientism'.

The true, the good and the beautiful

The three categories of the true, the good and the beautiful (or science, ethics and aesthetics) (see Fig. 1) are ancient and derive from Platonic thinking.[21] They also resonate with a contemporary 'integral' model of the four key dimensions of human experience (see Fig. 2).[22] Such thinking remains relatively unknown within public health, yet provides insights that we need and can use.

The idea of the 'true' (i.e. science) corresponds to the right-hand column of Fig. 2, which deals with the objective, exterior dimensions of life. Ideas of the 'good' (ethics, morality) and the 'beautiful' (aesthetics, art, creativity) correspond with the left-hand column, which deals with the subjective, interior dimensions. The point is that, in everyday life, we tend not to differentiate these dimensions of experience: rather we integrate them as a matter of course.

For example, imagine that you are an experienced public health worker with a young family, who has been given the opportunity to work for a charity in sub-Saharan Africa. Before accepting you would try to ensure all aspects of the job (arrangements for accommodation, schooling for your
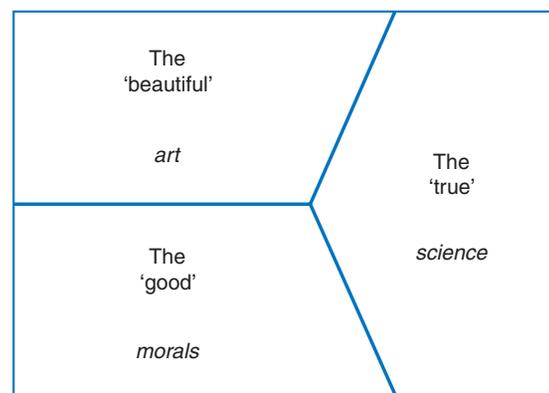

Fig. 1 Plato and the good, the true and the beautiful.

	Subjective, interior	Objective, exterior
Individual level	*I* The inner world	*It* The body, the physical world
Collective level	*We* Culture	*Its* Society

Fig. 2 Wilber's integral model.

Fig. 3 The future public health.

Fig. 4 Six fully integrated components.
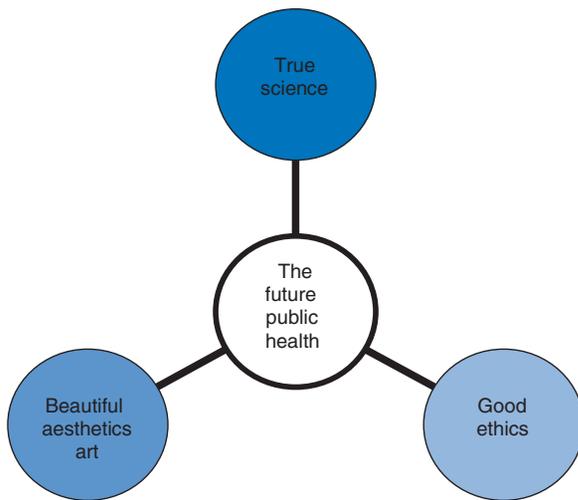
children, their safety and health, a possible role for your partner and much else) are properly investigated. In short, you would objectively assess what is 'true' about the proposed venture. At the same time, you would probably ask yourself questions like 'is this the right priority for us at this time?'; 'are there other more important experiences the children need or would it be good for them to experience another culture and language?', and so on. It is part of human nature to be alert to the issues of what is 'good' and right. You and your family would also be sensitive to the aesthetic and creative dimensions of such plans. You may ask yourselves whether this would be a 'beautiful' experience, in the sense of giving all of you a chance to live more creatively and expand your awareness.

Yet considerations of the 'good' and 'beautiful' rarely occur to us in our daily working lives within modern institutions. These have yielded a great deal over the years in terms of health and social improvements but the narrowness of their cultural values can douse the commitment and
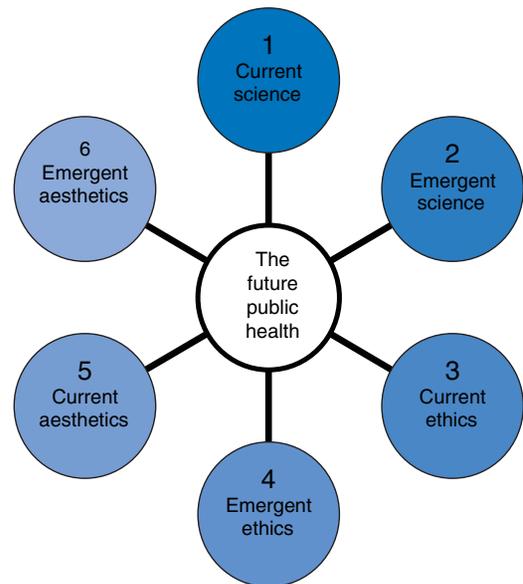
energy of those who join them. So our second proposition is that the future public health needs to integrate the true, the good and the beautiful (see Fig. 3).

The question is how we accomplish this. Our third proposition is that public health will need to expand its repertoire, preserving the best of existing approaches in science, ethics and aesthetics and accepting emergent science, emergent ethics and emergent aesthetics (described further below). This approach to public health would still adhere to the rules of evidence-based practice and good science, with no compromise over scientific integrity. We set out above a six dimensional model (see Fig. 4) that could help us envision and work towards creating the future public health.

Current public health science

Curricula for public health training in the UK incorporate five basic sciences: epidemiology, biostatistics, environmental

science, management science and the behavioural and social sciences. Other fields of knowledge include demography, social policy and health economics. Communicable disease control and environmental health also constitute a significant body of knowledge, while skills like health needs assessment, health impact assessments and health equity audits have become increasingly important. Finally, public health practitioners need the skills to critically appraise and evaluate practice and formulate new research. This is an exacting list, yet the demands of the future public health are such that we will need to retain essential elements of these conventional disciplines and integrate insights from other disciplines/forms of knowledge (rather than pursuing the creation of yet more sub-specialisms—a feature of modernity[23]). In other words, we advocate a turn towards a more holistic public health.

The problem here is current public health sciences are overly reliant on reductionist approaches in seeking to grapple with the 'diseases' of modernity and emerging ecological threats to health. Reductionism has helped us to understand a great deal about the natural world, by separating out strands of information from reality, which is highly complex, and reducing them to the interactions of their parts.[24] There are numerous ways in which reductionism has proved to be an effective tool for creating understanding which, in turn, has led to interventions that improve our lives. Yet a complex system is always more than the sum of its parts and cannot be explained by reducing it to individual constituents; and the social world has an intra-personal dimension, which is missing from the objective world view. Different types of thinking are needed to help explain reality and to help us understand the nature of the health challenges that we face.

Emergent sciences for the future public health

Reductionist viewpoints and holistic viewpoints can be thought of as extreme ends of a spectrum, where each has validity in describing and explaining reality. The second component of our future public health model will use insights and perspectives drawn from the more holistic end of this spectrum. The 'emergent' idea here is that a much wider range of paradigms, methods and mindsets will inform our science as we confront the problems of a change of age. Consider the example of environmental health, which is already beginning to move in a more holistic direction. Its key task has been to determine, assess and measure environmental threats to health which can then be removed; where this proves impossible, populations can be protected by containment

or protection. This approach is typically rigorous, reductionist and none the worse for it. More recently, awareness of the threat of global ecological hazards to human health has seen the emergence of 'ecological' forms of public health. A number of different approaches to this topic can be discerned within our discipline.[25]

Some have applied a very traditional scientific model to particular issues that will arise from a given rise in global temperature.[26,27] Others apply existing public health models of the determinants of heath and modify them for new challenges.[28] Both have value, but suggest that the current repertoire of sciences will be sufficient for the task. A third approach, adopting a more holistic methodology, is beginning to emerge, focused on whole systems (natural and man made) that interact with each other to affect human health.[29,30] All three approaches have merit and the skilled public health practitioner of the future will need to discern which is required in what circumstance. We will need to learn to integrate reductionist and holistic perspectives with other scientific insights that have yet to fully emerge, such as chaos and complexity theories and recent developments in the cognitive sciences.[31] We will need open minds and the capacity to adapt to the (formerly) unconventional.[32]

Current ethics

The roots of medical ethics may be traced to physicians in antiquity (Hippocrates), and early Islamic and Christian teachings. During the enlightenment, medical ethics emerged as a more self-conscious discourse, becoming formalized in the period since World War II into codes of ethics under the umbrella of statements of human rights. Public Health ethics has its roots in the four foundational principles of medical ethics (i.e. autonomy, beneficence, non-maleficence, justice) but has also attempted to create a distinctive set of principles that apply to population health interventions rather than individually applied treatments (for example, the 2007 Nuffield Council Report on Bioethics[33]). Whilst helpful, current ethics fail to address some of the truly difficult ethical questions with which the future public health will have to grapple.

Emergent ethics

The great achievement of current ethics, built on a long tradition, is that it encourages us to place a high value on each human life and has invested each person (irrespective of status or circumstance) with fundamental human rights. When we speak of an emergent ethics it is vital that this does not weaken or dilute the achievements of current

ethics. Nevertheless, current ethics in public health does not adequately address the two major and linked issues of social justice and ecological public health.

Consider, for example, the challenge of 'contraction and convergence'.[34] This is a concept that has been developed in response to global warming and other environmental threats. The idea is that the world needs a contraction in output of carbon dioxide, but for all to buy into such an agreement it must be transparently just: hence the need for convergence. Less developed nations must be allowed to develop, which may mean increased carbon utilization, whilst industrialized and post-industrial nations must make substantial reductions. An ethical framework which ensures global justice and equity while safeguarding the rights of individuals has yet to emerge: this will be a key challenge if the world is not to face runaway climate change and collapse. Yet even an appropriate ethical framework will not prove sufficient, in the absence of a change of mindset and growth in our capacity for empathy.

Our track record on global justice is variable. For example, there have been campaigns and international agreements to cancel debt and reduce the flow of money from the world's poor to the world's rich. Yet in 2006 nearly $500 billion more was transferred from poor to rich countries, than flowed the other way.[35] This is an ethical and moral issue and should be addressed for those reasons. However, because of the dominance of scientism and economism, moral and ethical arguments often hold little sway. Current public health ethics have almost nothing to say about how such examples of social injustice are to be addressed.

The challenge of reducing inequalities needs to be linked to the ethical challenges of over consumption and sustainability.[36] The rich have been successful in resisting appeals for greater equity but the point about problems like climate change is that we will all be affected and will need to participate if a solution is to be found. Unless a new form of ethics emerges that sees the connected nature of all people (indeed, of all life), we will find it hard to achieve transformational change in inequalities. At present, we lack a true ethic of connectedness. A move in this direction implies a very real change in values and mindset. Our understanding of who we are as people and those to whom we relate with care and inclusion has changed in the past and will change again. The challenges are great, but so is our individual and collective capacity to respond. However, changing human consciousness takes us into the territory of the final two components of the future public health model.

Current aesthetics

This part of the model is probably the most unfamiliar to public health. We talk about combining the science and art of public health but seldom define the latter. Since *Homo sapiens* emerged we have been engaged in creating: making tools; painting the walls of caves; crafting personal decorations; and much more, as part of the in-built human impulse to create meaning. Without creativity our work can become commonplace and without meaning. Yet in modern culture even this aspect of our humanity has been commandeered for instrumental purposes and commodified within the consumer marketplace. So, art becomes of value to public health if it is part of regeneration or therapy but not for its own sake or for its capacity to inspire. More broadly, the value placed on art seems to be the price which any artwork can achieve in the marketplace.

Emergent aesthetics

The scale of the challenges facing human health and well-being is clear. The need for transformational change to meet these challenges is equally clear. We need to create new art, stories, myths, symbols and much else to help us make the inner and outer transformations that will be needed. We may also need to reclaim old stories or reinvent old myths for new purposes. 'Emergent' applies here because, while we are sure change is coming, the manner in which we will respond in our individual and collective imaginations will need to emerge from a continuing and dynamic process of discovery and creativity. Activities in this dimension of the model will centre on being fully human: being creative, being playful, developing consciousness, fostering empathy and much else.

Creativity is important because it is part of our nature and, as positive psychology has shown, we are often at our happiest and most fulfilled when lost in the flow and challenge of being creative.[37] It is also from our creative selves that solutions to our most profound problems often arise. Creativity is also important because it balances some of the more intellectual and instrumental modes of being that tend to dominate our working lives.

Discussion

Main findings

The body of evidence and theory reviewed in this paper, in connection with the emergence of a set of complex and interconnected challenges for public health, strongly suggests that public health (and indeed the whole of modern society) faces a gulf between such challenges and the availability of
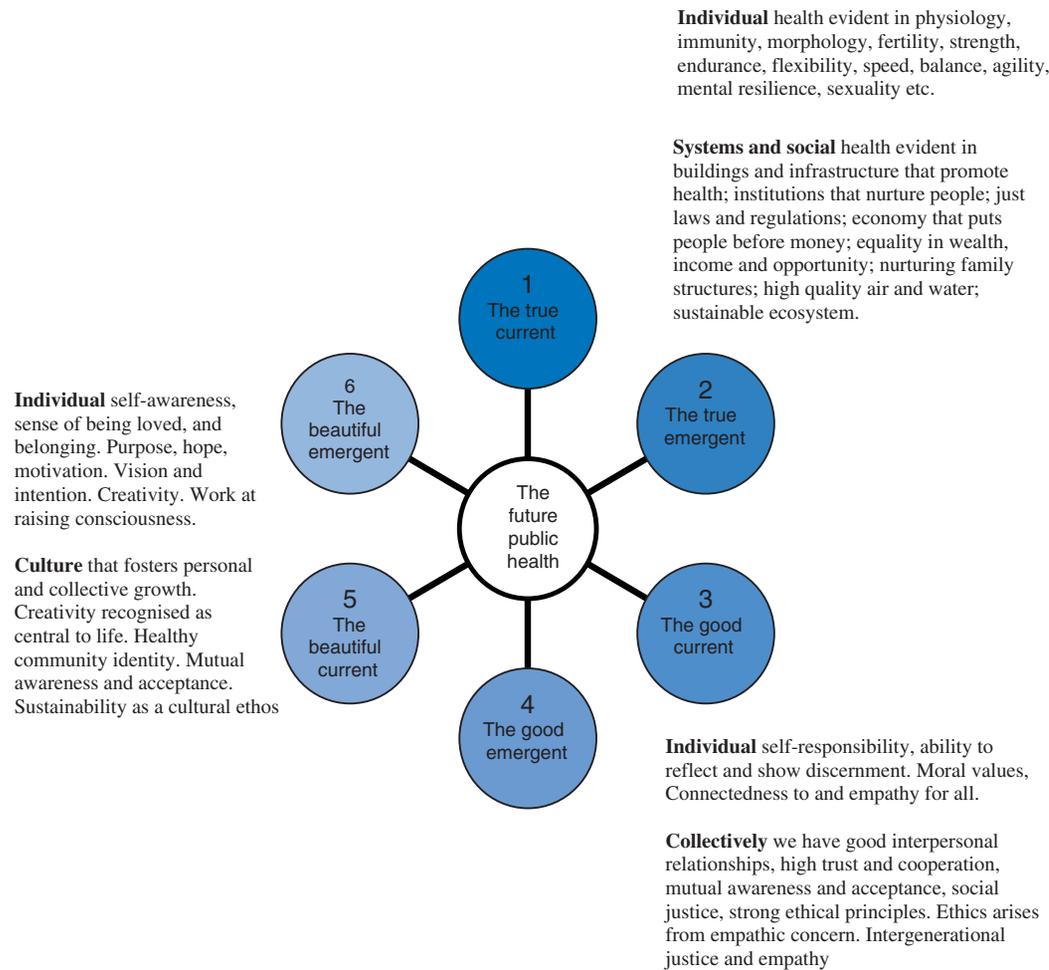
Individual health evident in physiology, immunity, morphology, fertility, strength, endurance, flexibility, speed, balance, agility, mental resilience, sexuality etc.

Systems and social health evident in buildings and infrastructure that promote health; institutions that nurture people; just laws and regulations; economy that puts people before money; equality in wealth, income and opportunity; nurturing family structures; high quality air and water; sustainable ecosystem.

Individual self-awareness, sense of being loved, and belonging. Purpose, hope, motivation. Vision and intention. Creativity. Work at raising consciousness.

Culture that fosters personal and collective growth. Creativity recognised as central to life. Healthy community identity. Mutual awareness and acceptance. Sustainability as a cultural ethos

Individual self-responsibility, ability to reflect and show discernment. Moral values, Connectedness to and empathy for all.

Collectively we have good interpersonal relationships, high trust and cooperation, mutual awareness and acceptance, social justice, strong ethical principles. Ethics arises from empathic concern. Intergenerational justice and empathy

Fig. 5 An integral model of health.

solutions. This paper contends that the public health community needs a new model that will enable us to navigate the transition we face. This model of the future public health is based on the proposition that cultural change and re-integration (of some key aspects of human life effectively differentiated and separated by modernity) are necessary components of a more sustainable and equitable society.

What is already known on this topic

It scarcely needs saying that the public health community is well aware of apparently inexorable rise in new epidemics such as obesity,[6] addiction-related harm,[7] and rising rates of depression and anxiety.[9] The enduring problem of health inequalities has been a focus for public health for many decades now, and has clearly influenced UK government policy.[10] Greater attention to the topic of well-being is also discernible and has provided a focus for a number of international public health conferences in recent years. Concerns about global problems such as climate change and

sustainability are now ubiquitous, and public health has made many significant contributions. Such issues are 'known' in that none of this is new knowledge; the point is that is not often brought together or used as the impetus and prompt for radical future public health development.

Main findings: what this study adds

Given the wealth of existing public health knowledge and experience acknowledged above, our aim has been to synthesise existing and emerging evidence and theory from many relevant fields, in order to make a number of challenging arguments. If, as the evidence suggests, 'modernity' is in decline because unsustainable then the discipline of public health—itself a child of modernity—will need to develop new and unfamiliar forms of thinking and practice, perhaps abandoning some long-held approaches and assumptions in the process. The main emphasis in this paper is on integration because we perceive separation and fragmentation as fundamental to the mindset that has

created some of the most daunting public health problems of the modern world.

Integrative approaches are still relatively unknown within our discipline. The above sections of this paper describe the 'why' of integration. Figure 5 above is a tentative summary of the 'what' that needs to be integrated as we work for the future public health.

This integrative model of health (see Fig. 5) suggests that the future public health will be part of an emerging integrated way of life. Progress needs to be made in all six segments simultaneously and not just in one. However, the model is not intended to suggest that health equals success in all areas: that would be utopian. Nor should the integrative model of health be understood as suggesting that those with major problems (including disease and/or disability) cannot be healthy. Rather, the model posits a summary of activities that will plausibly need to come together, to create the concept of health and well-being required for the successful navigation of a change of age.

Limitations of this study

Inevitably, much has been over-simplified or omitted in our attempt to synthesize evidence and thinking from diverse sources. This paper represents a tentative first step towards the development of the future public health but its authors are aware that they have barely scratched the surface of a deeper set of intellectual and practical concerns. We hope that others will want to engage with, challenge and develop further these initial ideas and proposals. There is, for example, the important question of 'how' our proposals could be transferred into practical application for the future—an important topic in itself but one that cannot be addressed within the current paper.

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