

Mobile Phones and Service Stations: Rumour, Risk and Precaution

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Trust, precaution and rumour

The apparent erosion of public trust has become a defining feature of our age (Fukuyama, 1996; Sztompka, 2000). Collapse of trust in the political process is the subject of intellectual concern and reaction (Warren, 1999; Bentley, 2005). Another important focus for analysis and response to mistrust is science and technology risk management. Sociology is at the forefront of problematizing science and technology risk management, proposing a renegotiation of the relationship between science, citizens and policy (Irwin, 1995; Irwin and Wynne, 1996; Wynne, 2000; Stilgoe, Wilsdon and Wynne, 2005). Science is admonished in the now influential sociological critique for failing to communicate the uncertainty that is central to their endeavours, instead continuing to insist upon a 'top-down' process of science communication. Science is presented as having unreflectively brought about a scientific and technological revolution without regard for the consequences that the resulting 'risk society' is now struggling to come to terms with (Beck, 1992, 1995). An influential review of specific examples of 20th-century scientific and technological innovations argues the 'late lessons' that can be drawn are the failure to heed 'early warnings' that could have been detected about potentially damaging impacts (Harremoës et al., 2002). A new, precautionary approach is urged – one that can avoid the mistakes of the past.

An important focus and underpinning for the new direction in science and technology risk management is the precautionary principle. It is concerned with new science and technology that involves considerable uncertainty and may have long-term, significant, but perhaps as yet little understood human and environmental impacts (O'Riordan and Cameron, 1994; Raffensperger and Tickner, 1999; Harremoës et al., 2002). Varying degrees of precaution are advocated in response that involve not waiting for confirmation of possible dangers before warning the public, encouraging cautious regulatory control, or even blocking the introduction of

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new technologies. These perspectives have now been absorbed by influential mainstream science governance institutions (House of Lords, 2000; Gibson and Kass, 2001). Some political formulations advocating a new precautionary approach explicitly envisage an end product of a 'science people can trust' (Byers, 2001). Particularly in the light of the BSE/vCJD¹ experience and its official interpretation (BSE Inquiry, 2000), a precautionary approach has become evident in the management of science and technology issues. Aspects of the controversies over genetically modified (GM) crops and mobile phone radiation saw experimentation with the new precautionary approach. The Stewart Inquiry into the mobile phone controversy recommended a precautionary response, despite acknowledgement that 'the balance of evidence does not suggest that mobile phone technologies put the health of the general population . . . at risk' (IEGMP, 2000: iii). The existence of some scientific uncertainty was considered sufficient to recommend precaution in the new British climate of scientific risk governance.

A number of questions are posed by the application of a precautionary approach. As a response to uncertainty, precaution is principally concerned to recognize rather than clarify uncertainty. There is, as yet, no evidence that the precautionary approach to mobile phone fears, for example, raised awareness of a potentially significant public hazard, successfully managed public fears about a new technology, or began the process of rebuilding trust in science. On the contrary there are some grounds for exploring the possibility of unintended problematic consequences. Risk perception research has indicated how basic informational actions taken in relation to related unseen hypothetical hazards may arouse and confirm rather than alleviate anxiety (Morgan et al., 1985; MacGregor, Slovic and Morgan, 1994; Wiedemann and Schütz, 2005). More recently, Burgess (2004) suggests that the precautionary response to mobile phone radiation concerns in the UK significantly contributed toward sustaining anti-mobile-mast campaigners' activities; concerns that were likely to otherwise have dissipated. Precautionary measures posit a problem, beyond simple uncertainty, that has necessitated action. A sense of hazard may be confirmed by precautionary measures on the assumption that 'there is no smoke without fire'. Further, the message that 'we just don't know, but precaution could be appropriate' may not satisfy an aroused concern that then seeks alternative answers as to what lies behind the taking of preventative action. The suspicion that 'they may know more than they're telling us' may be encouraged by state measures that are actually no more than a new policy accompanying a general emphasis upon uncertainty. Restrictions, or simply precautionary recommendations, that lack any clearly defined basis may create an 'information vacuum' that could be filled by rumour. Measures taken as precautions rather than to protect against a defined hazard, may have the potential to encourage the creation or seeking out of rumours to explain why action has been taken that lacks any clear basis in scientific knowledge or everyday experience.

Regulations, restrictions and warnings that lack a clear basis in substantiated risk are not unique to the precautionary approach. In the legal sphere the perceived possibilities of litigation, not bound by more conventional demands of evidence and proof of causation, have led to the reorganization of professional behaviour (Brown, 2002; Better Regulation Taskforce, 2004). In particular areas, such as new contraceptives, there is a history of product liability claims leading to product with-

drawal despite the absence of significant evidence of harm (Viscusi, 1988; Huber and Litan, 1991; Howells, 1993). The American notion of 'phantom' risk describes unsubstantiated claims of harm from a particular product that have little objective basis, but have nonetheless been sustained by the inference of legal accusation and the peculiarities of legal procedure (Huber, 1990; Foster, Bernstein and Huber, 1999). The 'electrosmog' generated by mobile phones is one such 'phantom risk' animated by some public perception and the possibility of legal action (Brauner, 1996). Handsets have been the subject of American litigation claiming they have caused cancers since the early 1990s; none has been successful and nor are they likely to be, but they have successfully associated this technology with an uncertain sense of hazard and stigma (Flynn, Slovic and Kunreuther, 2001).

A variety of impulses might account for fundamentally precautionary approaches toward technologies, products and services. Companies and industries may initiate institutional safety drives because of other experiences that elevate a focus on safety, perceived consumer pressure, or through compulsion by state regulators. British supermarkets operate a precautionary approach with regard to health-based customer complaint, for example. One industry expert explained how 'the customer view will always beat science', due to the fear of losing customers in a highly competitive environment shaped by consumer and NGO² pressure. Consequently, 'If there's a question about a raw material, they tend to adopt the precautionary approach and just get rid of it' (Kirkwood, 2004: 14). Under such circumstances, it is possible that rumours as much as real problems might lead to product withdrawal and an apparent confirmation of hazard.

Rumours have been studied since the mid-20th century, as histories of the concept illustrate (Neubauer, 1999; Donovan, 2007; Bordia and DiFonzo, 2002). Rumour is defined as 'information spread without secure standards of evidence' (Fine and Turner, 2001: 18). Focusing upon the mode of transmission refines rumours as: 'distinguished by being primarily disseminated outside the auspices of formal media or organizational authority' (Donovan, 2007: 61). Urban legends are a subgenre of rumour; 'apocryphal contemporary stories, told as true but incorporating traditional motifs, and usually attributed to a friend of a friend' (Brunvand, 1999: 29). Typically, they express anxiety about transition to modern life, and often suggest human baseness (Best and Horiuchi, 1985: 492). Rumours are spread by 'word of mouth', but definitional boundaries should, arguably, be extended to the, at least partially, informal realm of the internet (Donovan, 2003). The uncertain status of information spread via the internet and the character of the technology adds to its rumour-creating potential (Grazioli and Jarvenpaa, 2000; Donovan, 2003). The internet allows the elevation of rumours over medical authority, facilitating the spread of deceptive messages, including specifically those relating to 'exploding phones' at petrol stations (Atkinson, 2001; Grazioli and Carrell, 2002; Kassirer and Angell, 1995).

Donovan (2002, 2007) argues rumour is a: 'social practice and purposive activity and not just a vessel for a text', locating their contemporary resonance in the erosion of traditional authority. Rumour flourished in the past at times when authority was lost or suspended. Wartime, for example, creates both a lack of reliable information, and a heightened need for it at the same time. Rumours have traditionally filled this kind of gap, and they can continue to flourish during moments of dislocation

(Wright and Nerlich, 2004). The nature of rumour since the late 20th century also appears to have been changing. Whereas rumours in the past were often directed against clearly defined groups such as Jews, they now tend to connect with a more individualized consciousness, and have a less targeted focus (Donovan, 2002, 2007). In so far as they engage with clearly defined anxieties, it is with more personal than political sensibilities such as the welfare of children (Best and Horiuchi, 1985). Rather than targeting minorities, a large number of contemporary rumours themselves allege the targeting of minorities via the products of large companies (Nolen, 1999; Fine and Turner, 2001; DiFonzo and Bordia, 2000, 2002). Studies highlight the difficulty of both controlling rumours within organizations, and being able to effectively deny rumours externally (Koenig, 1985; DiFonzo and Bordia, 2000, 2002). A consensus regards corporate refusal to confront rumours as likely to lead to their proliferation (Fine and Turner, 2001: 144).

An abundance of information sources today, even during wartime, has not led to the end of rumour. To an extent, a previous lack of information has been replaced by a difficulty in distinguishing the credibility of many different, often conflicting, sources. With the erosion of institutional trust has come an uncertainty created by now competing sources of authority. New 'alternative' claims makers have made a considerable impact, particularly in health and science-related concerns such as over the MMR (measles, mumps, rubella) vaccine, and in this context rumours have flourished (Fitzpatrick, 2004; Horton, 2004). Far from being a phenomenon confined to early or classical modernity, there is a sense in which rumour has 'come of age' in a mistrustful late-modern world dominated by uncertainty.

In approaching one such contemporary rumour a social constructionist approach is adopted; the aim being to: 'shift the focus of analysis from the causes of objective social conditions to the processes by which members of a society define those conditions as problems' (Spector and Kitsuse, 1987: 59). Whilst being concerned with how actors construct problems, the objective status of claims is not irrelevant. In Best and Horiuchi's influential study (1985), the absence of any recorded instance of a razor blade being placed maliciously inside an apple provided the starting-point for investigation of the 'trick or treat' myth, and its classification as a rumour. This contextual constructionist approach allows an understanding of the extent to which claims that depend on a belief that hazards are real may be driven principally by wider anxieties or organizational imperatives (Best, 1995).

Restrictions on mobile phone use at petrol stations

This paper is concerned with the widely circulated tale that mobile phone sparks have ignited petroleum fumes and led to explosions at petrol stations. The connection to petrol station fires is one of a number of ways in which the mobile phone presents itself to us as potentially dangerous; as a stigmatized technology (Flynn, Slovic and Kunreuther, 2001). Despite its success, the mobile has not been immune to the qualified enthusiasm that often greets new technologies and innovations (Bauer, 1995). Within this ambiguity, claims makers continue to present the mobile phone as a health concern through association with disease (Carlo and Schram, 2001;

Burgess, 2004). There are other ways in which mobile phone use is treated that pose questions about their effects. Their usage is restricted on board airplanes and in hospitals on the assumption that they might interfere with equipment. Yet even among relevant professionals, there is little understanding of the scope for problems that might arise at hospitals and on board aircraft with mobile phone use, or whether incidents have actually occurred. Some doctors regard the restriction as itself potentially dangerous: currently they are often forced to use a paging system that obliges them to leave consultations and find a fixed-line phone to respond to the enquiry. Legitimizing such imperatives in apparently certain and specific external justifications can draw attention to the uncertainty of the basis for restriction. The only prohibition backed by substantial if still contested research is that of distraction when driving and speaking on a mobile phone at the same time (Lissy et al., 2000; UK Road Transport Research Laboratory, 2002).

Whatever its plausibility, the association of the mobile phone with petrol station fires combines elements common to the unclear hospital and airline restrictions, with additional aspects related to the dissemination of rumours and urban legends. Unlike the ban in aircraft or hospitals, restrictions imposed at petrol stations are bolstered by stories of alleged actual occurrences of explosions and consequent injuries that have entered the public domain. Unlike the petrol station story, the alleged capacity of mobile phones to damage health is associated with some scientific disagreement and uncertainty, and was advanced through formal media reporting and science-based claims-maker activity (Carlo and Schram, 2001). The mobile phone has been problematized at the petrol station through the internet and the word-of-mouth means characteristic of rumour dissemination, and indirectly confirmed by usage restrictions.

In a number of countries the use of mobile phones is restricted at petrol stations because of their purported capacity to ignite fuel vapour. In the UK, this alleged hazard is familiar to many people through the experience of being told to desist from usage by a station cashier. Signs prohibiting mobile use are displayed across the UK, and are also seen in other countries. Some public figures continue to explicitly claim that fires have been caused by mobiles (Silva, 2005). Yet there has not been a single verified incident of such an occurrence. A leading authority on fire and petroleum, Richard Coates, group fire adviser for BP, has investigated the incidents worldwide where a mobile phone was alleged to have been responsible (Coates, 2003). He has found no evidence of such a connection, instead concluding that the fires were caused by human body static. Further, fires caused by mobile phone sparks are unlikely in the future according to scientific research that has demonstrated the fundamental implausibility of such an occurrence (EFAA, 1999; University of Oklahoma, 2001; Institute of Petroleum, 2003; IEEE Spectrum, 2004). The internationally authoritative Institute of Electrical and Electronics Engineers states unequivocally as a consensus of its relevant committee that 'Mobile phones pose no petrol station hazard' (IEEE Spectrum, 2004).

The restriction on mobile usage at the forecourt has its origins and is most systematically applied in the UK. Early restrictions were a response to the appearance of the first analogue phones, coming into an environment (directly around the pump) officially deemed 'hazardous'. The ban was not based upon any scientific

research, but was an instinctively precautionary response from those charged with responsibility for safety at British service stations. The bulky appearance of the early 'brick' phones may have played a role in arousing regulatory suspicion, seeming to physically confirm that this was a relatively powerful device worthy of concern. The timing of the mobile's arrival in the later 1980s also made it a target for UK safety officers. The mobile phone appeared at the time of a concerted safety drive within all sections of the oil industry to minimize, even eliminate, risk that followed the Piper Alpha oil platform tragedy of 1988. The safety imperative was embedded beyond the directly hazardous 'front line' of the oil industry at the rigs to encompass even company offices where, for example, using stairs without using the handrail became a disciplinary offence. In effect, the very different environments of the petrol station, the administrative office and the oilrig are being treated in a similar, highly risk-averse manner.

It was possible in this climate of systematic risk reduction for the restriction on mobile phone use to be introduced without challenge. Fuel companies did not want to be seen pressurizing fire-safety officers by contesting the restriction. In an increasingly safety-dominated environment, attempts to downgrade an alleged hazard could be seen as irresponsible. Even as the mobile phone quickly evolved from a limited number of bulky devices, for which restriction was hardly a major problem, to the mass use of small hand-held sets with greatly reduced battery size and new battery technology, the restriction attracted little attention. Particularly as it had no dramatic effect, this hastily evolved and adopted restriction was not questioned. Meanwhile, mobile phone manufacturers printed their own warnings in phone manuals, as in this example from the Ericsson T66:

Turn off your mobile phone when in any area with a potentially explosive atmosphere. It is rare, but your mobile phone or its accessories could generate sparks. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death. Areas with a potentially explosive atmosphere are often, but not always, clearly marked. They include fuelling in areas such as petrol stations . . .

Such disclaimers appear to have been a precaution anticipatory of possible litigation, prompted by awareness of the new UK restrictions. By the later 1990s, however, recognition developed that it was unhelpful for manufacturers to, in effect, play a role in further stigmatizing mobile phones as potentially dangerous. This recognition developed as research indicated increasingly clearly that this was a hypothetical hazard (EFAA, 1999; University of Oklahoma, 2001; Institute of Petroleum, 2003; IEEE Spectrum, 2004).

The official UK regulatory policy is now that potential distraction whilst refueling and speaking on a mobile phone at the same time is the principal danger of mobiles at petrol stations (Hela Lacors Petel, 2004), and mobile phone companies have begun to publicize this recognition:

Q: Why do some petrol stations ask me to turn off my mobile?

A: It's distracting. Mobile phones won't cause a fire or explosion but can be distracting when filling a vehicle with highly flammable petrol. This is why some petrol stations have signs asking customers not to use mobiles.

(Vodafone, 2004)

Yet their use continues to be restricted in the same way at the petrol station forecourt by the oil companies.

Rumours on the internet and at the service station

Reviewing the many uncorroborated reports of such incidents, rumour website Snopes.com concluded that it was a classic contemporary rumour (Mikkelson, 2002). Internet 'e-rumours' began in the 1990s, based largely on references to newspaper reports from the Far East (Cameron, 1993; Thomas, 1997; *The [Singapore] Straits Times*, 1997). Following a report carried by the *Bangkok Post* in 1999, the story began to be taken seriously and was circulated around the internet. The article attributed the story to Shell, and reported supposed incidents in Indonesia and Australia where a person was pumping petroleum while on their mobile phone. The phone allegedly generated sparks, which caused petrol vapours to ignite. The report prompted an exchange of stories and led to other incidents being circulated on the internet. Typical of these is an email reproduced on the Snopes.com site in 1999. Having reported a story of an injury from an incident, the message urged readers to:

READ YOUR HANDBOOK! Mobile phone makers Motorola, Ericsson and Nokia print cautions in their user handbooks that warn against mobile phones in 'petrol stations, fuel storage sites, and chemical factories'.

The message went on to point out that oil companies were confirming the perception of danger, explaining that Exxon had begun to place warning stickers at its petroleum stations. Arguably the most widely read email calls itself a 'Safety Learning Event' and continues to be circulated on the internet. The message claims that the Shell Oil Group identified three incidents where mobile phones had ignited fumes while being answered or ringing during fuelling. Messages are subject to constant change as they are forwarded to new sites and sources. A more recent, still-circulating variant of this communication is entitled 'Subject: The dangers of static at petrol pumps':

The Shell Oil Company recently issued a warning after three incidents in which mobile phones ignited fumes during fuelling operations. In the first case, the phone was placed on the car's trunk lid during fuelling; it rang and the ensuing fire destroyed the car and the petroleum pump. In the second, an individual suffered severe burns to their face when fumes ignited as they answered a call while refuelling their car. And in the third, an individual suffered burns to the thigh and groin as fumes ignited when the phone, which was in their pocket, rang while they were fuelling their car. You should know that: Mobile Phones can ignite fuel or fumes, Mobile phones that light up when switched on or when they ring release enough energy to provide a spark for ignition.

Significant features of this message are, firstly, that it goes on to, largely accurately, describe the details of petrol station fires that were actually caused by body static, but are here blamed on mobile phones. There has actually been an increase in petrol station explosions, particularly in the USA. The source is, however, body

static generated by vehicle re-entry (something far more common in the US than elsewhere) which can ignite fuel vapour under particular conditions (Davis, 2002; Institute of Petroleum, 2003). An incident can be viewed at the Stop Static! Internet page of the Petroleum Equipment Institute. The dramatic footage shows a flame suddenly leaping into the air as a woman returns to, and touches, a pump handle. Prior to the flame shooting in the air, the woman is shown to 'latch' the pump nozzle onto the fuel tank opening, then very briefly get back into her car, before getting back out and touching the fuel pump again ready to remove it. During this process, the woman has effectively 'charged' herself sliding back into and out of the vehicle, and this charge has jumped from her body to the petroleum vapour around the tank opening, and ignited. The video clip has been circulated on the internet as dramatic proof of how mobile phones can cause explosions, even though there isn't one visibly involved. The rumour has thus been driven partly by the shifting of blame for real events from the actual culprit to a false one. In the process, the mobile phone rumour has served to distract attention from the rare but nonetheless real hazard of static-created explosions. The problem becomes circular: false allocation of blame continues, as body static remains largely unknown as an ignition source, and this ignorance leaves us with the ubiquitous and very visible mobile phone to account for otherwise inexplicable petrol-station fires.

A second significant feature of the internet message is that it purports to be written by an employee of Schlumberger, the French oil multinational. The appearance of having been sent from such an official and authoritative source lends authority to the message. A story that appears in the form of forwarded correspondence between employees of an organization 'in the know' has particularly strong credibility. They seem to combine the official authority of being close to the source, with the unofficial nature of discovering the information (a leaked memo, for example) that makes it seem all the more 'true'. It may be that the message *was* sent from an employee of Schlumberger. Despite investigation, it has not been possible to establish proof beyond anecdotal confirmation from informed observers. As has been observed in the sociology of rumour, tracing their precise origin remains a difficult and perhaps distracting exercise (Donovan, 2002, 2003). Yet it is not implausible that the message was forwarded from someone within the company; evidence does exist of other instances where oil company employees have forwarded untrue messages on this subject. The oil company environment is not inhospitable towards informal confirmations of such incidents, even if they might also refute false official confirmations that they are alleged to have made that circulate on the internet. Certainly, internet rumours about mobile phones and petrol station fires cannot simply be dismissed as the work of 'mischievous' outsiders.

Once messages enter the intranet of large organizations, they are validated and then may be forwarded as, effectively, company policy. A lack of scepticism about the claims of such messages and the speed with which they are forwarded is encouraged by the lack of knowledge within oil companies internationally about the implausibility of mobile phone-created explosions, or the documented occurrences of body static fires. In addition, there is unwillingness among oil companies to consistently challenge the rumour, because they have no clear interest in doing so. It is not their product, but that of the mobile phone manufacturers that suffers through

association with petrol-station fires. Further, an oil company perspective might only be mindful of how public awareness and understanding would lead to a questioning of the restriction, and that cashiers may not be able to prevent customers talking on their mobile phone while refueling on the comparatively unconvincing grounds that it may lead to distraction.

Another widely circulated internet rumour gained authority from its apparent source, the oil multinational Shell. Concerned at their direct implication, Shell officially refuted the hoax through a number of channels. A letter (28 February 2002) from Shell UK Oil Products insisted that:

The email [being sent around stating explosions due to the use of wireless phones at Shell stations] is from a non-Shell source and the originating email was an Internet hoax. This would indicate that the three cases being referred to are completely fictitious . . . Shell has no knowledge of any specific incident of ignition that occurred as a result of using a mobile phone on forecourts . . . Any emails to the contrary, which are currently being circulated, have not emanated from within the Shell Group and therefore do not represent our views.

The official rebuttal from Shell has made little impact upon the circulation of the rumour, however. An interesting, exotic rumour is likely to make more impact than any official denial from a large company (Koenig, 1985; DiFonzo and Bordia, 2000, 2002). In fact, it is possible that official denials may confirm some suspicions on the basis that they increase the terrain; giving the rumour the status of a commonly referenced idea. To an extent, there appears little that the company can do to allay suspicions; any action at all may have the contrary effect of confirming suspicions. However, it is difficult to clearly draw such conclusions in this instance, given the character of the corporate response. Highly formal, and apparently designed only to legally disassociate the company rather than enlighten the public, Shell's response arguably had little chance of positively impacting upon the rumour. Had the disowning been accompanied by an explanation both of the implausibility of a petrol-station fire involving a mobile phone and the actual possibility of body-static ignition, it might have been more persuasive. There is no discernible constituency for this rumour; instead one can assume a public openness to understand the restriction and associated issues. Making a clear statement on the issue remains difficult, however, when oil companies continue to maintain restrictions, apparently because of the dangers it represents.

Despite Shell's disassociation from specific incidents, unexplained restrictions and signage continue to encourage rumour. It is those charged with defending restrictions who might particularly have to draw upon rumour in the absence of being equipped to explain otherwise. Testing this hypothesis, a number of station cashiers in various parts of the UK, and working for various companies, were asked during 2004 why it was not permitted to use mobile phones. Twenty five employees at randomly chosen stations in London, Kent, Sussex and Lancaster were simply asked why the restriction was in place. The small sample size was methodologically justified simply because the only purpose was to establish whether rumour was drawn upon, not to examine its extent or character in greater detail.

The majority (17) of attendants went beyond explaining that the restriction was 'illegal' (untrue); 'company policy' (true); or simply 'what we have been instructed

to do', when further challenged to suggest that it was because of the risk of a fire being caused by a mobile phone. At a BP station in Sussex, for example, it was explained that the sign is there because mobile phones make a spark and this can cause petroleum to ignite. Asked about evidence, it was explained that employees attend a course where they are told mobile phone-induced fires have occurred. According to cashiers, other operators such as ESSO continue to provide instruction that there have been such incidents. Some employees took it upon themselves to elaborate casually upon the danger. As one exchange proceeded at a London service station:

Q: Do you know why it says to turn mobile phones off?

A: Sometimes blowing up [sic].

Q: Really?

A: Yes, sometimes, no guarantee [sic].

Another cashier explained that a spark might ignite petrol; he had heard of four or five cases where it had happened (Sainsburys, Wimbledon 2004). As in other cases, there was no precise confirmation of any incident. One interviewer in Lancaster, in the far north of Britain, reported the following reply:

'I asked the cashier why and she told me about "that poor man down south who set fire to himself with his phone".' As was pointed out, 'Round here, "down south" could be anywhere, but is a long way away!'

The comical vagueness of the geography attests to the convenient lack of detail involved in the circulation of rumour. By contrast, the most highly informed respondent was at another Sainsbury's garage in London. An unusually talkative cashier explained that the sign and the rule, which they verbally enforce, were 'rubbish' when it came to digital mobile phones but the older analogue phones did contain a sparking mechanism that could ignite petroleum fumes. Nonetheless, it was easier to have a blanket ban than to confuse customers with signs that attempted to distinguish the (now effectively nonexistent) threat from digital mobile phones, according to this individual.

Some cashiers proffered alternative explanations for the restriction, such as the possibility that the mobile phone might interfere with the station's systems, particularly cash registers. In some cases, cashiers appear to have taken it upon themselves to extend even the 'normal' enforcement based on the mobile phone rumour, with a zealous employee at a Lancaster garage instructing customers over the tannoy to desist from even looking at text messages on their phone in the forecourt vicinity! Although unusual, this response is by no means irrational given the remit suggested by a fundamentally precautionary restriction. By contrast, not one cashier asked directly, nor did the many more involved in reported exchanges received by the author, make reference to real incidents of fires caused by body static. Nor was the potential for human distraction whilst refueling and speaking on a mobile phone at the same time referred to in any exchange. Again, lack of reference to this issue is hardly surprising given they are not instructed to highlight the problem of distraction. At the time of writing in late 2005 there remains no sign of a change in UK oil

company policy, as it appears easier and clearer for them to continue to allow their employees to enforce restrictions on the basis of a 'phantom' risk.

Not all British petrol-station employees are told that there have been fires caused by mobile phones, and they are not instructed to pass on rumours concerning alleged incidents. Nonetheless, they appear to be effectively left to assume that the restriction is because of the real possibility of a fire from a mobile phone spark. It is hardly surprising that they assume the advice is based upon actual incidents, even if they have not actually been told this is the case.

Reflecting on the petrol station rumour

The mobile phone/petrol station story is clearly a rumour, conforming to the definition as: 'information that is spread without secure standards of evidence' (Fine and Turner, 2001: 18). One can detect some of the ambivalence about contemporary life described in other rumour studies (Brunvand, 1999). A subtext to stories about 'sparking' mobile phones is that there surely must be a hidden price to pay for using a device that so effortlessly connects us to whomever we want, whenever we want? An element of 'apocryphal warning' typical of urban legends can be discerned in this rumour; a rude reminder against complacency with regard to the unthinking use of modern communications technology. Yet there is a danger of forcing too much sociological meaning from a tale that, on reflection, is of a different character to ostensibly comparable tales such as that of razor blades in apples (Best and Horiuchi, 1985). In such urban legends it is clear that they speak directly to a particular, malign conception of 'other' people in a way that is absent from the forecourt tale. This rumour does not tell us about human baseness, as do many urban legends. The mobile phone rumour is more straightforward, partly being a distortion of the actual cause of a real event. Most tales of 'exploding' mobile phones were not attributed to 'friends of friends', but were circulated on the internet and followed instructions to turn off mobile phones at service stations. Urban legend, and to an extent more general rumours, typically have a more spontaneous social character making them particularly difficult to trace. By contrast, whilst there is no evidence regarding the public resonance for the idea of sparking mobile phones either way, anecdotally it appears most people are curious about, and even hostile to the rumour, rather than actively involved in spreading it.

Given a relatively unusual degree of certainty about the mythical character of this rumour, in its own terms it is surprising that it is perpetuated. One important background factor is how no understanding of either the implausibility of the mobile phone connection or the actual possibility of body static causation has been generalized even among specialist personnel, including most firefighters, worldwide. Part of the intellectual background supporting a new precautionary approach to risk management is the purported problem of a patronizing insistence on communicating scientific knowledge 'top-down' to a non-scientific constituency that is assumed to be ignorant (Irwin, 1995; Irwin and Wynne, 1996; Wynne, 2000). Elsewhere, controversies such as over alleged negative human health effects from mobile phones are driven by competing and conflicting expertise. By contrast, the petrol station/mobile

phone case is notable for the manifest *lack of expertise* that has allowed fundamental misunderstanding of imagined and real risks to continue in the face of relatively definitive evidence.

The restriction on the use of mobile phones at petrol stations has its origins in precautionary British petrol station safety management confronted with a new device in its regulatory environment. Restrictions worldwide took their cue from these measures, warning signs printed by mobile phone manufacturers, and subsequent rumours. What then was most important in sustaining and spreading the rumour were the primary and secondary precautionary actions taken by the relevant corporate actors. Arguably the most important step was the mobile phone handbook instruction warning users to desist at petrol stations, a warning that then appeared countless times in internet rumours. A more indirect role in rumour creation was the information deficit created by restrictions that were assumed to be based upon actual fire incidents.

Crucial validation of the rumours was provided by the existence of restrictions at petrol stations and warnings in mobile phone handbooks. On occasion, the 'urban legend' has been denied by oil companies, yet they maintain restrictions that appear to be directed against these targets. The mobile phone/petrol station rumour confirms that the corporate refusal to confront rumour leads to their proliferation (Fine and Turner, 2001: 144). Yet, unlike other rumours where corporate actors have vigorously set about challenging their basis, the petrol station/mobile phone rumour is far more self-created, and more about the unintended consequences of implementing precautionary restrictions. Rather than a story originating in anxious communities making sense of modernity, this is an idea that has been sustained by official restrictions and warnings from oil companies. In so far as any purpose is at work, it is to maintain a precautionary safety status quo that prefers unexplained restriction to the complications of relaxation.

The tale of exploding mobile phones at petrol stations conforms, albeit in a slightly new way, to a key assumption of mid-century rumour research, in that it fills a vacuum created by an uncertain and ambiguous situation. Where nobody knows for certain why manufacturers and oil companies warn against using a device, rumours of incidents occupy that void. For station cashiers confronted by potential customer anger, rumour could even be described as a problem-solving activity by groups of people who are deprived of adequate information (Shibutani, 1966).

The mobile phone rumour and associated restriction is not an exotic urban legend that existed only in Cyberspace. The story thrived, and the restriction continues because of the wider context of a precautionary culture (Pieterman, 2001). Guarding against all risks, significant or remote, through blanket restrictions can erode distinctions and elevate the remote to the same level as the significant. Yet there remains a disjuncture between our social knowledge and experience that tells us that implausible risks are precisely that, and the official insistence that restriction is necessary. Rumour fills this void, in this case making sense of signs telling us that, curiously, we must not use a communications device where we refuel our vehicles.

If regulation is fundamentally precautionary, it lacks identifiable bases and it is possible that alternative reasons for regulation enter circulation and cannot be clearly refuted. If not altogether a new form of, or context for, rumour creation,

rumours arising from precautionary restrictions and advice may become increasingly common, as this form of risk management and governance continues to prove attractive to policy-makers and commercial actors alike.

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Notes

1. Bovine Spongiform Encephalopathy/variant Creutzfeldt-Jakob Disease.
2. Non-governmental organization.

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