

A sustainable future: four challenges for geographers

*If you are thinking a year ahead
sow seeds*

*If you are thinking ten years ahead
plant a tree*

*If you are thinking a hundred years ahead
educate the people*

Kuan Tzu, 720–645 BCE

While possibly a sound maxim for 2700 years ago, does this Taoist insight still hold good today? And, if one of the tasks of geography is to 'educate the people', do we actually think a hundred years ahead – or even fifty? While geography has begun to take up the notion of a futures perspective, how serious is the subject about this really (Hicks, 2007)? And what is there to be serious about?

The world is now changing in critical ways that we had not anticipated. To cope with these changes we need young citizens who understand the nature of local-global connections and are prepared to work for positive change in their local communities now. Is that an appropriate curriculum goal for school geography today? I ask, because I am looking at a headline which reads 'World faces "perfect storm" of problems by 2030, chief scientist to warn', and the opening paragraph continues:

A 'perfect storm' of food shortages, scarce water and insufficient energy resources threaten to unleash public unrest, cross-border conflicts and mass migration as people flee from the worst-affected regions, the UK government's chief scientist will warn tomorrow. (Sample, 2009)

In this article I throw down four challenges to teachers of geography. Not because I don't think they are doing a good job – I see all sorts of good things happening in schools. But sometimes it all feels a bit too neat – another case study on development, globalisation or climate change. I wonder what happened to the dissenting tradition in school geography which really pushed against the boundaries and aimed to create a 'better world' (Walford, 2000)?

My four challenges relate to: i) the nature of human well-being; ii) the impact of climate change; iii) the dilemma of peak oil; and iv) the transition that needs to occur as a result of these.

Human well-being

In studying the production and consumption of goods and services across the world – whether a pair of jeans, a cup of tea or opening a bank account – geographers need some understanding of economics. The dominant litany is that economic growth is 'good', that lack of it is 'bad' and that progress depends on constant economic growth. Now, however, in the face of serious economic recession, this is increasingly being called into question. As John Gray (2009) points out, the notion that free market economics would solve all known human problems was fatally flawed from the start

since it totally ignores its destructive impact on both society and environment.

Take GDP, which it is assumed tells us something about a country's growth and progress. While the sale of arms to another country or the strip mining of coal will increase GDP, it has nothing to say about the consequent damage to people and the environment: both are 'externalities' considered irrelevant by economists. So growth in one place can generate greater inequality and insecurity elsewhere.

This doesn't mean that growth should be abandoned; in poorer countries it really makes a difference, but in affluent countries the research on happiness and well-being shows that it does not. The constant mantra of growth, in which wealth is supposed to 'trickle-down' to the benefit of all, has never been true and 300 years of rapid material growth has also caused untold damage to the biosphere on which life depends (Boyle and Simms, 2009).

Other measures of human well-being, such as the Happy Planet Index (2010), show that it isn't constant consumption that makes people happy but rather family, friendship, health, peer approval, a sense of community and having a purpose in life. In countries with average incomes higher than \$15,000 per annum there is little correlation between increased income and greater life satisfaction. The rampant consumerism and individualism of the last thirty years seems to have resulted in a breakdown in family structure, a loss of community and increased inequality.

Some questions that follow:

- Do you encourage students to ask questions about the nature of human well-being across the globe?
- Do you encourage them to question different indices of human well-being such as GDP and the Happy Planet Index?
- Do you encourage them to question the causes, nature and consequences of unchecked consumerism on both people and planet?

Climate change

Global warming and climate change provide opportunities for all sorts of enquiries, both local and global (Worldwatch Institute, 2009). However, I am a little uneasy about the way in which these topics are sometimes treated. Initially there was simply an emphasis on the science of it all. How do we know whether this is happening? What is the evidence? There is now a wider concern about the effects climate change may have in different parts of the world and discussion about the action that needs to be taken. I sometimes fear, however, that geographers study climate change because it's a good 'geographical' issue rather than asking how the subject can contribute to action that will help mitigate climate change.

Geography has great potential to educate young people to help create a 'better world' for the future.

This article asks geographers to consider how their teaching covers the nature of human well-being, the impact of climate change, the dilemma of peak oil and the transition that needs to occur as a result of these.

There is now a general consensus among scientists that climate change is a major global problem. It should be noted that many deniers are associated with the oil and coal industries which have a vested interest in 'business as usual.' Many of the differences of opinion about climate change arise from competing ideologies, whether free market economics or environmental concern. Hulme (2009) argues that climate change now needs to be discussed in relation to wider issues such as the social meanings it holds for people, the things we choose to give value to, our beliefs and fears, the way we communicate and the way we are governed. In short it raises questions about the very nature of the human endeavour.

Until recently, most discussion on CO₂ emissions focused on the need to keep the average global temperature from increasing by more than 2°C. A study by the Met Office, however, challenged the assumption that severe warming will only be a problem for future generations, saying that, if unchecked, global warming could bring an average temperature rise of 4°C by 2055. Should this occur, deforestation and fires could destroy over 80% of the Amazon rainforest by the end of the century; in southern China and northern India the monsoon rains which supply the water for drinking and for crops could cease; 200 million people could become refugees as a result of rising sea levels, lack of water and crop failure. The overall consequences for food, security, water and health would be enormous – if this scenario were allowed to come about.

Some questions that follow:

- How can we teach about climate change in such a way that it does not worry or disempower young people?
- How can we ensure that climate change is not just one more topic to 'tick off' in the curriculum?
- If climate change requires a new generation of concerned and active citizens, how can we ensure that school geography contributes to this?

Peak oil

The term peak oil may not be as familiar as that of climate change but it will create just as many changes. Oil is essential to our transport systems (road, rail, sea and air), the production of electricity (with its many uses), and its by-products are central

to agriculture and medicine (fertilizer, herbicides, drugs and medicines).

In Figure 1 the bar graph shows the changing rate of global oil discovery since the 1930s. Despite improvements in exploration and drilling techniques the discovery of new oil reserves dropped steeply after the mid-60s peak, and if the curve follows the usual track of resource discovery and use it will decline to nearly zero by mid-century.

The line graph shows that global production of oil is about to peak and will decline quite steeply over the next forty years. Demand will continue to rise and therein lies the dilemma: i) the cost of fuel and electricity will increase as oil becomes more scarce; ii) global oil supply will soon be unable to meet demand; iii) burning what's left will contribute to global warming.

As with climate change, the big oil companies argue that there is no problem, that developing new sources such as the tar sands in Alberta and the discovery of new fields, will put off any problems for the foreseeable future. It is in their interests to do so. Other oil experts, who have now left the industry and broken its rule of silence on this matter, are at the forefront of arguing for a rapid move towards an economy based on renewable sources of energy.

The world consumes more than 80 million barrels of oil a day, 29 billion barrels a year, at the time of writing. This figure is rising fast, as it has done for decades. The almost universal expectation is that it will keep doing so for years to come ... Our society is in a state of collective denial that has no precedent in history, in terms of its scale and implications. (Leggett, 2006, pp. 21–22)

Fortunately, some elements of government and business are beginning to face up to this issue, as witnessed by investigations into the impact of peak oil on the UK's energy future and an expert report from the Centre for Alternative Technology (2010) on how to create a zero-carbon Britain by 2030.

Some questions that follow:

- Are you helping your students to understand what a world without oil would look like?
- Are you helping your students to understand the need for a zero-carbon economy in their lifetime?
- Are you helping students to understand the changes that will be necessary to create such an economy and the part they have to play in this?

Transition times

Issues of human well-being, climate change and peak oil all point to the fact that the future will be very different from today. Many of the practices of the last 200 years are now seen as unsustainable in that while they have brought benefits to some they also created global inequality and long-term ecological damage. The order of change that is needed to adapt to climate change and a post-oil economy is qualitatively different to any other changes in human history (Heinberg, 2005).

One of the most interesting recent developments is what is known as the Transition Town movement (Hopkins, 2008). A transition community emerges when a group of people find they share a common concern for the impact of climate change and peak oil on their local area. The key purpose is the creation of community scenarios and timelines for a more

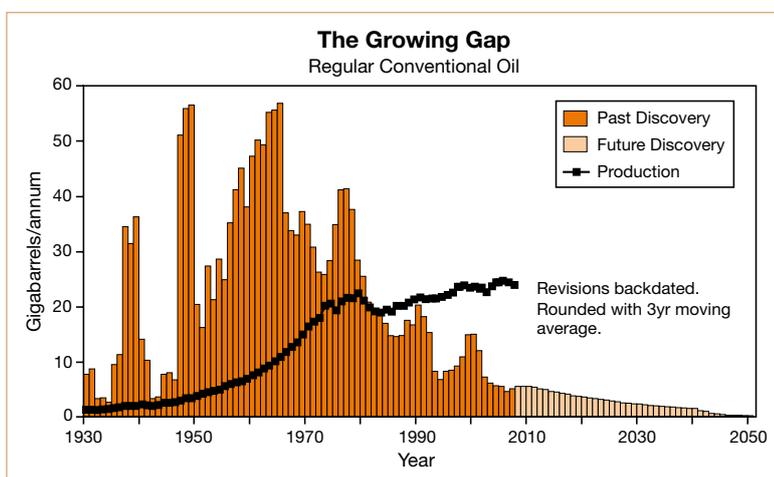


Figure 1: Peak oil – the growing gap: regular conventional oil. Source: ASPO.

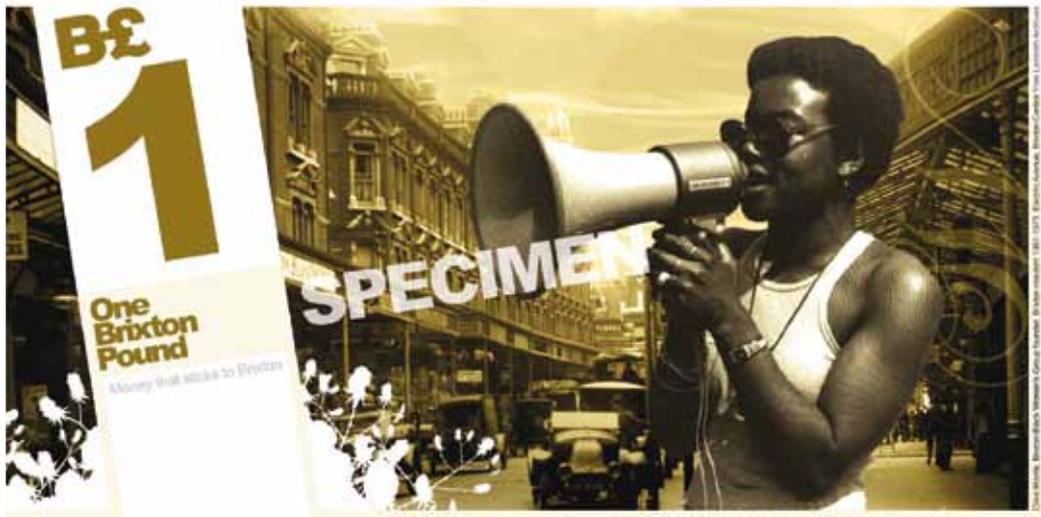


Figure 2: B£1 – One Brixton Pound: an initiative set up by the Brixton Transition Town designed to support Brixton businesses and encourage local trade and production. More than 120 Brixton businesses accept the currency (The Brixton Pound).

sustainable future out of which come plans for an 'energy descent': the shift that will have to occur from reliance on fossil fuels to renewable sources and greater energy efficiency.

As interest groups emerge, for example on energy, food and transport, interrelated action groups are set up. One of the reasons for the success of this movement is that it aims to be as inclusive as possible and starts at the grass roots with people in their community (see Figure 2). In some areas, Parish Councils and Local Authorities have asked to work alongside transition communities. The emphasis is on local reliance. Hopkins (2008, pp. 54–55) writes:

Increased resilience and a stronger local economy do not mean that we put a fence up around our towns and cities... It is not a rejection of commerce or somehow a return to a rose-tinted version of some imagined past. What it does mean is being more prepared for a leaner future, more self-reliant, and prioritising the local over the imported.

The Transition Town movement offers one avenue for becoming directly engaged in action

for sustainable change. Geographers interested in sustainability, Sustainable Schools and those aspiring to become so, can learn a lot from and contribute a lot to such ventures (Hicks, 2011).

Some questions that follow:

- How can you make sure that sustainability is not something that is only taught about in geography but is also a whole-school concern?
- What transition initiatives are there near you and how could your school contribute to them?
- What can geography learn about sustainability from transition initiatives that will inspire students to action in their own community?

In the face of these four challenges David Orr talks about the years ahead as the 'long emergency' so I wonder how geography will contribute positively to the 'education for upheaval' that will consequently be required (Hicks, 2010)? At the very least it needs all of the skills that geography and citizenship teach combined creatively together. As a geographer I would not wish my subject to be found wanting by future generations. | **TG**

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