

RISK IN PERSPECTIVE

In defence of common sense



October 2005

FOREWORD

If ever an image could capture the danger of deferring risk management to supposed experts, it would be of incredulous faces in New Orleans. Passivity and dependency invariably puts people at greater risk than otherwise.

This is not to suggest we tackle problems alone, but rather that we need an engaged, practical and socially-focused approach to these matters. It is this that allows us to trust others appropriately and to hold them to account.

So much for real threats – but, in many instances, risk management and communication becomes part of the problem rather than part of the solution. This is because it is the perception of a risk that has to be challenged.

Understanding that without grasping and tackling such issues at their root then, beyond superficial and temporary measures, there can be no solutions, this paper flies in the face of comfortable compromise.

It concludes with a call to interested parties, not just to provide information, but to 'interpret it properly'. At a time when many hold information and transparency to be the answer, no point could be more important.

In many risk debates, absence of evidence of harm leads some to conclude that dangers can be hidden. But, like weapons of mass destruction in Iraq, it is vital to expose such arguments as being not logical, but political, and then to engage with, and win, those debates.

Unusually for an industry association, the CTPA has produced a remarkably thought-provoking and engaging document on risk, not once, but twice now. They should be warmly commended.

Bill Durodié

Senior Lecturer in Risk and Corporate Security
Cranfield University



CONTENTS

EXECUTIVE SUMMARY	6
CHAPTER ONE	
DEALING WITH RISK	10
CHAPTER TWO	
SOCIAL CAUSES AND CONSEQUENCES	14
CHAPTER THREE	
MAKING SENSE OF INFORMATION	20
CHAPTER FOUR	
SCIENCE AND RISKS	24
CONCLUSION	30
FURTHER READING	31

EXECUTIVE SUMMARY

In March 2004, the CTPA published 'Making Sense of Risk'. This examined the debate on risk communication from an industry perspective. We looked at the challenge of making sense of risk and explored the difference between risk and hazard. We found that the terms are often used interchangeably, leading to confusion. For the sake of clarity, risk is more than the presence of a hazard; there has to be exposure to a hazard. Risk is the likelihood of harm occurring. Decisions and regulations made to protect consumers should be based on risk rather than hazard, a basic principle of European Community legislation.

Since we published the last white paper, we have seen encouraging signs of a more reasoned debate on the subject of risk. We had a good response to the issues raised; many of those we contacted recognised the debate we were trying to stimulate and were willing to participate. In some parts of the media we have also seen a balanced discussion of risk.

A piece by The Guardian's Steve Cochrane, for example, is summed up by his headline – 'Shock, horror – I'm well: How useful is the never-ending torrent of health stories in the daily press?' (1st March 2005). Increasing awareness, especially as a result of the Sudan 1 food scare, led Marketing Week's David Benady to ask 'Are consumers becoming immune to such scares?' (20th January 2005).

However, there is little evidence to show there has been a decrease in the number of sensationalist media reports that suggest hundreds of everyday items, including food, technology or cosmetics, pose a risk to our health. There are numerous examples, both from within and outside our own industry, where headlines give a misleading impression of the actual content of new scientific reports or small studies. In the last few months these have included concerns over toothpaste, ibuprofen, power cables and mobile phones (to name but a few).

Exploring consumers' attitudes to risk

In this new paper we now wish to explore consumers' attitudes to risk. We all face the daily challenge of putting risk into perspective and in this new paper we set out to understand more about how we do this.

This paper argues that consumers deserve more credit for holding sensible attitudes to risk. It challenges perceptions, often created by NGOs and the media, of a society frightened of the results of scientific developments and scared of everyday products. What is clear from this research is that when given information in a balanced way, consumers understand the benefits of scientific progress and also appreciate that zero risk in life is impossible.

Polling commissioned for this paper examined people's attitudes to different risks. We found that, as a society, we recognise the scale of the risks we choose to take and those over which we have no control. For example, our respondents placed smoking and taking illegal drugs as high risk activities, and they realise flying is on a lower risk than driving. Generally we are able to weigh up media reports which link products we use/consume every day with actual harmful effects – just 3% said there was

a high risk to their health. Furthermore, despite apocalyptic reports of a 'toxic environment', we do not believe that as a nation our collective health faces greater threats than ever before – indeed, 76% said that in the past 50 years our health had improved.

In defence of common sense

We also uncovered sensible attitudes towards the 'scare stories' which many people reported seeing in the media. Of those who had, 53% said there was no/low risk to their personal health or safety from using products associated with scares, and a further 32% reported the risk as low to moderate. The reasons for this varied, but included an acceptance that there are regular reports like this and that the media can be too sensational. In addition, 55% recognised that they did not consume sufficient amounts of the products, suggesting that many people naturally understand the concept of 'the dose makes the poison'. We believe that consumers should be given greater credit for this common sense. And although we refer to it as 'common' throughout this paper, we could equally be labelling it 'uncommon sense'. We are highlighting people's ability to weigh up and manage risk in their lives – and the fact that our society has the ability to do this should be recognised and valued.

However, our industry and many others continue to face 'scare stories' about chemicals and science which may undermine these abilities. Where we face a constant overload of contradictory and misleading information, confusion is the likely outcome. We are concerned this makes people feel increasingly impotent in making their own judgements and leads to greater pressure on those in authority to provide absolute protection. The result is disproportionate action taken or a misguided approach that seeks to win public confidence through over-reaching precautionary measures. The outcome is a society where we rely less on people's natural ability to put risk into perspective, and the precious commodity of common sense is further depleted.

We consider Sudan I as a recent case study. The risk in this high profile food scare was extremely low and our polling shows that consumers understood this. It is an example of where the over-riding need for authorities to publicly demonstrate 'responsible' action may have damaged long-term trust in the food industry.

Our call for a balanced debate about risk

Our concern stems from this growing trend because as an industry our aim is to make safe products that consumers trust and want to buy. We want to avoid sensationalist health scares in the media and unbalanced debate at policy level. In addition, scares lead to a clamour for further research, diverting funding and attention from where they are needed most.

In the wider context, we argue that a gradual erosion of common sense is unhealthy for the development of a vibrant society because it undermines self-belief and erodes the confidence of individuals in their ability to create a better world. In business, that will mean a more risk-averse culture, depressing innovation and enterprise.

This paper builds on our previous calls to action, including closer collaboration between NGOs, government, industry and the media, to create a climate in which people are able to make sense of the right information. We want recognition of the need to provide clear and accessible information that relies on people's ability to put risk into perspective. In short, to trust in their own good sense. We must avoid a situation where risk is increasingly perceived as something alien and external rather than something we can constructively engage with.

It is essential to prevent science being undermined. That means those who communicate science to the public – whether the media, government or scientists themselves – must take a responsible and open approach to doing so.

And finally, we hope that by producing this second white paper we can continue to encourage sensible, balanced debate about risk and its acceptance as a manageable component of daily life.



A handwritten signature in black ink, appearing to read 'Chris Flower'.

Chris Flower MSc PhD CBiol MIBiol
Director General of the CTPA

Methodology

This white paper is based on secondary desk research and primary research commissioned by the CTPA. A YouGov survey was carried out in July 2005 and surveyed 2,000 adults across the UK about their attitudes to risk.

CHAPTER ONE – DEALING WITH RISK

Putting risk into perspective on a daily basis

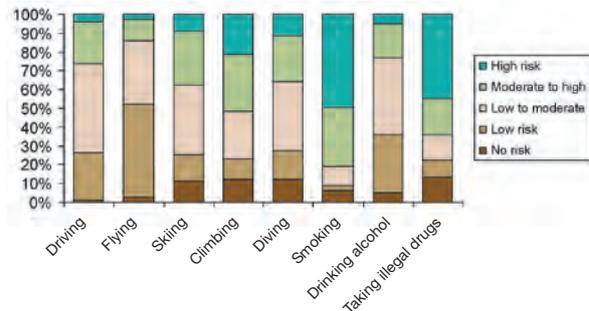
Day in, day out, we make sense of risk and place it into the perspective of our daily lives. Most would accept the judgement is not entirely rational, given that often we worry about small risks while ignoring those which are significantly more likely to lead to harm. For example, natural disasters or wars are feared because their results are potentially catastrophic and they are outside our personal control. However, we often do this consciously and admit our fears while knowing the actual risk is low. People who are afraid of flying will often freely accept that their fear is irrational, being fully aware of the safety record of flying. See fig. 1.

The people we polled for this research demonstrated a proportionate response to the risks about which we questioned them. The research took place just one week after the July bombings in London when there was a high degree of apprehension about further attacks. However, even in this situation, 57% recognised that the personal risk to them from terrorism was low or low to moderate. In London this was only slightly lower, at 51%.

At the other extreme, we choose to take risks such as to smoke or take illegal drugs.

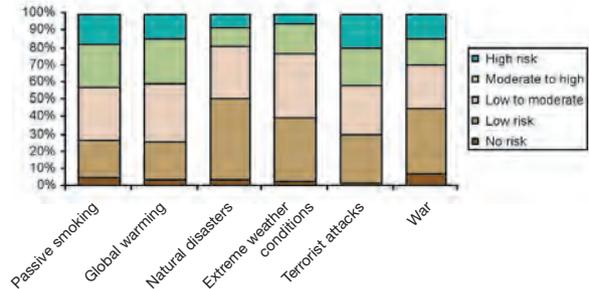
We know that the risk is high – these came out top in our research with 49% of smokers saying that smoking was high risk and 31% saying it was moderate to high. See fig.2.

Fig. 1: How do you rate the personal risk of participating in the following activities?



Base: All those who said they participated in these activities (driving 1698, flying 1291, skiing 485, climbing 440, diving 449, smoking 785, alcohol 1703, illegal drugs 448)
Source: YouGov Survey 2005

Fig.2: How do you rate the personal risk of the following issues?



Base: All respondents (1999)
Source: YouGov Survey 2005

Other research supports the conclusion that we understand risk appropriately and in proportion. The National Consumer Council showed that, when pressed, people are really concerned with those risks that will have the greatest impact on their personal happiness and health. They were also concerned about risks that could be managed, such as unhealthy eating, getting into debt or not having enough money in retirement.¹

Risks to our health

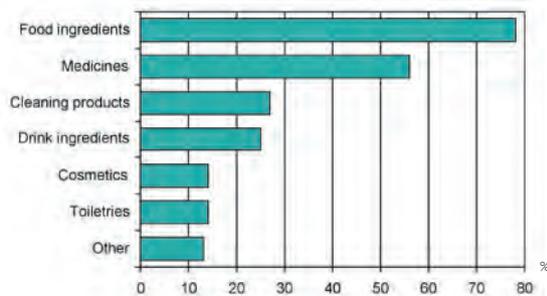
Food, health and consumer products are areas of our lives where we are frequently faced with the challenge of gauging risk. From some sources we see portrayals of a nation at threat from greater health risks than at any time in our history. Part of this is the misleading impression that there are more and more chemicals slowly contributing to a deterioration of our health. An example of this is the writer Dr Paula Baillie-Hamilton whose book *Stop the 21st Century Killing You* claims, contrary to the weight of scientific evidence, that 'good health is becoming more and more of a rare commodity'.²

Despite the emotive language, we appreciate our health is not more at risk than ever before. We asked people how the general health of the nation has evolved in the last 50 years in the UK; 76% said it had got better.

A proportionate reaction to scare stories

Our research asked people specifically about media reports that link products they use or consume day-to-day with harmful effects. Food scares are the most high-profile amongst these, with 78% of people reporting that they had seen reports on food ingredients. Others mentioned were medicines, cleaning products, drink ingredients, cosmetics and toiletries. When asked to rate the personal risk of using or consuming these products, only 3% said high whereas 53% said there was no/low risk and a further 32% said the risk was low to moderate. See fig.3.

Fig.3: Which type of products have been included in the media reports that you have seen/heard?



Base: All respondents (1999)
Source: YouGov Survey 2005

¹ *Running Risks: Summary of National Consumer Council research into consumers' views on risk*, October 2002

² Dr Paula Baillie-Hamilton, *Stop the 21st Century Killing You*, Vermilion, 2005 p.8

The majority of people do not over-react to scare stories because they recognise the risk to their personal safety is low. There is wider variation over whether they should change their purchasing behaviour – the majority of people asked sometimes did, or at least considered doing so. However, only 4% said they would always change product and 16% said they had never changed their buying behaviour as a result of media scare stories. We have seen this pattern in our own industry following scares on products such as deodorants and toothpaste where sales were not significantly affected. A scare in 2004 about the safety of Scottish salmon also gives a clear demonstration; after the initial story there was a more balanced debate in the press about the low risks and, in this instance, sales of salmon actually rose.

Information overload

These patterns suggest the population as a whole is becoming de-sensitised to 'scare stories'. One clear reason is the sheer volume of information we are now expected to absorb from an increasing number of sources on a daily basis. Not only does a fragmentation of media mean we can access hundreds of TV channels, but we also receive a wealth of often contradictory information from the Internet. We argue the way people are expected to assimilate information is one of the roots of our concerns about the risk debate. The breadth of information and number of sources, coupled with our perceptions that we are a time-pressured society, means we have less scope to read in-depth or analyse. As consumers, we often feel pressured by a sense of not being able to 'keep up' with available information. As one consumer put it, 'one week it's this that you can't eat, then it's something else... I just can't keep up with it... I've got more important things to worry about'.³

³ Female, 60+C2DE quoted in *Running Risks: Summary of National Consumer Council research into consumers' views on risk*, October 2002

'A rumour can circumnavigate the world before the truth has its boots on'

(anon)

In these circumstances it is not surprising that we find it harder to make risk assessments and exercise our natural common sense. We have increasingly looked to government and regulatory authorities to make decisions about what activities are safe for us and our children, how best to protect us financially, or even what products we are able to buy, use or eat. The confusion caused by this wealth of often conflicting information increases our sense of impotence and, in turn, the expectation that we need to rely on the authorities to protect us. Of course, protection and good regulation are essential – authorities should enforce good practice and make industries accountable. For example, current regulations in our industry mean that products have to undergo stringent assessment procedures before they are judged safe to go on sale.

However, in recent years this has started to develop into an unhelpful pattern because it is being taken to an extreme. Amongst some commentators, the word 'accident' is even being phased out in favour of the term 'preventable injury' – an indication that we find it hard to accept that some events are just not preventable. It could be argued that because we expect action will be taken to protect us, those in authority feel under pressure to be seen to be doing all they can to keep us 'safe' at all costs. This can lead to excessive precautionary action. In turn, this perpetuates the idea that there are unknown dangers against which we need protection and it makes us increasingly impotent to exercise our own common sense.

We argue there is a need to break this cycle otherwise it will gradually erode the natural ability of people to put risk into perspective. The negative impact of this consequence is explored further in chapter two.

CHAPTER TWO – SOCIAL CAUSES AND CONSEQUENCES

'Fear itself has become a perspective on life... increasingly as we've lost touch with other people and become more isolated, we've adopted a perspective where just about every experience is looked at in terms of the worst possible outcome'

Frank Furedi⁴

Inadequacy of the individual

Concern about the safety of everyday products is one part of wider risk trends which have potentially long term consequences. If people begin to switch off from understanding the specific debates around each issue, it is likely they will instead be more inclined to accept a general negative perception of a society facing greater risks. In our research, we asked people how they thought the health of the nation had evolved in the UK over the past 50 years. While the majority said it had improved, younger people (in the age group 18-29) were twice as likely as other groups to say that the health of the nation has got worse. There could be a number of reasons for this, including absence of historical context for younger people. However, it could also suggest young people feel greater confusion about threats to their health because they have only known the world of information overload they receive and the scare stories.

In this context, it becomes more acceptable to demand that risks in our lives are reduced by those in authority. The sociologist Frank Furedi has studied the impacts on society of this trend and argues that in recent years we have seen 'the transformation of safety into one of the main virtues of society'.⁵ Scare stories about growing risks to our health and safety add to the perception of a future over which we have little control. Furedi warns that we are in danger of creating a society where everyone is potentially a victim. This has negative consequences for people's happiness and self-belief, and it encourages pessimism and apathy in our approach to improving the world in which we live.

⁴ Frank Furedi quoted by Michael Duffy 'The Sum of our Fears', article on www.frankfuredi.com, August 2005

⁵ Frank Furedi, *Culture of Fear*, Continuum, 2005 p.147

In the business world

There is also a price in terms of reduced innovation and enterprise through a more risk-averse culture in the business world. Risk is vital in many different areas of business, including medicine, finance and science. The Chancellor Gordon Brown claims it is essential that we invest in science and innovation in order to compete in a global economy. However, inevitably this enterprise agenda also depends on a vibrant, risk-taking culture.

Yet, in a risk-averse culture, people increasingly demand impossible or unrealistic levels of certainty from science and innovation. Industry should do all it can to be open and transparent, but equally should avoid promising certainty of outcome where it is not possible.

Some argue that mobile phones are an example of this. Many concessions have been made over recent years to incorporate the concerns of the public, even though the latest Stewart report from the Government found there was still no evidence linking mobile phones with health risks.



Individual responsibility for risk assessment

There is a need to break this cycle of information overload, inability to exercise a common sense approach to risk and poor regulations based on scares and excessive precautionary pressure. The aim should be to create empowered consumers, able to exercise individual judgement. People are prepared to make their own decisions about risk provided they are given the right information and the tools to interpret this with. We do it on a daily basis with our children – the belief in parental responsibility is deeply ingrained.

Furthermore, people expect to make decisions about complex issues by weighing up the evidence. Again, the aftermath of the London terrorist attacks is a positive example of proportionate response. While Tube use has decreased as a result, the latest figures show this may be by as little as 5% for normal commuters on weekdays⁶. We expect to have clear facts at our disposal, weigh up the risks and make our own decisions accordingly.

Consumers understand zero risk is impossible. Indeed, people understand that an obsessive approach to eliminate risk will also thwart positive outcomes. There is a price to be paid for excessive precaution. Aspirin is one example of where future benefits were not predictable – the original drug had considerable adverse side effects and would be unlikely to obtain a licence today had the hypothetical risks been weighed against hypothetical benefits. However, benefits have been enormous – apart from pain relief, aspirin is used effectively in relation to cancer, heart disease and prevention of deep vein thrombosis.

Encouraging a potential backlash

Recently, David Hart, Secretary of the National Association of Head Teachers, stated that 'we are in great danger of wrapping our children in cotton wool to such an extent that eventually they will be suffocated'⁷.

This is one sign of a backlash against the nonsensical use of the precautionary principle. One recent example entailed officials in East Sussex banning egg boxes in a school because of concerns about a link to salmonella. Parents voiced their views that this was a ridiculous over-reaction.

⁶ BBC online www.bbc.co.uk, 4th August 2005

⁷ David Hart, NAHT secretary, quoted by BBC online www.bbc.co.uk, 2nd May 2005

A recent article in The Sun highlighted other examples, including banning children from playing with conkers. The Sun claimed it was indicative of the 'health and safety madness taking over Britain'⁸. However, in this case as in many others, it is easy to blame over-zealous officials. Actually, the culture in which it is essential to be seen to be protecting our children from harm at all costs is set by those at the very top of society. Governments and regulatory authorities are under great pressure to be seen to be doing everything in their power to protect people from perceived threats – both great and small.

If the main intention is to demonstrate that action is being taken, we can find that a preoccupation with minimal risks develops in situations where there is an obvious or easy action to take. We have seen this in the fight against cancer, where resources are diverted from tackling known major risk factors such as smoking and obesity to hypothetical risks. Millions of consumers may benefit from a product, but if one of its ingredients has been linked to cancer (even in a different context or unproven situation) it is all too easy to call for a ban to be seen to be acting in consumers' interests.

We would encourage consumers to challenge this type of abuse of the precautionary principle. People are good at weighing up risks and do not want or need every decision to be made for them.

Authorities should guard against action based on what they think people will want to hear. We should all take responsibility for providing authoritative and open communication, and create an environment where people are able to make their own judgements about risk.



⁸ The Sun, 2nd August 2005

Sudan I

This was the most high profile food scare over the last 12 months and our research set out specifically to address consumers' attitudes concerning it. In February 2005, the Food Standards Agency (FSA) identified that Sudan I – a dye illegal for food use and believed at extremely high doses to cause cancer in laboratory animals – had been used as an ingredient in a number of food products. Consequently these products were recalled from sale.

In fact, the risk to human health from consuming an affected product was extremely low and toxicologists were able to explain the reasons why. Several experts put it into context: Mick Hume (editor of online publication Spiked) claimed that 'if you ate a supermarket full of the blacklisted products, there is no evidence that it would give you cancer'⁹ and Alan Boobis of Imperial College London calculated that eating some Sudan I in processed foods would involve a health risk roughly equivalent to smoking a single cigarette.¹⁰

Alarmist media coverage claimed to be on the side of the consumer, demanding evidence that the FSA was not placing the profits of the food industry before

health. However, our research suggests that people did understand the risk to health was very low:

- 39% would not be afraid of developing cancer as a result of consuming an affected product
- A further 39% would have been a little afraid
- Only 3% would have been very afraid.

See fig.4.

The reasons for this lack of concern included the sensationalist nature of the media (40% agreed). However, the most common reason was that people understood that it is the dose that makes the poison, with 65% saying they were not concerned because they do not consume sufficient amounts of the products. Days after the scare, a letter to the Herald newspaper from one consumer reflected these views: 'Is it just me or is the fuss created over the recent Sudan I food scare a bit bizarre when you put it in context?''¹¹

The long-term effects of the scare are more concerning because they relate to the constant undermining of our natural ability to interpret risk. We would suggest this is seen in this case study in two ways.

Firstly, there was damage caused to the FSA's credibility and to that of other

⁹ *Sudan I: a Pot Noodle of a Panic*, from Mick Hume's notebook in The Times, 25th February 2005

¹⁰ Alan Boobis, quoted in *Sudan I: a Pot Noodle of a Panic*, from Mick Hume's notebook in The Times, 25th February 2005

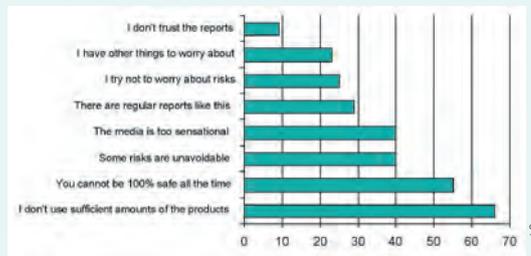
¹¹ Letter to the editor; The Herald, 23rd February 2005

regulatory and expert bodies by association. It has been suggested that the FSA was particularly worried about losing a position of growing public trust and so responded by anticipating how it thought consumers would react. It attempted to show it could act in the name of precaution to restore public confidence – and yet achieved the opposite. Dr Elizabeth Whelan, President of the American Council on Science and Health, suggested that: 'Instead of informing consumers that the risk was purely hypothetical, the FSA hyped it up, recommending that consumers avoid eating any food known to be contaminated'¹². The media perpetuated this lack of confidence in the FSA, with the Daily Mail calling it a 'watchdog with no bark and no bite'.¹³

Secondly, it contributed to the general impression that we are not in control of what we eat. The danger is that we start to believe it is impossible to trust the processes by which our food is produced. The consequence is a continued decline of trust in authorities and safety assessments and the creation of a society in which people feel powerless.

Today we are facing a crisis of confidence in society's selected scientific experts. At the same time we are more conscious of the everyday risks we are told we face to our health and happiness. This is demonstrated at one end of the spectrum by high profile health scares like GM foods, BSE and MMR, through to scientific studies we hear quoted daily. One morning we are told not to drink coffee (caffeine is dangerous) or red wine (can cause cancer). The next day we read that caffeine helps our memory and concentration while red wine is shown to prevent heart disease. Why has society become so concerned with risks so obviously and repeatedly exaggerated?

Fig.4: Sudan I – why would you not be afraid of developing cancer after consuming an affected product?



Base: All those who said they were not afraid (1770)
Source: YouGov Survey 2005

¹² The Grocer magazine, 28th May 2005

¹³ Daily Mail, 21st February 2005

CHAPTER THREE – MAKING SENSE OF INFORMATION

Individual responsibility for risk assessment requires a climate in which we are able to make sense of the right information. This is not easy to achieve. People often expect to be able to skim information to receive top-line arguments. The issue for our industry and others is that science and other complex areas take time and effort to master. Rather than sensationalise or trivialise, we need to explain the complexity and the need for measured, expert judgment of complex information.

However, there are some steps we can take to ensure people have the right tools and information to put risk into perspective and to ensure those in charge take account of our views.

- Decision-makers must ensure they understand the true opinions of consumers and recognise that the public's view is not always represented by the media.
- Those who deliver information to consumers – especially the media – need to make the effort to understand and interpret subjects or sources properly to avoid flawed preconceptions of what the public needs.

- Scientists and industry should look closely at the perception of science and how concepts could be communicated more effectively (this last point will be covered in chapter four).

A true reflection of consumer views?

Decision-makers must recognise that media coverage does not always represent the public's view. Pressure to carry out further research sparked by sensationalist media coverage has a significant and negative impact. Lord Dick Taverne, founder of Sense About Science (a group advancing science education and promoting public understanding of scientific research), makes the point that 'far from restoring public confidence, treating unfounded risks seriously is more likely to confirm public apprehensions that the risks are real'.¹⁴

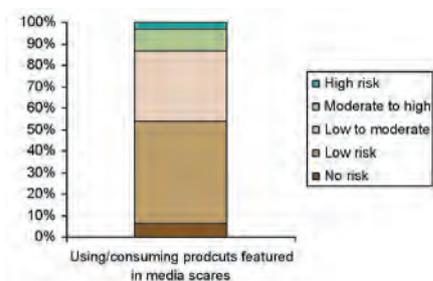
The media claim to champion the interests of consumers: providing new information and claiming to reflect consumers' opinions. Editors will often look to consumer affairs correspondents for the stories which will attract readers, increase circulations and build their own newspaper brands.

¹⁴ Dick Taverne, *The March of Unreason: Science, Democracy and the New Fundamentalism*, Oxford University Press, 2005, p207

But how much do these scare stories actually reflect the views of their readers? Media coverage can sometimes give the impression that it represents a population living with widespread anxiety. Our research suggests this is not true. While stories may be seized on by journalists as serious concerns, they may equally be dismissed by their readers. See Fig.5. People are generally sceptical about what they read in the newspapers and journalists regularly score poorly in trust surveys. When we asked people why they felt there was a low risk attached to using or consuming products featured in media scare stories, 41% said that 'there are regular reports like this' and 49% said that 'the media is too sensational'. See Fig.6.

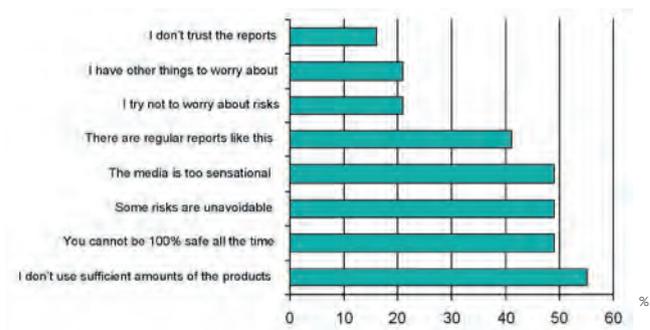
This is not to say that the public is disinterested in these types of stories. All of us have a natural interest in issues which affect our health. At the same time we relish the elements of scandal, blame and conspiracy. But it does not mean that these stories necessarily reflect our personal views.

Fig.5: How would you rate the risk to yourself of using/consuming products featured in media reports you have seen/heard?



Base: All respondents who have seen/heard media reports (1118)
Source: YouGov Survey 2005

Fig.6: Why do you not rate the products featured in the media reports you have seen/heard as high risk?



Base: All respondents who said there was not a high or moderate to high risk in Fig.4 (949)
Source: YouGov Survey 2005

The media's interpretation

Journalists interpreting research findings should ensure they apply the same rigour to science and health stories as to economic and political stories. This includes a closer examination of sources of information – and there cannot be a simple line drawn between those with and without 'vested interests'. Some NGOs and consumer groups claim to be representing consumers' opinions but this does not mean we should accept they speak for everyone.

It is rare that advice to adopt the precautionary principle is deemed to be irresponsible, whereas it is often difficult to argue the other side. As John Adams, Emeritus, Professor at University College London, puts it: 'an assurance that something is safe is almost taken as evidence that there must be a cover-up going on'¹⁵. This has, at times, led to scepticism of industry in situations where the motives of all groups deserve close scrutiny. A scare story may be given greater prominence because it comes from a seemingly neutral source.

Greater commitment to co-operation

Part of the answer to tackling this issue is for greater openness amongst industry, academics, NGOs and governments. Sharing research findings and providing the forum for early discussion of these findings is in the public interest. It should allow for new research to be presented at the right time to consumers through the media, when meaningful conclusions can be drawn, rather than in an alarmist way following a press release where the intent sometimes seems to be aimed more at publicity than education.

¹⁵ John Adams, Professor of Geography, University College London quoted in New Statesman, 20 June 2005

A recent example concerns triclosan, an important antibacterial agent used in some oral and personal care products. Environmental scientists from the Virginia Polytechnic and State University in the USA published research which suggested that triclosan can react with chlorine in tap water to liberate chloroform which in turn leads to a cancer risk. It is true that triclosan can react with chlorine, but only when excess chlorine is present, as in the water treatment processing plant. The reaction cannot take place in tap water:

Following a press release, the media splashed a story reporting a cancer risk from triclosan-containing toothpaste. However, when challenged about the media impact of the press release, the researcher admitted 'the wording in retrospect in the press release is a little bit strong.' He went on to say he did not intend anyone to conclude triclosan is unsafe and talked of 'jumping to conclusions' and 'overreaction'¹⁶.

Journalists writing on health or science in the national press rarely have scientific qualifications. Indeed, many people working for NGOs do not have a scientific background. Therefore, it is important that the interpretations of people without relevant expertise are not given undue prominence. Scientific research, by its nature, is often incomplete or inconclusive, and scientists need to work hard to ensure that it is presented in context and at the right time to enable them to draw meaningful conclusions for consumers. The perceptions consumers' have of science is discussed in the next chapter:

¹⁶ Peter Vikesland, quoted in The Roanoke Times, 19 April 2005

CHAPTER FOUR – SCIENCE AND RISKS

Belief in science

It is widely accepted that public confidence in science has decreased in recent years. It can be argued that scientists are suffering from a perception that they allowed to grow in previous decades: that is that science answers everything, eliminates uncertainty and creates guarantees. With greater access to information and the erosion of deference, the unswerving belief in the certainty of science has been eroded, leaving society disappointed and questioning. As with everything except taxation and death, there is a strong absence of certainty in science which people find difficult to accept.

Furthermore, there is also a minority perception, often perpetuated by campaigning organisations, that science is now more complex than ever; maverick and out of control. The argument follows that there are not enough controls on scientific development and regulators are failing to protect consumers from unknown threats. This leads to an undermining of public trust in sound science, and we have explored three aspects of this below.

Pressure for 'democratic science'

The negative view of science puts pressure on authorities, who need to be seen to be in control of scientific developments. We have seen examples of authorities bowing to pressure to somehow make science more 'democratic', with a high degree of emphasis on public involvement in shaping scientific direction. Currently these debates are being held in the field of nanotechnology, which is seen by some to be threatening. However, exact future benefits are difficult to predict, making it difficult and unhelpful for the public to have a disproportionate impact on its development.

Calls for public involvement are always likely to be popular. However, science is not a democratic discipline. It takes expertise to make decisions about where time and resource should be focused. Too often, scare stories in the press can lead to clamours for further research in areas that have already been thoroughly investigated. Of course, fresh evidence should be properly considered but we should not allow this to divert funds from necessary research into known health risks. Calls for democratic science continue to undermine trust in experts to the wider detriment of society.

Calls for greater regulation

Linked to this are calls for greater regulation. There is already rigorous regulation which protects consumers by ensuring that products are assessed for safety before they go on the market. It is important this is regularly reviewed and adapted. Rather than repeated calls for additional regulation, we would like to see consistent enforcement of existing legislation. We were encouraged to find that 62% of people trusted the UK regulatory authorities to ensure they have the right level of protection when using or consuming everyday products. However, there is still a significant minority whose trust is being eroded. Industries such as ours need to work harder to demonstrate the daily process of safety assessment and ensure we maintain confidence in this.

Taking scientific research out of context

Finally, trust in science is undermined by the way research is often misinterpreted when presented to the public. Much distrust of science centres on the perceived threat of 'toxic chemicals'. This is taken to be a man-made threat to our health (even though there are plenty of unsafe natural chemicals) owing to a supposed increased exposure to chemicals in our daily lives.

These ideas are the basis for increasingly widespread campaigns by consumer activists, for example against products we use every day. A range of different allegations are mixed to create a picture of 'toxic chemicals' out of control and threatening public health. Dr Paula Baillie-Hamilton, for example, claims that 'with chemical production continuing to rise to ever greater heights, no-one now can count him or herself safe'. She also provides a whole chapter of advice which she claims would minimise the risks from these 'toxic chemicals' which includes getting air filters for the car, steering clear of streets where they use pesticides to control weeds and avoiding chlorinated swimming pools, as well as a whole checklist of garden, office, bathroom and kitchen purchases that should also be avoided!¹⁷

These simplistic arguments are not supported by toxicology experts. The term 'cocktail effect' is often used by campaigners to suggest researchers are unaware of the possibility of interaction between substances whilst of course neglecting to state that our whole diet is one huge cocktail of individual chemicals. The pejorative use of the term implies that all such interactions increase toxicity whereas many interactions actually reduce toxicity. In practice, such interactions are widely studied as part of safety assessment programmes for foods, medicines and cosmetics.

¹⁷ Dr Paula Baillie-Hamilton, *Stop the 21st Century Killing You*, Vermilion, 2005, p.30

Other groups have produced similar lists of things to avoid for a 'safe' existence. For people to follow instructions such as these is a sure recipe for a life of constant worry about the health of themselves and their families.

Risk versus hazard

What is often ignored in these arguments is the fundamental difference between risk and hazard. Every chemical should be assessed in the context of how it is used or consumed and not on its intrinsic qualities. In the 16th century, Paracelsus said that 'all substances are poisonous: there are none that are not. The dose alone differentiates a poison from remedy'.

Our research suggests that many people intuitively recognise this. Of people who believed that scares were low or no risk, 55% said they were not at risk because 'I don't use sufficient amounts of the products'.

Intuitively people understand the concept of consumption in moderation, even if they choose to ignore it. This is particularly true when it comes to food. A recent survey found that the British public is more sensible about food issues than is sometimes imagined; we understand what makes a balanced diet and don't think that the answer to healthy eating is more information on nutrition. People want to make their own choices, and 90% think it should be parents rather than the government or food industry who decide the best food to feed their children.

We have an important opportunity to improve consumers perception of chemicals with the forthcoming REACH legislation. Under the Registration, Evaluation and Authorisation of Chemicals, around 30,000 chemicals in everyday use will be tested and subjected to a risk assessment. Our industry welcomes the principle of REACH but we must take a common sense approach to putting it into practice. A substance can be intrinsically hazardous – indeed most substances (including water) are – but this does not mean they pose a risk in the way they are used. Many of the substances due to be tested have already been in use safely for many years, including alcohol for example (or more precisely, ethanol), which is of major importance to both the chemicals industry and cosmetics industry but which has been fermented and consumed for thousands of years.

We should focus attention on chemicals where we know there are more serious risks and prioritise the assessments accordingly. Modern society cannot function without chemicals. The chemicals industry wants a system of regulatory oversight that is effective and is seen to be effective. It is important to get the public communication of this piece of legislation right. If we do not, we will present the false impression that there are millions of unchecked chemicals out there posing a serious threat to our health.

Communicating science

The public do not want more information but information they can trust and understand. This is the point we made clearly in the first white paper: We are not suggesting everyone should be scientific experts. However, our research shows that people are capable of understanding concepts around risk and are good at assessing risks in their daily routine. We would argue that consumers are receptive to making sense of concepts such as risk versus hazard, if explained in the right way.

Companies making consumer goods must ensure they play their part in this. This means that the language used to sell to consumers should avoid undermining the scientific credibility underpinning the development of products. Industry need not be explaining the science behind each consumer product, but it can do as much as possible to ensure information about ingredients and safety assessments is open and transparent. We need to build trust in scientific and regulatory processes.

Finally, if scientists are open and willing to discuss their work, the media and NGOs should also take time to interpret it properly and consider how and when it is communicated to the general public.



*‘Science and innovation are critical not only to the success of British industry
but also the quality of our lives’*

Lord Sainsbury, Parliamentary Under-Secretary of State for Science and Innovation¹⁸

The CTPA can play a role in explaining some of the processes involved in the scientific development of the cosmetic, toiletry and perfumery industry. We hope to be able to show, in consumer-friendly language, some of the concepts behind popular misconceptions in the media. Below are some examples:

Dose, dosage and exposure

There is sometimes confusion over the scientific language of dose, dosage and exposure. Things can appear more threatening than they really are if you use units the general public do not understand, such as parts per billion (ppb). The number can sound high if the units are not familiar; rather like expressing the distance from London to Brighton in cubits (it’s over 200,000 cubits, which sounds much further than 52 miles!). As the popular science writer, John Emsley, has explained, several ppb of a chemical in a cosmetic can sound life threatening, yet in terms of time, one ppb is the equivalent of one second in 30 years – not much!¹⁹

Cause and effect

Much research is based on investigating links between use of products and ill-health in humans. Associations can be shown but, even if they are statistically significant, not all associations are causally linked. For example, reading ability and shoe size in schoolchildren are positively associated. This does not mean that reading makes your feet grow or that having big feet helps you to read; simply that as children grow, their feet get bigger and their reading has improved with time. The two are linked, but not causal. Other real associations include the birth rate in Central Europe and the frequency of storks’ nests, and the increase in global warming and decrease in piracy on the high seas. Interesting associations – one positive and one negative – but no-one would suspect there is any causal link. Finding an association is one thing; determining causality is quite another.

¹⁸ Lord Sainsbury of Turville, Speech to the 5th Anniversary of the Science Council, July 2005

¹⁹ John Emsley, speech to the CTPA Annual Conference, October 2004

Peer review

Peer review is a process in which scientists review and criticise each others' work before they make it public. Unless they are peer reviewed, research findings will not be given credence by other scientists. It is an important quality control check. However, some scientists do sometimes by-pass this peer review process and take research straight to the media, which can result in avoidable alarmist headlines. One should ask why a reputable scientist would wish to avoid expert scrutiny of their work. Of course, peer review does not guarantee that the research is correct, only that the work was done to an acceptable standard and presented in an objective manner. Spurious results are always possible and new findings are only accepted once the work can be repeated by other scientists. The reproducibility of findings is crucial to their acceptance by the scientific community and their eventual acceptance as scientific fact.



CONCLUSION

In tackling our concerns about putting risk into perspective, we have identified three areas for debate.

Responsibility must be taken to ensure the right information is presented to people in a balanced way and at the right time so that they can put risks into perspective themselves. To do this, risks should always be put into the context of normal usage or consumption and allowing people to exercise their own natural common sense. We should not undermine this by trying to provide black and white answers where they do not exist. As far as possible, we must provide 'plain English' explanations, but people must also accept that in science there will always be grey areas.

At the same time, consumers delegate their decisions to trusted companies and brands because not everyone can be a scientific expert. Therefore, it is essential that we build trust in the scientific processes and in regulatory authorities. This can be achieved through a commitment to openness and transparency, but also by taking opportunities to provide authoritative and expert advice. We should not undermine science through misinterpretation or miscommunication.

Finally, we should encourage a use of evidence-based reasoning over an over-reliance on the precautionary principle. When originally proposed, the precautionary principle was intended to ensure that lack of full scientific data should not be used as an excuse for inactivity if there was a risk of severe or long-lasting harm to man or the environment.

In some current contexts, it has been subverted to mean that, unless you can prove no risk (and you cannot), you should not use the substance. We should avoid a situation where minimal risks are the subject of disproportionate scrutiny leading to the diversion of attention away from tackling bigger issues.

We believe the debate should focus on how we can work with our peers in industry, government, NGOs, academia and the media to make progress in these three areas of providing accurate information, building trust and encouraging common sense. By doing this, we hope to create an environment in which people can effectively manage risk by putting it into perspective.

FURTHER READING

Baillie-Hamilton, Dr Paula (2005) *Stop the 21st Century Killing You*, Vermilion

Brignell, John (2004) *The Epidemiologists: Have They Got Scares for You*, Brignell Associates

Bristow, Jennie (11th November 2003) UK public: 'Let parents decide what to feed their kids', article on spiked online: www.spiked-online.com

Butterworth, Trevor (27th June 2005) *A Health Scare that Stinks? Should you be worried about phthalates in cosmetics and toys?* article on www.stats.org

Durodié, Bill (May 2004) *Panic in the Streets*, New Humanist

Durodié, Bill (29th November 2004) *Toxic Policies*, The Parliament Magazine p.39-40

Emsley, John (2004) *Vanity, Vitality and Virility: The Science behind the Products You Love to Buy*, Oxford University Press

Furedi, Frank (2005) *Culture of Fear: Risk taking and the morality of low expectation*, Continuum

Guldberg, Helene (27th January 2004) *Fearing the Unknown*, article on spiked online

National Consumer Council (October 2002) *Running Risks: Summary of NCC Research into Consumers' Views on Risk*

New Statesman (20th June 2005) special supplement: *Fears, Phobias and the Facts: How Risky is the Real World?*

Taverne, Dick (2005) *The March of Unreason: Science, Democracy, and the New Fundamentalism*, Oxford University Press

Timbrell, John (2005) *The Poison Paradox*, Oxford University Press

Willis, Rebecca & Wilsdon, James (2004) *See-through Science: Why Public Engagement Needs to Move Upstream*, Demos

About the CTPA

The CTPA is the trade association for the UK cosmetic, toiletry and perfumery industry. Members include companies of all sizes involved in sourcing of ingredients, manufacturing, packaging, labelling and distribution.

For further information contact

The Cosmetic Toiletry & Perfumery Association (CTPA) Limited,
Josaron House, 5-7 John Princes Street, LONDON W1G 0JN

Tel: +44 (0)20 7491 8891
Fax: +44 (0)20 7493 8061
Email: info@ctpa.org.uk
Website: www.ctpa.org.uk

