MEDIA

Kids online

How should parents deal with the dangers
– and the opportunities?

Sarah Womack, former social affairs correspondent of the *Daily Telegraph*

WHAT WOULD MAKE me worry more? I was asked recently, knowing that my daughter was driving the family car or that she had unrestricted access to the internet? It was a question that gave me pause for thought: the keys to the car or the keys to life?

Like most parents, I will pay for driving lessons when my daughter is old enough; learning to drive is a rite of passage for young people in today's society. But do I intend to give her what are, arguably, much more useful lessons in using the internet?

As the child psychologist and government adviser on internet safety, Dr Tanya Byron, says: "The key is for parents to treat the issue of online safety in the same way that they approach other potential danger areas. Would you let your children learn how to cross the road via trial and error? No, you teach them the Green Cross Code. Now we must all learn and teach the Online Safety Code."

It is impossible to overestimate the impact of the internet on children's lives, according to Professor Sonia Livingstone of the London School of Economics. Hers is the largest body of academic research on children's use of technology to happen in Britain, and it has informed public bodies, industries, charities and parents. The work also prompted an investigation by the *Daily Mail* into Bebo, a hugely popular social networking site with 12 million users, the vast majority of whom are under 25.

The newspaper claimed to have uncovered more evidence of the violence and drug culture that blights Britain. "It takes less than 15 minutes to create a personal profile, join the online community... and enter a world where crime and threats of extreme violence are only a mouse click away," it declared. "From thugs posing with guns, knives and knuckledusters to brazen drug ➤

➤ dealers who photograph their 'product' and post the images on their web pages, the dark side of Bebo is unremittingly depressing."

In the United States, 93 per cent of youths between the ages of 12 and 17 use the internet. But this phenomenal figure is even higher in Britain. Professor Livingstone's survey of more than 1,500 children and young people aged nine to 19 found that 98 per cent of children in that group had used the internet – 92 per cent at school, 75 per cent at home and 64 per cent elsewhere. Almost one in five had access in their bedroom.

The survey shows that the most common risk is that most children, at one time or another, disclose personal information to others online. Next most common is encountering pornographic content.

Increasing concern, rightly, is being paid to bullying and harassment online, which affect perhaps one third of children 'somewhat', and a few more severely. Only a minority of children go to meetings with people they've first met online, although figures from the Child Exploitation and Online Protection Centre suggest this is increasing.

For parents, all this is yet another reason to worry about our children. Having kept them indoors to avoid the risks of crime, violence and danger on the streets, we now fret that they are being subjected to more insidious horrors in what should be the safety of their own bedrooms. What's more, because our children are often more adept on the computer

> **Most parents banned their children from giving out personal information, yet only half of children recognise this rule**

keyboard than we are, the internet can seem like a sinister world that we don't fully comprehend and cannot adequately police.

But is the internet a wilderness from which children should be banned? Or are most children perfectly capable of negotiating its pitfalls and predators without having their hands held?

On the face of it, Professor Livingstone's evidence is alarming. More than half of those surveyed had seen pornography online, though most pornography is viewed unintentionally. One third of nine to 19 year olds had received unwanted sexual or nasty comments online or by text message; 46 per cent had given out personal information online; 30 per cent had made an online acquaintance; and eight per cent had met an online acquaintance face to face.

Moreover, many parents were not fully aware of what their children were up to. Most parents (nearly 1,000 of whom were surveyed) banned their children from giving out personal information, yet only half of children recognise this rule and half have given out such information. Fewer than one in ten parents were aware their child had received sexual comments.

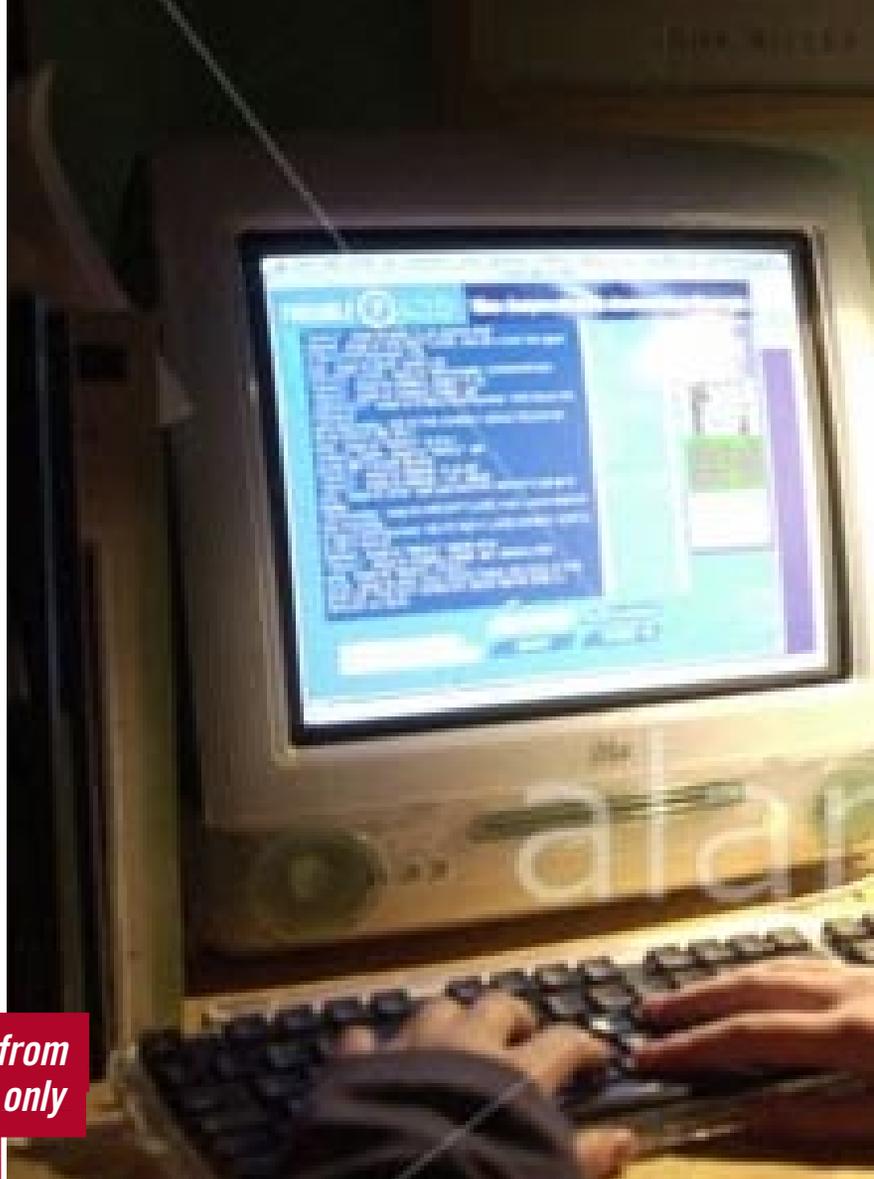So are parents and children equipped to handle the dark side of cyberspace? The latest research

One obstacle to effective adult guidance is that children are often more computer-literate than their parents.

across the European Union – the EU Kids Online network – finds that children are still encountering a fair degree of risk when they venture into the digital jungle. Surprisingly, however, they are 'relatively sanguine' about the consequences, according to a study by Professor Livingstone and Elisabeth Staksrud of the University of Oslo.

"Pornography and violent content is typically ignored, bullying messages are deleted and face-to-face meetings with online contacts mostly result in a 'good time'," says the paper, which focuses on Britain, Ireland and Norway. "This suggests that safety messages – both passive (ignore, delete, etc.) and active (tell someone, take a friend to a meeting) – are effectively reaching many children."

But while many adopt a relatively mature approach to such dangers, this is not to say that they are not sometimes distressed by such encounters. For example, a sizeable minority of British children reported being upset after being exposed to pornography and violence on the internet.

And while some of their reactions were encouraging – younger girls were particularly likely to tell an adult if they came across violence on the internet – many children were more likely to turn to their friends than an adult. The study found

The National Society for the Prevention of Cruelty to Children, for example, has a helpful guide that avoids being too preachy.

It advises children never to use their real name in chat rooms but to pick a special online nickname; never to tell anyone personal things about themselves or their family – such as addresses or telephone numbers or school or clubs they go to; never to send photographs of themselves; and to remember that people online might not be who they say they are.

And despite the risks, Professor Livingstone's study concludes that the internet should be a hugely positive influence on the lives of children. "If we recognise that risky encounters are necessary to the positive development of resilience, the challenge shifts from that of risk prevention to that of balancing tolerable levels of risk against desirable freedoms of opportunity."

In other words, you have to trust your child with the keys to the car – and to life – at some stage: just ensure that you have equipped them with sufficient wisdom and knowledge to handle the road ahead.

Professor Livingstone adds: "There is little evidence that peering over your child's shoulder at the screen, or locating the computer in a public space, is particularly effective. But research is making it clear that three things are effective.

"First, if parents decide to impose rules about internet use, the child must clearly understand and accept them. Second, parental restrictions, such as forbidding chatrooms, downloading or instant messaging, also work, but these are the least preferable alternative as they restrict children's online opportunities. Third, keep channels of communication open so that children are likely to tell parents about uncomfortable or risky experiences." ■

www.eukidsonline.net

Professor Sonia Livingstone's original research project, *UK Children Go Online*, was part of the e-Society research programme.
http://www.york.ac.uk/res/e-society/projects/1.htm

that teenage boys were the most likely to ignore or perpetuate risks, for example, by bookmarking pornography or violence and forwarding the content on to friends.

The research also reveals that the gap between parents and children in their understanding of the internet is wider in Britain than in the other two countries. "Yet British children seem no less likely to tell an adult of a risky experience," it adds.

Overall, the research finds a striking, if not unexpected, contrast between the perceptions of children towards the dangers of internet and those of their parents. "While parents might see children's exposure to pornography as problematic, many children will perceive it as 'cool', 'fun', or not think too much about it."

"Likewise, while face-to-face meetings with online contacts are often labelled as 'dangerous' and linked to paedophile activity, for most children such meetings result in a positive experience with other peers. It will therefore surely be ineffective to avoid such meetings altogether: they will hear from peers that there are no problems, and so discredit the safety advice."

There are plenty of hints that parents can pass on to their children to help minimise the dangers.

Despite the risks, the internet should be a positive influence on children's lives.

Voice of Britain coming home
THE BBC WORLD SERVICE'S DIGITAL DIASPORAS

PROFESSOR MARIE
GILLESPIE, ESRC
Centre for Research on
Socio-Cultural Change,
Open University

ONE OF THE BBC'S Hindi radio presenters was travelling by train in India. In the middle of the night, the train stopped and the lights went out. He opened his mouth for the first time to ask his fellow travellers where they might be. Before he could finish, he was interrupted: "Aren't you the one who answers listeners' letters on the BBC?"

In an instant, he was surrounded by admirers eager to find out about his working life in London. But back in London, the broadcaster's neighbours "cannot guess whether I work in a curry takeaway or a newsagent's."

The intimacy between the broadcasters of the BBC World Service and their often vast audiences is legendary. Hundreds of thousands of listeners' letters from all over the world testify to the extraordinary impact and authority of programmes both in English and in other languages.

But in Britain there is very little awareness of the World Service, its changing role in bringing "the UK to the world, and the world to the UK", and the current technological, market and diplomatic challenges.

Over the years, the BBC's overseas services have been set up and closed down according to strategic diplomatic priorities, as well as technological and market opportunities. The Empire Service, broadcasting in English, was set up in 1932. Broadcasting in Arabic began in 1938; in German, in 1939.

Renamed BBC World Service in 1988, the enterprise has altered with the political climate: from 'imperial' broadcasting to enlistment in the anti-fascist struggle

Technological advances and geo-political shifts are forcing the World Service to redefine itself

during the Second World War; then the Cold War; and now, the 'war on terror'. In 2008, an Arabic television channel was created, intended to rival Al-Jazeera, and a Persian television service launches in 2009. Ten mainly East European radio services were axed in order to fund these initiatives.

International 'public diplomacy' broadcasting is a crowded field. China and Russia are among late entrants developing 'soft power' media outlets. The reputation of the World Service remains intact, but pressures to jeopardise editorial integrity are likely to intensify.

The Foreign and Commonwealth Office (FCO) provides funding and can prescribe where (and in what languages) the BBC broadcasts, but the BBC maintains editorial independence. The agreement between the BBC and the FCO is described as 'gentlemanly'. Both regard providing independent, trustworthy information as the best way to serve national economic and diplomatic interests in the long term.

One of the world's biggest media organisations, the BBC provides multilingual services on a unique scale: currently in 32 languages, with 182 million weekly users, 86 million from Africa and the Middle East, 79 million from Asia and the Pacific and 17 million from the Americas and Europe.

In countries that lack reliable alternative media, sometimes up to a third of the population regularly listens to the BBC. In Afghanistan in 2002, 60 per cent of the population tuned in. Aung San Suu Kyi, Terry Waite and Alan Johnson are among those who have counted World Service radio as a lifeline while in captivity.

When environmental disasters strike – such as the Asian tsunami in 2004 and the Pakistan earthquakes in 2005 – the World Service is relied on not only in the regions affected, but also by anxious friends and relatives around the world.

In Britain, insomniacs listening to Radio 4 in the middle of the night might notice the transfer to the World Service. Many expats and travellers treasure its AM or FM 'snap, crackle and hiss'. But more and more read it as well as listen – accessing services on the internet. Both on the web and on digital radio, the World Service is now available in Britain.

And coincidentally or not, World Service managers have realised that their global audiences are more mobile than ever. The once clear lines separating domestic and foreign news, or domestic and foreign audiences, have blurred. Language and culture no longer map neatly onto territory. A plethora of linguistic, national, ethnic and cultural diaspora groups are increasingly visible and audible in Britain – and everywhere else.

On average, over 50 per cent of the users of World Service foreign-language internet sites are located outside the 'target country'. The Urdu speaker who contributes to an online discussion about Pakistani politics may just as well be writing from the Persian Gulf, North America, Europe or Australia as from Pakistan.

Technological convergence and geo-political shifts are forcing the World Service to redefine itself and its audiences. Diaspora audiences are a consequence of increased migration, coupled with new media technologies. Digital diasporas, dispersed geographically, meet virtually in the BBC's multiple, multilingual 'Have Your Say' forums. Instead of one broadcaster selecting and reading out listeners' letters, listener-reader-writers debate with one another.

This may have far-reaching implications for international opinion formation, and for British diplomatic influence on global political processes. As reported in August 2008, the Home Office's Research, Information and Communication Unit was set up to promote anti-jihadist, anti-Al Qaeda opinion on such sites. But so far, one of the most popular topics for debate across the BBC World Service's discussion forums is: 'Is chocolate better than sex?' It seems moderation is winning. ■

http://www.cresc.ac.uk/research/affiliate/tuning.html

REPORTING ON TERRORISM IN THE MEDIA

The misuse of terms like 'radicalisation'

SINCE 9/11, BRITAIN has experienced a proliferation of radical Islamist activity, from MI5's claim in 2006 of 30 incipient 'terror plots' and 1,600 individuals under surveillance, to actual attacks, the most deadly of which were the 7/7 bombings in 2005. To understand this rise in terrorist activity, academics, governments and security services have undertaken detailed study of what has been identified as the underlying phenomenon: radicalisation.

The term is ambiguous, but most agree that it is a process by which individuals or groups adopt progressively more extreme views, including beliefs in the need for violence for political or religious purposes. In the current context, the political or religious belief systems with which the phenomenon is associated are Islamism and Islam respectively.

Research by Dr Akil Awan and Dr Andrew Hoskins under the New Security Challenges: Radicalisation & Violence Programme has traced the uptake and usage of the term 'radicalisation' in British newspapers since 1995. They note that the frequency of use of the related term 'jihad' increased seven-fold immediately after 9/11 and did not return to its pre-9/11 level, but rather assumed a substantially larger, new 'background reading'. In contrast, the frequency of use of 'radicalisation' barely registered after 9/11, but grew after 7/7. This

The use of the term 'jihad' increased seven-fold in the British press immediately after the events of 9/11.

AT A GLANCE

The printed media's "nonchalant and regurgitative" use of terms like 'radicalisation' – terms that have often yet to be satisfactorily defined – should be a matter of concern to us all.

is the point at which radicalisation in an Islamic context entered the popular lexicon. Subsequent peaks not only correlated with terrorist threats and attacks, but also with publications of reports and academic conferences that mention the term.

The study also examines differences in usage of the term in *The Sun* and *The Times*. The latter's use reflects the general trends, with a big rise after 7/7, whereas the former failed to acknowledge the relevance of the term until relatively late, and even then only in a cursory manner.

Dr Awan says: "Considering *The Sun* is Britain's best-selling daily, the ramifications for audience misunderstandings of a term like 'radicalisation', which is presented as being central to the new security environment, should concern us all. *The Times'* and other media's nonchalant use and regurgitation of a term that confounds academics and policymakers should worry us even more." ∎

http://www2.warwick.ac.uk/fac/soc/pais/research/nsc/projects/hoskins

Internet gambling: the damage to family life

THE INTERNET HAS brought a host of benefits to families, providing parents with online shopping and children with answers to homework projects. But it can also do great damage to family life, notably with the emergence of online gambling, one of the fastest growing internet industries.

The opportunity to gamble 24 hours a day, seven days a week can bring significant problems, which were, until now, much more confined and controllable. For people who are predisposed to addictive personality traits, the sheer number and availability of opportunities to wager on a huge variety of games can lead to financial problems and family breakdown.

Research by Professor Gill Valentine of Leeds University has explored the causes and consequences of gambling online. Some of the people she surveyed, particularly those who were not in a relationship or unemployed, cited 'boredom' as a major factor. Others said that it was an 'escape' from the stresses and strains of work and family.

As is common for people with addictions, online gamblers develop methods to carve out time to indulge their habit, while hiding it from those around them. And like all addicts, they

are unable to recognise their addiction as a problem, and are adept at finding ways to fund their habit, some resorting to theft and fraud to carry on. The impact on those around the gambler is as devastating as any other addiction. Once recognised, mainly due to the financial problems created, families rally, providing emotional and financial support.

But 'recovery' for gambling addicts is more than controlling their addiction and re-establishing financial security. It often requires earning back trust and repairing relationships. Families provide support, putting in place surveillance techniques, monitoring movements and removing access to the internet, money and credit.

The study finds that once gamblers recognise their problem, they generally do not see a benefit in the kind of group support that is available to alcoholics through programmes like Alcoholics Anonymous. But one-to-one support is available and, with individual commitment, gamblers – like other addicts – can and do recover. ∎

http://www.geog.leeds.ac.uk/people/g.valentine/gambling

THE ELECTRONIC GAMES BUSINESS

From shoot-'em-ups to sing-'em-ups, Britain's video games developers are still leading the way

BRITISH DEVELOPERS are pioneers in the electronic games industry. It's well known that they have been successful in the 'shooter' genre, with games like 2008's blockbuster *Grand Theft Auto IV*, developed by RockStar North. But there are also big hits in the emerging genre of games appealing to women, families and retired people, including the *SingStar* franchise of karaoke games for the PlayStation, created by Sony's London Studio.

The conventional view of games focuses on the evolution of consoles like the PlayStation and Xbox with ever-greater processing power and more complicated controllers. Traditions have quickly been established in this young industry to aim for photo-realistic graphics and gaming experiences simulating battle, racing and flying. Understandably, these products appeal to the core market of males aged 15-35.

Yet the outstanding success of the Nintendo Wii, with its family flavour and women-friendly products like *Wii Fit* and *Wii Sports*, has taken the industry by surprise. Add the sustained popularity among older people of the 'brain training' category of handheld games, and the landscape of this major consumer industry is clearly shifting.

Research by Dr Jonathan Sapsed, an Innovation Fellow of the Advanced Institute for Management Research, shows how British developers are producing pioneering products in these new genres. *SingStar*, for example, has been an early and enduring hit, and not only with the young female market for which it was designed.

Originally the concept involved a storyline with songs, but it was later pared down to its core appeal: a social, singing experience. This is now being extended to video sharing of performances on the PlayStation Network as thousands of international *SingStar* fans participate. "We've done everything from Norwegian rap to Croatian '80s trash," says *SingStar* senior producer Paulina Bozek.

Another British hit is the *Buzz!* franchise of quiz

Products like *Wii Fit* and *Wii Sports* have surpassed all expectations.

AT A GLANCE

The video games industry is expanding out of its traditional core market of young males, and the way games are produced is changing too.

games, which involves gamers playing with buzzers as in a TV quiz show. *Buzz!* is designed by Brighton-based studio Relentless Software, which makes special efforts to hire women and non-traditional gamers, and to provide a work environment with regular, family-friendly hours.

With his colleagues Juan Mateos-Garcia and Andrew Grantham at the University of Brighton, Dr Sapsed is researching how work practices are aligning with the market innovations that British studios are producing. The industry is emerging from its early adolescence and blooming into new areas of maturity. There are still shoot-'em-ups – but now there are sing-'em-ups too. ■

http://centrim.mis.brighton.ac.uk/research/projects/ipda

Privacy online: are we too trusting?

WE MIGHT BE concerned about privacy online, but we are still willing to reveal personal information. Though more than half of the participants in an ESRC-funded survey said they have concerns about privacy online, they were more willing to accept requests for personal information when a website looked trustworthy. Even the most concerned were prepared to disclose personal information if they trusted the source of the query. If the

website looked untrustworthy, users became more guarded.

"For the first time, we have research that actually analyses what people do online, rather than just looking at what they say they do," says lead researcher Dr Adam Joinson of the University of Bath.

"One of the most interesting aspects of our findings is that even people who have a high level of concern regarding privacy online may act in a way contrary
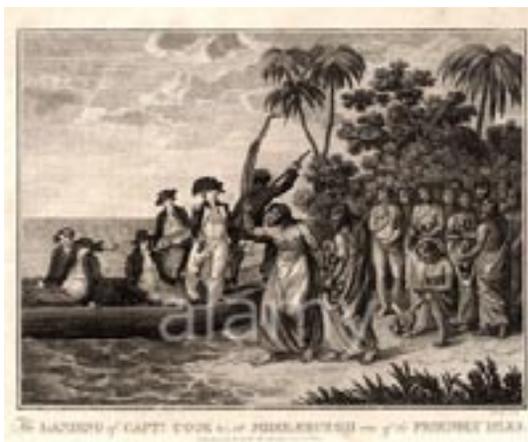
TRACING FAMILY HISTORIES GOES GLOBAL

THE INTERNET HAS stimulated huge interest among amateur genealogists in tracing the lineage of individual family names. It has also made possible the assembly and mapping of huge genealogical datasets. Professor Paul Longley and colleagues at University College London have pulled together data on family names representing one billion people resident in 26 countries in the Americas, Asia, Australasia and Europe.

These data, which are freely available online, provide the opportunity to investigate the global distribution of any of 10.8 million unique surnames and identify the 6.5 million forenames that are most closely associated with each of them. Users can find out the countries, regions and settlements in which their names were originally coined, and the parts of North America and Australasia in which they are now also concentrated.

Aggregations of names provide a picture of the outcomes of migration to date. For example, the website makes it possible to identify the 5,000 Welsh speakers resident in Patagonia in Argentina, some of whose ancestors sailed on the *Mimosa*. ■

http://www.publicprofiler.org/worldnames

to their attitudes when they come across a particular set of conditions."

The study finds that website design can encourage users to opt for non-disclosure or minimum information as long as this is the easiest option to choose. If the response 'I prefer not to say' was the default option or at the top of a drop-down list, participants were less likely to disclose information. And if the website offered the opportunity to be vague – for example, with a wide salary bracket of £10,000-£50,000 – users chose these categories.

The researchers also looked at attitudes to identity cards. Though privacy attitudes were influential, even people classified as 'privacy unconcerned' would be opposed to ID cards if the way they were asked for information made them feel that their privacy was threatened. Low trust in government, combined with a high perceived privacy threat, led to increased opposition to ID cards. ■

http://www.bath.ac.uk/management/faculty/adam_joinson.html

SUSTAINABLE LIFESTYLES: TENSE ONLINE DISCUSSION

TENSIONS IN THE way people discuss issues around sustainable lifestyles and ethical consumption may be of more significance for policy initiatives than is often recognised. A study by the Research Group on Lifestyles, Values and Environment has explored these tensions by analysing an online discussion of a polemical article by campaigning journalist George Monbiot published in *The Guardian* in the summer of 2007.

The piece was entitled 'Ethical shopping is just another way of showing how rich you are'. The extensive discussion that followed illustrates how such issues are debated in a particular kind of forum and the strikingly large number of issues that contributors raise.

Arguably taking their cue from Monbiot, many use a strategy of denigrating particular behaviour or arguments by associating them with particular social classes. This association then brings into question the authenticity of people's commitment to achieving social change.

But many other themes cut across these social attributions. Arguments about the value of different shades of green politics are rehearsed – and it is notable that the discussion sometimes reads as just the latest skirmish between combatants who seem to know each other. And the moral dimensions of the discussion, in relation to the need for sacrifice or the inherently selfish character of human nature, can take on an overtly religious character. Elsewhere, an explicitly secular rationalism is forcefully expressed, and on occasion used to justify authoritarian politics.

In places, crude ad hominem arguments are used, or fine differences of position debated with disproportionate force. But other contributions are highly analytical, ironic and aware of the limitations of trying to dismiss an argument by simply indicating the social position of its author. One abiding impression is the amount of 'baggage' many participants carry. This constitutes a considerable challenge for policymakers who think that a change of attitude is fundamental to the achievement of more sustainable patterns of consumption.

The sheer diversity of concerns brought to these online discussions suggests that the political task of changing attitudes is considerable. Moreover, since apparently simple terms such as 'ethical shopping' contain many contradictory connotations, there may be value in being more attentive to the terminology used to frame discussion of policy agendas. ■

http://www.surrey.ac.uk/resolve

AT A GLANCE

Online debate about sustainable lifestyles can get surprisingly heated. That social class, religion and perceived personal character are often used in such debates suggests that policymakers have a hard task encouraging real lifestyle change.

POLITICAL ACTIVISM AND THE INTERNET

How activists use alternative media

THE POLITICAL ACTIVISTS of today could not be more different from the kaftan-wearing hippies of the past. Many are highly organised and take advantage of modern technology to press for change on issues such as global warming and healthcare for the poor.

Research by Professor André Spicer of the University of Warwick, conducted within the Non-Governmental Public Action Programme, has been looking at the 'alternative media' these activists use to ensure that a range of voices and ideas are heard.

Spicer says alternative media organisations do "amazing things", producing some of the most compelling and "daring" news coverage available in an effort to make sure that the truth "gets out there". They can allow audiences to see material that the BBC, for example, would never have used, such as exclusive footage of the escape from the Woomera detention camp in Australia and coverage of the successful campaign against an oil company investing in Burma.

Activist-led alternative media have also led the way by enabling people to get their views across via the internet. Social websites like MySpace and YouTube now try to copy the models that were invented by the alternative media. The difference is that the social websites are out to make money whereas the alternative media see the internet as a way to give millions of people a voice to campaign for a better world.

Many believe that the alternative media are critical to the survival of democracy. They make it possible for anyone to upload a report – written,

Online activists invest a lot of time and effort in their cause; this can lead to 'burn-out'.

audio or video – directly onto a website. The philosophy is that users are no longer passive receivers of information controlled by big media organisations. Instead, they are actively expressing their opinions and exercising their freedom of speech without fear of recrimination.

This raises questions about how these people organise themselves: what their structure is and how the lack of physical space affects their operation. Professor Spicer says such sites are brought together by a sense of kinship and devote a lot of time and passion to what they do. But many suffer from 'activist burn-out' because it is hard to sustain this level of commitment over time. This is exacerbated by the fact that there is no formal structure to keep groups together. The use of consensus decision-making allows members to participate in how organisations are structured, but also slows down their potential to be flexible and respond quickly. The result is reduced opportunities for protest.

"These groups have produced some alternative ways of organising news media based on principles of co-operation and participation," Spicer says. "But in order to continue to make these vital contributions, they must be aware of the dangers of turning in on themselves." ■

http://www.lse.ac.uk/collections/NGPA

AT A GLANCE

The internet has fundamentally changed the ways in which political activists operate and interact. Yet the potential for informality in online organisation can sometimes work against them.

How anti-racism advertising can backfire

Illustration of a person frowning at a 'kick it out' campaign poster for Football Against Racism

PEOPLE IN TWO minds about their attitudes towards ethnic minorities become more unfavourable when exposed to anti-racism advertising. According to a research team led by Professor Gregory Maio of Cardiff University, these 'backfire effects' occur both consciously and non-consciously.

These findings have dramatic implications for the use of anti-racism advertising in Britain, where messages attacking prejudice have been used by many organisations. Examples include Scotland's 'One Scotland, many cultures' slogan and the 'Kick it out' and 'Stand

up, speak out' campaigns of Football Against Racism.

The team carried out 12 studies, each involving at least 60 male and female undergraduates at Cardiff University. They find that the negative effects on the views of people with initially ambivalent attitudes to ethnic minorities occur even months after their conflicted feelings have been measured, and days after the anti-racism messages are presented to them.

People who both like and dislike a particular ethnic group will scrutinise messages that support a positive

attitude towards that group, perhaps because they hope to reduce the tension in their own attitudes. Unfortunately, this leads to more negative attitudes towards a minority group when the material they read contains weak arguments.

The report argues that it is important to understand how anti-racism messages might help reduce ambivalence, and so make people more amenable to what is being said. ■

http://www.cardiff.ac.uk/psych/contactsandpeople/lecturing/maio-greg-overview_new.html

An emerging global brain
HOW THE INTERNET IS REVOLUTIONISING SCIENTIFIC RESEARCH

DR RALPH SCHROEDER and DR ERIC T MEYER, Oxford Internet Institute

OVER THE LAST decade, the research funding councils of Britain have invested hundreds of millions of pounds in 'e-research' or 'e-science' – efforts to build new tools and sources of data that allow researchers to engage in science involving 'distributed collaboration'.

This investment now also reflects the anticipation that blogs, wikis and other forms of 'virtual communities' may represent a major shift in the practice of science, potentially transforming how it is done and the kinds of questions that can be asked – from genomics and healthcare to searchable and annotated philosophy texts.

Perhaps the most prominent recent example of e-science is CERN, the particle physics laboratory in Geneva, where scientists are networking high-performance computers around the world on a massive scale to analyse data from the Large Hadron Collider.

But not all e-science is as large-scale and top-down as CERN. There are also much more diffuse and bottom-up initiatives among researchers to share their work electronically. Life science researchers are developing WikiGenes and WikiProteins so that data on genes and proteins can be contributed, annotated and accessed by thousands of researchers from around the world in a common database. Literature enthusiasts are annotating the post-modern novels of Thomas Pynchon on the PynchonWiki. Geographers are encouraging BBC listeners to contribute data about anti-social behaviour and the credit crunch on maps shared via MapTube.

Unlike more traditional academic research, these open collaborative initiatives engage with wider publics, and will

We are all contributing to a research instrument that will illuminate parts of the 21st century world

reshape not only commercial and university research, but also how homework is done and how knowledge is accessed among a generation brought up on Wikipedia and YouTube.

So will e-research revolutionise science and knowledge? The short answer is yes – but perhaps not as rapidly as the most enthusiastic promoters of these enterprises sometimes imply. There is a common misunderstanding about how science and knowledge work. The view widely held by both academics and the lay public is that light bulbs go off in researchers' heads – Eureka! – and these novel ideas then lead to new technologies, which, in turn, are eventually commercialised.

But this is backwards in the case of many research technologies: new instruments like the telescope, the compass and the X-ray machine have enabled scientists to understand and manipulate the world more effectively. Thus, research technologies are often key enablers for the generation of new scientific ideas.

This also means that research is rarely the effort of the lone scientist, but increasingly of teams who build instruments and machines. Physicists who create large research facilities to smash atoms may be simply the most extreme example of this kind of large organisational and technical effort. Social scientists, medical researchers and humanists are increasingly building the technological infrastructures that will enable the next generation of research questions to emerge.

The internet is just the latest instrument being exploited to create knowledge. Digital materials of all types – DNA databases that can be analysed by biologists, the networks of people on Facebook that allow sociologists to identify friendship ties, online newspapers which can be mined by historians – are transforming the way that research is being done in the 21st century.

Yet revolutions, political or scientific, can only be seen in a long-term perspective. There will be many false starts in e-research; some large-scale 'cyber-infrastructures' will remain unused; many wikis will lie fallow. Decades of science policy research have failed to come up with a magic bullet, and all we can really predict with some degree of confidence based on historical evidence is that more powerful online research technologies will slowly but surely revolutionise certain areas of knowledge. But it is very difficult to know exactly how or in what fields or in what configuration they will do so – what combinations of software and hardware, web services and cloud computing, small teams and large multi-institutional collaborations, and top-down or bottom-up approaches will emerge.

The digitisation of research has been called an emerging 'global brain'. Medical researchers can already use magnetic resonance brain-scanning machines to see which areas of the brain activate in response to stimuli. These machines, too, are research instruments that will make new discoveries about human behaviour. But while researchers may soon be able to chart the pathways that are activated when 'light bulbs' go off in scientists' heads when they have creative ideas, this will tell us little about when and where to expect scientific progress.

The practice of e-research invariably creates digital footprints. Surely, then, it must be possible for us to analyse scientific advance – by measuring the growth of databases, by tracing citation patterns to identify fast-moving areas of science, or by counting the number of hits on a scholar's website?

Pinpointing areas of promise would be a great boon to science policy and to research funding bodies. But again, discovery is very difficult if not impossible to quantify or track automatically, except with hindsight, even in the online world of e-research. Even so, there is little doubt that we are all increasingly contributing to a globally networked brain, a research instrument that will eventually illuminate some parts of the 21st century world in a more powerful way. ■

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