

The importance of scientific research on happiness and its relevance to Higher Education

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There has been much interest in happiness over the last decade fueled by developments in neuroscience and the measurement of happiness. Positive psychology has emerged as a recognised discipline within academia to provide a home for the findings of the new scientific study of happiness. In 2011, positive psychology was the most popular course at Harvard University and in that same year Harvard was ranked as the top university in the world by the UK's Times Higher Education Supplement. There may be no causal connection between these two phenomena but it is clear that taking seriously the scientific research on happiness is not an impediment to institutional success. What is the importance of the new scientific research on happiness and what, if any, is its relevance to Higher Education? This is the question that this paper will explore and attempt to answer.

Keywords: happiness studies, positive psychology, undergraduate education, curriculum design

Introduction

This paper is about the new scientific research on happiness. It explores the importance of this work and how it might impact Higher Education (HE). The main aim of the paper is to assess the relative importance of this happiness research and evaluate its significance for the work of Higher Education (HE).

Why bother with this issue? There are at least three reasons. First, human happiness is arguably the highest goal of human endeavour and that which should guide the actions of individuals, organizations and governments.

That, at least was Bentham's view, and it probably has more adherents today than ever before. It is reflected, for example, in the position of the *Action for Happiness Foundation*:

There are many things in life that matter to us – including health, freedom, autonomy and achievement. But if we ask why they matter we can generally give further answers – for example, that they make people feel better or more able to enjoy their lives. But if we ask why it matters if people feel better, we can give no further answer. It is self-evidently desirable. Our overall happiness – how we feel about our lives – is what matters to us most. (Action for Happiness Website: <http://www.actionforhappiness.org/why-happiness> accessed on 22/10/2012)

Second, there has been an explosion in happiness research in recent decades and as a result we have developed an evidence-based body of knowledge about happiness.

Third, it is possible to make a strong case for the belief that we need an alternative goal to that of maximizing our production of material 'stuff' if we are to avert global environmental catastrophe. Maximising subjective well-being offers an alternative maximand for humankind which need not have the same environmental costs.

It does seem then that there is a *prima facie* case that happiness research is really important and should not be ignored by Higher Education (HE). This paper looks at the reasons for recent and current academic and government interest in happiness research. It explores the argument for the importance of this research. It discusses emergent issues such as the quality of the happiness research and different ways it might impact on HE. Finally, it distils some lessons and conclusions from that discussion.

The two main conclusions of this paper are as follows:

1. The scientific research into happiness is of huge importance both epistemologically and in terms of human development.
2. It impacts on the work of a university in at least the following ways; it impacts on the higher education (HE) that a university provides or should provide, it impacts on the research that it does and it impacts on the contribution of the university to the community and society more widely.

Background

Academic and public interest in human happiness has never been greater. Here are some indicators of that interest:

- Over the last decade there has been an increasing flow of academic articles and research reports on subjective well-being. These can be found particularly in the rapidly expanding field of psychology. New journals have been established to accommodate this work, such as *Positive Psychology* and there is even a *Journal of Happiness Studies*.
- Various charities have been set up to encourage *action* based on these research findings, for example the '*Action for Happiness Foundation*'
- Numerous governments have become interested in the subjective well-being of their citizens. It has been known for decades that conventional measures of economic progress do not tell the whole story about a country's performance or well-being. In 2009, a report by Stiglitz, Sen and Fitoussi raised general consciousness on this issue as it provided reasons why progress in terms of economic, social and environmental sustainability need to be measured and actioned. The Organisation for Economic Co-operation and Development (OECD) described this development as "better statistics for better policies for better lives". Since that time many countries have become more interested in finding better measures of national well-being. In this country we are probably most familiar with such attempts in Europe such as Holland, Austria and Finland and in the old commonwealth countries like Canada, Australia and New Zealand.
- There is an increasing flow of book seeking to popularise research findings on happiness, mostly by professors of psychology or neuroscience.

How can this growing interest in subjective well-being be explained? There are at least three reasons:

1. Early studies of happiness revealed that countries with the highest GDP per head did not have the highest average level of happiness (Schyns, 2003, Layard, 2011). Moreover, it was found that amongst developed countries increasing GDP per head was not associated with a corresponding increase in happiness. (Easterlin,

- 1974 and 2010). This has led to increasing disenchantment with GDP per head as a measure of national well-being (see, for example, Stiglitz, Sen and Fitoussi, 2009).
2. The research on happiness was producing some surprising results such as the finding that old people are happier than people in their middle years (see for example, Sorrell, 2009), most of the happiness of lottery-winners appeared to be transitory (Brickman et al, 1978) and that most people who lose an arm or a leg in an accident fairly soon return to levels of happiness close to that which they enjoyed before they became paraplegics (Brickman et al, 1978).
 3. There has been a significant improvement in our ability to measure happiness and our confidence in the measurement of happiness (Diener and Biswas-Diener, 2009).

This last point is so important that it deserves further consideration. It is difficult to conceive of the scientific study of happiness without confidence in our ability to measure happiness. Unless we can measure happiness, we are not in a position to test hypotheses about happiness or to assess claims to new knowledge about happiness.

There are many ways of measuring happiness. but the key development occurred in neuroscience with the use of electroencephalograms (EEG), positron emission tomography (PET) scans and functional magnetic resonance imaging (fMRI) in the last decades of the 20th century which allowed neuroscientists to explore happiness in terms of brain functioning. For example, in 2001 Knutson, a neuroscientist at Stanford University, used fMRI in an experiment to measure pleasure experienced by different individuals. He attached a brain scanner to participants who watched a screen on which coloured shapes were shown. They were told they would receive a cash reward when particular shapes appeared on the screen but no reward when other shapes appeared. The participants were subsequently asked to rate how they had felt on a 4-point scale. They reported that seeing the ones that gave them a reward made them happy and this was confirmed by their neural firing patterns with the fMRI results showing increased bloodflow to the regions of the brain associated with reward (Knutson et al, 2001). By the same token, medical research often relies on participants' self-report of pain on a 10-point scale (Noble et al, 2005). This is a subjective measure but it can be corroborated, where necessary, by neuroscientific measures. Findings from experiments like these meant that

we now have much greater confidence in the measurement of happiness based on self-report. These studies imply that when people say they are happy (based on introspection) neuroscientific study can confirm this. In other words, the results of introspection aligns with the results of empirical observation using neuroscientific measurement.

A key finding in the measurement of happiness is the high positive correlation between different measures of happiness (Diener and Biswas-Diener). This means that we are able to test the findings of any single measure of happiness by means of the other methods of measurement.

The academic study of happiness was given a huge boost by these developments in the measurement of happiness. Certain free spirits in the academic world, however, had been studying happiness for decades. In the USA one such researcher was Ed Diener of Illinois University (Diener, 2009) and in the UK a good example was Michael Argyle of Oxford University (Argyle, 1986).

Another major development occurred in 1998 when Martin Seligman advanced the cause of the scientific study of happiness as the newly elected President of the prestigious American Psychological Association. Seligman used his presidential address to call for the development of a new branch of psychology which he called 'positive psychology'. He argued that understanding the causes of psychological dysfunction does not take us very far in understanding the causes of optimal human functioning or, as he terms it, 'flourishing'. And an important aspect of flourishing is happiness.

Seligman was an experimental psychologist who had made his name in the 1970s with his research on 'learned helplessness' (Seligman, 1975, Peterson et al. 1993). His first book to be explicitly located within the new field of positive psychology was 'Authentic Happiness', published in 2002. According to this landmark book, there are three elements of authentic happiness and they are 'positive emotions', 'engagement' and 'meaning'. And authentic happiness is an essential ingredient of human flourishing.

Positive psychology has emerged as a major branch of psychology. It is resolutely and self-consciously based on scientific methodology. And it is the branch within which the study of happiness is located.

The importance of happiness research

How important is the new scientific research on happiness? It is possible to make a case that it represents just a passing fad and a fairly trivial addition to knowledge in a superficial, even frivolous, field which is, in any case, tainted with subjectivity. In other words it is relatively unimportant. On the other hand, it is also possible to make the case that it is a major breakthrough in human understanding with implications for improving the human condition and with profound epistemological consequences.

The purpose of this section of the paper is to make the latter case, that the new scientific research on happiness is hugely important for humanity and especially for academics. The argument broadly falls into two parts: (1) the scientific study of happiness is a major breakthrough in our understanding of human well-being, and (2) it is a major breakthrough for science itself. The rest of this section will provide the necessary support for both claims.

Before the scientific study of happiness, our knowledge of happiness was largely based on introspection and received wisdom. The trouble with these ways of knowing is that the introspection of different people did not always produce the same conclusions and received wisdom could also be contradictory. The latter is explored by Jonathan Haidt in his book 'The Happiness Hypothesis: Putting Ancient Wisdom to the Test of Modern Science'. The entry of science into the field of happiness gave us a means to test the insights, deductions and directives from those other ways of knowing.

Second, 'maximising human happiness' occupies a high position on the teleological hierarchy of the human condition. Some people, such as the economist Richard Layard (Layard, 2011), would place it at the very top. Others, like the eminent psychologist Martin Seligman, would place it second only to human 'flourishing' (Seligman, 2011) which is a broader conception of well-being. All knowledge is not equal; a hierarchy of new knowledge based on contribution to human well-being would place happiness in a very high position. Some people would argue that human happiness and human well-being is synonymous and those who would not, would still concede that happiness makes a major contribution to human well-being. It is important to note that 'happiness' is what most people place in first place when asked what they want most out of life (Diener, 2000).

Happiness research is 'special' because it seeks to generate knowledge about what most people want most from life.

Third, the pursuit of happiness is hardwired into us to support our survival and reproductive success. Grinde (2002) calls this 'Darwinian Happiness'. Frederickson (2009) has provided a deeper understanding of the contribution of positive emotions in conferring evolutionary advantage. The pursuit of happiness is part of the story of evolution (Darwin, 1872). It helps to explain why we do what we do. Increasing understanding of happiness can thus help us to understand our human story, how we evolved the way we have evolved and why we behave in the ways we behave.

Fourth, although we are hardwired to *pursue* happiness, we are not hardwired to *find* it (Nettle, 2005). We are, for example, very poor at predicting what will make us happy (Wilson and Gilbert, 2003) and even remembering what makes us happy (Gilbert, 2007). This is why we can't rely on our own subjective experience to tell us all we need to know about finding happiness.

To summarise, knowledge about happiness is knowledge that occupies a high position on the tree of knowledge (i.e. the knowledge hierarchy) and it is knowledge that helps us understand who we are, how we got here, why we do what we do and how we do what we do.

But what of the claim that the scientific study of happiness represents the advance of the advancement of science itself? There are at least three good reasons to support this claim:

First, and most mundanely, the goal of science is the accumulation of empirically-based knowledge and any addition to empirically-based knowledge constitutes an advance of science. The findings of scientific studies of happiness constitute such an advance.

Second, science has traditionally been concerned with establishing relations between physical materials and objects in the natural world rather than the interior world of subjective experience. Indeed, until the 19th century science was termed *natural* philosophy to distinguish it from *moral* philosophy, the philosophy of human experience including ethics, politics, logic and epistemology. Limiting science to the natural world of physical objects, substances and processes was supported by the rise of logical

positivism during the first half of the 20th century (Ayer, 1959). The influence of that philosophy began to decline around the middle of the 20th century and within a couple of decades it was difficult to find any professional philosopher who would admit to being a logical positivist, i.e. it was dead as a credible philosophy.

The fall of that philosophy opened the door to the extension of science's accumulation of knowledge project from objective knowledge alone to include subjective knowledge also. The first major breakthrough came in the field of cognitive psychology, which has been revolutionised by cognitive science. Happiness research provided the next major breakthrough and we now know much more about happiness and its causes than we did two decades ago. These fields have demonstrated that we can learn much about psychological states, processes and subjective experience by means of scientific investigation. This is not simply the extension of science into some new fields within the external world of natural phenomenon. It is the extension of scientific method across the line between the objective and the subjective and it is this line that has often been used to differentiate science from non-science. Put crudely, the new happiness research, together with cognitive psychology, involves scientific method crossing the bridge from 'what's out there' to 'what's in here', from the external world of hard physical objects, materials and processes to the world of subjective experience. In view of this, it will be reasonable in the future to see the modern study of happiness as playing a significant part in the vanguard of a major revision in our understanding of what constitutes the proper subject matter of science.

Third, science is vulnerable to the gibe: 'When science has solved all the problems of *life*, all the problems of *living* will remain. In other words, even if scientists could provide full knowledge of the relations between physical objects, materials and processes in the objective world then the rest of humanity would not be much happier. Early research on happiness provided some support for this criticism of the scientific project; the richest countries of the world have more than doubled their *material* standard of life in the last 50 years but there has been no significant increase in recorded happiness in these countries. The gibe is not, of course, entirely true as getting enough to eat is an important part of 'living' as well as an important part of 'life' and science has made a major contribution to solving that problem. Moreover, happiness does rise with real income in poor countries (even if the gain in real happiness eventually tails off as their real income

risers i.e. as they cease to be poor). However, there is clearly enough truth in the jibe to make scientists uncomfortable about whether their work remains socially valuable in developed countries, i.e. whether it continues to add to human well-being in such countries. Happiness research is concerned with the criteria against which most people would assess solutions to the problems of 'living' i.e. their subjective well-being. If science can contribute to raising the *subjective* well-being of humankind as well as its material wellbeing then scientists, and others who value scientific method, would have cause to rejoice.

Discussion

This section looks more closely at some of the issues that have emerged, explicitly or implicitly, in this paper so far, in particular: (1) Is it good science? (2) The role of subjective knowledge within the scientific project, (3) Happiness research in the context of human development, and (4) Happiness research and HE.

Is it good science?

There is little doubt that, postmodernism notwithstanding, the dominant paradigm across most of academia remains scientific method: most research funders favour this method, most journals favour articles that report empirical findings from studies that have used this method and most academic discourse takes place within this paradigm. Most tellingly, the methodology of those who work within the paradigm of 'normal science' is not subjected to quite the same close scrutiny as those who employ other more recent and more novel methodologies; for the most part scientific method is regarded as a tried and tested approach.

There is therefore a temptation for academics to represent studies in scientific terms and adopt the trappings of science, including its language. This sometimes produces 'pseudoscience', i.e. non-scientific studies masquerading as science. Conceivably, most studies of the subjective experience of happiness are therefore posing as science for the sake of academic respectability, academic funding and to secure opportunities for publication.

This is unlikely for a number of reasons. First, the term 'happiness' brings with it baggage of being 'lightweight' at best, and frivolous at worst, as a topic for scientific study. For this reason, research on happiness is likely to

get closer scrutiny by agencies that fund research and referees that review reports of research projects.

Second, that which is new receives closer scrutiny than that which is familiar and accepted; for this reason, the scientific study of happiness is likely to be at least as closely scrutinised as scientific study within more established fields, such as physics, medicine, chemistry, biology or even economics.

Third, the happiness researchers themselves are aware of the danger that their new area of research could be discredited by evidence of bad scientific practice and they therefore take pains to ensure that it meets high standards of scientific protocol. It is the dogged adherence to scientific method that is the main difference between ‘positive psychology’ and its main antecedent, ‘humanistic psychology’.

For all these reasons 'bad science' is *less* likely to go undetected in the modern research on happiness than in other fields where scientific method is taken more for granted.

The role of subjective knowledge within the scientific project.

When Descartes (1596-1650) wrote "I think therefore I am" he was writing about knowledge of which he was certain and it was knowledge about his self. This was subjective knowledge gained from a subjective source (i.e. introspection). From this certainty, Descartes hoped to build an edifice of certain knowledge. The bridge from knowledge about the self to knowledge about the world beyond the self proved problematic. This was disappointing as it was knowledge about the external world that was sought at that time. The mortal self was seen as more ephemeral than the material world so knowledge about the self was knowledge about a transitory phenomenon – it appeared to add relatively little to the accumulation of a timeless stock of knowledge, which was the goal of the new scientific project of the scientific revolution of the 17th century.

The scientific revolution of the 17th century largely passed the universities by (certainly in the UK). They were, for the most part, teaching institutions and a disproportionate number of their students were destined for employment as clergy in the Anglican Church, so science played a relatively small part in what they taught. The scientific revolution of the

17th century largely passed the universities of the rest of Europe by also (Perkin, 1996).

That changed in the 19th century with the emergence of the Humboldtian university with a commitment to the pursuit of new knowledge which naturally resonated with the accumulation of knowledge project of science.

By the first half of the 20th century, academic subjects were increasingly seeking to reframe themselves in scientific terms. Thus, for example, psychology, originally the study of the personal psyche reframed itself in behavioural terms as an empirical science, economics sought to eliminate any subjective elements such as 'diminishing marginal utility' based on appeal to introspection and replace it with observation-based concepts such as 'revealed preference' based on empirical inspection, and so on.

There were at least three reasons for the increased esteem of science. For most of its history, humankind has been plagued by three curses: starvation, pestilence and slaughter. Science could be seen as making a significant contribution to the alleviation of all of these:

1. Science and technology was seen to be increasing food production and raising material standards of life more generally.
2. Science in the form of medical research was seen to be contributing to the alleviation of the second great scourge, pestilence and disease.
3. Science and technology was also seen as making a major contribution to national defense. In the light of humankind's history of slaughter and oppression (Pinker 2012) this could be viewed as essential to a population's well-being.

Consequently, science was seen as making a major contribution to progress and the improvement of the human condition. Within academia there was an additional, albeit related, reason for the increased esteem of science: science was the recipient of increasingly large funding. This provided a powerful incentive for everyone to join in the quest for 'objective knowledge' about the world.

The relative value placed on scientific knowledge reached its high water mark in the middle of the 20th century at the time of the brief ascendancy of logical positivism. The rise of logical positivism during the first half of the

20th century added a philosophical justification for the enhanced esteem of science. According to logical positivism only knowledge that was empirically verifiable or logically provable was worthy of the name 'knowledge' at all. In the lexicon of logical positivism 'subjective' was a disparaging term, sometimes used to discredit claims to legitimate knowledge. It was a bad time for the pursuit of knowledge about *subjective* experience.

When the philosophical foundations of logical positivism were successfully challenged the tide began to run in the other direction. By the end of the 1970s logical positivism was regarded as so seriously flawed that its main UK proponent, A. J. Ayer said in an interview "I suppose the most important (defect) ... was that nearly all of it was false." (Hanfling, 2003). Nearly all philosophers would agree with the judgment of John Passmore that it is "dead, or as dead as a philosophical movement ever becomes." (Hanfling, 2003).

Nevertheless, its influence outside of philosophy persisted. So much so, that in 1978, the foremost philosopher of science at the time, Karl Popper, felt the need to defend subjective knowledge. He clarified the position of subjectivism in science by means of the concepts of 'world 1' and 'world 2'. World 1 consists of "physical objects: of stones and stars; of plants and animals but also of radiation and other forms of physical energy". World 2 by contrast is "the world of mental and psychological states or processes, or of subjective experiences." According to Popper:

"The reality of the mental world 2 - and with it the reality of human suffering - has been sometimes denied by certain monistic materialists or physicalists, or by certain radical behaviourists ... It will be one of my arguments to defend the reality of world 2."
(Popper, 1978, p. 144)

Since that time, knowledge of "mental or psychological states or processes, or of subjective experiences" has become generally accepted. In fact, the big story of science in recent decades has been the legitimisation of subjective knowledge (i.e. knowledge of "mental and psychological states or processes, or of subjective experiences") as a legitimate part of the domain of science. Nowadays it is only the philosophically naïve or those nostalgic for a time when objectivity was everything who would reject

knowledge of psychological states such as happiness because it is *subjective* knowledge.

Happiness research in the context of human development.

For the large majority of its history and prehistory the number of human beings was controlled by starvation, pestilence and slaughter. These determine the carrying capacity for any species in any environment. (Flannery, 2011).

In the Malthusian version, the focus is on starvation as the key constraint on population growth. When times are good population expands until, at the margin, conditions of subsistence prevail which limits further population growth. This implies that starvation at the margin constrains further population growth and implies that poverty will always be with us. Malthus's insight was an important influence on Darwin's thinking about evolution. Darwin applied the Malthusian process as part of his explanation of the change in species over time and, more fundamentally, the evolution of new species. Malthus, by contrast, was primarily interested in only one species, human beings.

Once the carrying capacity of an environment is reached then random variations in that environment produce corresponding variations in population numbers but, other things being equal, there can be no systematic change in population numbers without systematic change in the environment.

We have, however, witnessed a secular rise in human population numbers across the whole of recorded history. This implies a secular rise in the carrying capacity of the environment for the human species. Nevertheless, for the great majority of human history (and all of human prehistory) the Malthusian constraint held firm; the key factor that limited further population growth was the limited supply of food.

Somewhat ironically, however, at about the time that Malthus identified the process at work it was starting to break down for the one species on which it was focused. The human species was starting a period when, in country after country, the rate of increase in food availability would begin to outstrip the rate of increase of population. Humankind had already started to climb out of the Malthusian trap.

Two things need to be explained in this story. First, how did human beings sustain a secular rise in carrying capacity for the whole of human history? Second, how did humankind escape the Malthusian trap?

It turns out that the answer to these two questions are closely related. There was no benign improvement in the environment in those parts of the globe inhabited by human beings sustained over this period that could provide an explanation. Therefore, in order to sustain a secular rise in population across the whole of recorded history, human beings needed to secure a secular rise in food production across the whole of recorded history. That must mean that human beings learned to extract more food from the relatively stable environment over this long period. The key word in this sentence is 'learned'. This is what made the human experience of human beings different from that of other organisms. Discovery of new methods of extracting food from the environment and dissemination of those discoveries gradually raised food production across human history. But the rate of increase in food production was always smaller than potential population growth. This is why the Malthusian world persisted, with poverty and starvation at the margins of each human group limiting further growth in human numbers (Clark, 2008).

How did humankind escape the Malthusian trap? The solution to this second question also depends on learning, *shared* learning. And it was the growth in shared learning that was the difference that made the difference. If the rate at which humans could learn to increase food availability from the environment could accelerate fast enough then eventually it would exceed the rate of population growth.

In 17th there were a number of factors that increased the rate of shared learning in Europe:

- The effects of connecting up different parts of the globe following the voyages of discoveries of the previous two centuries
- The fruits of the Renaissance of the 15th and 16th centuries that gave access to learning from the Ancient World.
- Increased availability of books and other printed matter
- Rising levels of literacy and education
- Improved transportation that enabled much better communication
- The scientific revolution with its explicit project of the accumulation of knowledge.

Arguably, if it had not been for the last of these factors, the accumulation of knowledge, then the gains from this rise in shared learning would have been absorbed by an increase in the world population and Malthusian equilibrium would have been restored, albeit at a higher level of world population. The scientific revolution supported the acceleration in the accumulation of knowledge and ensured that it would continue unabated. And this in turn supported continuing secular growth in shared learning.

If the rate of shared learning continued to accelerate then at some point it was going to exceed the rate of population growth. In much of Europe and North America this occurred during the 19th century and in most of the rest of the world it occurred in the 20th century. By the start of the 21st century the large majority of the countries of the world had escaped the Malthusian trap. Moreover, human beings are increasingly failing to do the bidding of their genes to 'go forth and multiply'. Three examples should suffice to support the correctness of that statement:

- During the twentieth century it was observed that in country after country the birth rate started to fall below the population replacement level. By the start of the 21st century the birth rate was below the replacement level in about 4 out of 10 countries of the world.

"Some 40% of the world's countries already have birthrates below replacement level (which is 2.1 children per woman), and in every country the trend continues to be downward.... The overall world birthrate in 2009 was about 2.55 children per woman, and dropping". (Stewart Brand, author of the Whole Earth Discipline Book at <http://longbets.org/510/> - adjudication_terms, accessed at 18/07/2012)

By 2009, the birth-rate per women was as low as 1.1 children in Russia and 1.3 in Italy. Other countries in the same 'very low' category include Spain, Brazil, Germany, South Korea, Japan and all of Eastern Europe. There seemed, moreover, to be a clear relationship between economic development and declining birth rate.

- By the end of the twentieth century the United Nations had started to predict that World Population, i.e. the population of the human species, would actually be falling by the year 2050. Those predictions have become firmer as the years have passed.
- Humankind has started to engage in 'genetic engineering', which indicates how much the balance of power within the human species has shifted from genes to their human 'gene-machines'.
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The growth in shared learning extended, of course, much beyond learning about how to extract more food from a given environment. Consequently, human efficiency and effectiveness rose across a very wide range of human endeavours in addition to food production. It also helped hugely, of course, that some of that shared learning included learning about methods of contraception, control of fertility and family size. It is the acceleration in the accumulation of knowledge from the 17th century that underpinned the growth in shared learning that allowed humans to escape the Malthusian trap.

It was entirely reasonable at the time of the scientific revolution of the 17th century to give priority to the accumulation of knowledge to support the increasing material resources of humankind. That was what was most necessary at that time to spring the Malthusian trap. But we now know that increasing material resources, crudely measured by real income per head, leads eventually to diminishing gains in human subjective well-being. If our goal is enhanced well-being of humankind then increasing real income becomes an increasingly ineffective way of realizing that goal. As we reach the point in human development when getting more material 'stuff' makes a diminishing contribution to human subjective well-being then it is appropriate that science should be paying increasing attention to raising human well-being more directly.

The proximate goal of science is the enlargement of the pool of human knowledge. But why? The goal of enlarging the pool of human knowledge is to increase human well-being. There was a time when this could have been done by learning how to get more material stuff from our environment. However, as humankind acquires more material stuff its contribution human well-being falls. The more that it falls the stronger is the case for looking for

another more direct way of contributing to human well-being, including research on subjective well-being.

We are approaching that point in human development when getting more material stuff has made its full contribution to human well-being. In other words, that part of the job of science is nearly complete. This does not mean that the social role of science is at an end because it does not exhaust the contribution of science to human well-being. Science contributes to human well-being in other ways, including researching sources of human subjective well-being and ways of realising them.

The relevance of scientific research on happiness to Higher Education.

The research on happiness is relevant to a university for at least the following reasons:

1. *It is relevant to the purpose of higher education.* The main point of HE is to prepare students for their lives as graduates after university. That includes, of course preparing students for *work* after graduation but this is only a proximate and instrumental goal; the reason for preparing them for work is to help them to realise lives that are happy and fulfilling. The findings of happiness research can contribute directly to preparing students for richer, happier lives after university.

Preparing students for life, including work, after university is an *investment*. But there is also a *consumption* aspect to acquiring a university education; students can reasonably expect to enjoy the experience as well. The findings of modern research on happiness can contribute in this respect too. This is likely to be an increasingly significant factor now that students are paying £9K per annum for their undergraduate education. In 2011, 'positive psychology' was the most popular course at Harvard University and in that same year Harvard was ranked as the top university in the world by the UK's *Times Higher Education Supplement*. Positive psychology has emerged as a recognised discipline within academia to provide a home for the findings of the new scientific study of happiness. Perhaps other institutions of HE can learn from the experience of Harvard in this respect (Max, 2007).

If we seek a university education that supports the well-being of our students it would make no sense to ignore the knowledge that is accumulating on human well-being, fulfillment and what constitutes a good life.

2. *Graduate employees who are happier make a larger contribution to the material wellbeing of society.* This follows from the evidence that happier workplaces are more productive workplaces and happier employees are more productive employees (Diener and Biswas-Diener, 2008).
3. *It is relevant to a university as an institution.* Happy students are more satisfied students and are more likely to record higher scores in the Student Satisfaction Survey, which is a significant performance indicator. This directly affects the national standing of an institution. And this, in turn, affects student recruitment and funding of a University.
4. *It is relevant to the other two main functions of a fully-functioning university.* A *fully-functioning* university has three goals; the higher education of its students, the advancement of knowledge and contributing to the well-being of the society in which it is located (Bourner, 2008). This is sometimes known as the 'tripartite mission' of the university. We have seen that the new research on happiness is relevant to the first of these goals i.e. the higher education of its students. And we have alluded to its relevance to the second one, the advancement of knowledge, in terms of the growing programme of research on happiness of work. Actually, the issue is wider than this as the accumulation of subjective knowledge is the new frontier in the science's accumulation of knowledge project and a university that fails to recognize this runs the risk of being left behind. It is perhaps not surprising, therefore, that the university has come top of the league table of universities has put considerable resources into the development of positive psychology. Finally, it is also evident that research on happiness has a significant contribution to make to the third goal, contributing to the well-being of the society in which it is located, if only because 'happiness' is what most people respond when asked what they want out of life.

5. *It is relevant to the macroeconomy, sustainability and the lives of the children and the children of the children of the staff and students of universities.* As the globalised economy has an increasingly negative effect on the environment, economists, and governments will need to change the way that economic success is measured. For example, if workers in China are going to strive for parity with American and European workers, that parity cannot be in terms of a car, a house and a weekly supermarket run. In the West, the need to reduce borrowing means many workers are reconciling themselves to a post-inflation economy with wages stagnant. The measure of happiness as an alternative index of a successful economy, is already mainstream enough to be part of attempts by governments worldwide to find a better measure of human success (Allin and Hand, forthcoming).

From the perspective of sustainability, countries, companies and individuals need ways to measure success that are not primarily about more stuff. GNP, profit margins and wealth accumulation or purchasing powers are still seen as indices of success, to the point that the solutions to the current Euro crisis are discussed largely in terms of how to restore growth. Whether it is possible (or desirable) to get growth back into the Eurozone, it cannot be the way that China and Africa achieve parity

According to a leading British scientist Sir John Sulston in a Royal Society report in April 2012:

"The world now has a very clear choice. ... We can choose to rebalance the use of resources to a more egalitarian pattern of consumption, to reframe our economic values to truly reflect what our consumption means for our planet and to help individuals around the world to make informed and free reproductive choices... (or) we can choose to do nothing — and to drift into a downward vortex of economic, socio-political and environmental ills, leading to a more unequal and inhospitable future."

Conclusions

The arguments presented in this paper can be summarised in three main points: (1) that the study of happiness is important for improving the human

condition, (2) that it is an important part of the advancement of knowledge, and (3) that it can have a positive impact on students, staff and other stakeholders of the university.

The importance of happiness studies

We have sought to show the importance of the study of happiness from a range of perspectives. It is an important topic because of its high ranking when in what people value for themselves and those they care most about. It is a fast growing field of study. Epistemologically, it is important as part of the extension of science from the study of the external material world into internal world of personal experience as well. It is important as a component in the role science can play in improving the quality of life of people (including students and staff at universities) as studies have shown people are not good at predicting what will make them happy (Gilbert, 2007).

Science has contributed to reducing unhappiness (including hunger and disease) and now it is in the process of addressing the other side of the coin, i.e. understanding what increases happiness. The significance of this derives from the fact what makes us happy is not simply less of what makes us unhappy.

Happy students and staff

Institutionally, we want happy students and staff, and we are more likely to get these if we can understand, explain, express and realise happiness. For staff to feel they are contributing to an agenda which benefits people and supports fulfilling lives is rewarding. For our students to study and gain a greater understanding of happiness, including its causes and its consequences, is likely to make them happier students.

Other implications

Are there any other implications of the analysis in this paper? There are at least three. First, it is likely that courses in positive psychology will proliferate as electives in universities (Max, 2007). Second, it is likely that the discipline of psychology will continue its recent growth as an academic subject. Third, the findings of research on subjective well-being are likely to impact on other subjects within a university, particularly in the social sciences and in the subjects most directly related to human well-being.

And a call to action...

Should a university do happiness research? It is likely to be carefully scrutinized, but it is valued, new and fast-growing and relevant to human well-being. As researchers and scholars, we are involved in the quest for knowledge which is important for the benefit it brings to humankind, and universities are an important part of this quest. That quest can now include knowledge about the knowers themselves, which is the realm of greatest importance to most individuals.

The university can contribute to a reframing of what are the important issues, rewards and motivations for global and national economies, businesses and those preparing to play leading or influential roles in society.

Science took off like a rocket in the 17th century but it was largely ignored by universities for almost two centuries, i.e. until the 19th century. Many universities were still playing catch-up as late as the early decades of the 20th century. Happiness research is part of a new subjective revolution within science itself. It can be seen as the second stage of the rocket. We hope that this time the universities will be swifter to respond.

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