Arming a traditionally disarmed police: an examination of police use of CS gas in the UK

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Abstract The introduction of police use of CS gas within the UK has prompted widespread criticism. This article begins with the background to the introduction of CS gas, including the rationale behind its use. This is followed by an elucidation of the concerns and problems ensuing from its use, namely danger to health, police use/misuse, its effectiveness as a deterrent to police assaults, and police accountability. Throughout the article a number of recent cases are discussed.

Introduction
Police in England began CS spray training in spring 1995 and street trials in England and Wales started a year later. In August 1996, the majority of police forces in England and Wales began using the sprays. Police in Scotland began street trials in October 1997 in two police forces. At present there is only one Scottish force, Tayside, which has adopted the use of CS spray.

Background
CS is named after Corson and Stoughton, the Americans who first synthesised the substance in 1928 (Association of Chief Police Officers in Scotland, 1998a). The CS in the spray is a crystalline solid and the irritant liquid has a maximum effective range of between eight and 14 feet.

The introduction of CS spray for use by police in the UK has prompted widespread criticism and concern. Two incidents in England sparked off concern: a police officer was severely injured during CS training and a London man died after having been restrained by police use of the spray shortly after trials began. The inquest jury returned a verdict of unlawful killing on the London man, prompting Scottish police to announce a suspension of their street trials “until a thorough evaluation can be made of all the facts.” (John Orr, Chief Constable of Strathclyde, quoted in Jenkins, 1997). Two weeks later, Scottish police resumed the trials. In response to such incidents, both English and Scottish police forces have asked the Home Office Scientific Research Unit to carry out an assessment of the medical implications of the incapacitant. Scottish police have stated that there will be no further rise in the use of CS spray until they can assess the Research Unit’s findings.
Testing and training
Training of police officers in the use of CS spray began in England in spring 1995, but was suspended following an incident during training. It was originally intended that each training session would contain a “live demonstration” of CS – that is, an officer would volunteer to be sprayed in the face with the incapacitant. At a trainers’ training session, a Metropolitan Police officer was sprayed and badly injured (Kock and Rix, 1996). He was reported to have suffered 50 per cent burns to the cornea of one eye, 40 per cent burns to the other eye and burns to the forehead. Two officers from Surrey police force were also injured during training that year.

Despite these incidents, training restarted in February 1996. However, no further live demonstrations took place at training sessions. General exposure sessions did, nevertheless, continue. A report by the Association of Chief Police Officers in Scotland (ACPOS) considers exposure by officers during training to be a useful experience; an officer can acknowledge the effects of the spray and the necessary aftercare treatment (ACPOS, 1998a). Guidelines, issued in 1996 by the Association of Chief Police Officers (ACPO) in England on the use of CS, state that officers should be familiarised with CS “without spraying the irritant directly into the officer’s face” (ACPO, 1996, p. 4). This appears to acknowledge that CS is not safe to be sprayed into a person’s face – whether police officer or member of the public.

Some officers refused to participate in the training sessions. In one force, those refusing were subsequently required to submit their reasons for refusal to the force medical officer. Another force required trainees to sign an indemnity prior to exposure to the gas (Kock and Rix, 1996).

Concerns and problems
The incapacitant spray is controversial for a number of reasons. First, the spray may be more dangerous to health than the public have been led to believe. Second, it appears that the police are using the spray to subdue people whether they are violent or not, in order to make it easier to arrest them. Third, evidence suggests that CS is not a deterrent to assaults on police, although this was the primary reason for the introduction of the spray. Fourth, there are issues of accountability. Finally, police-community relations are likely to be eroded. These concerns will now be examined in turn.

Danger to health
The London man, Mr Sey, became ill at Ilford police station after being arrested following a domestic disturbance at his home in 1996, and he died in hospital. The spray had been used during the arrest. Scotland Yard initially stated that the spray was not linked to his death (Duce, 1996). The post-mortem examination indicated that the man suffered from hypertensive heart disease and he had collapsed following a period of exertion (Younge, 1996). The inquest jury returned a verdict of unlawful killing: Mr Sey had died of asphyxia, due to the position in which he was restrained, and excited delirium, a mental illness
where the sufferer shows physical signs of extreme exhaustion (Duce, 1996). The jury’s verdict did not make clear the role of CS spray in the death, but the coroner said the verdict reflected “growing public concern” about the way people were restrained by the police, and he recommended an urgent review of the use by police of CS in restraining suspects (Jenkins, 1997).

ACPOS (1998a) note it is recommended that CS should not be sprayed at a distance of less than three feet. Upon spraying CS, the intended target inhales the CS particles which aggravate receptors in the skin, eyes, nose and respiratory tracts. The physical effects of the weapon include excessive watering of the eyes and nose, eyelid spasms, extreme salivation and burning of the nose and throat (Home Office, 1996). The effects are said to wear off usually within 15 minutes, when the subject is exposed to fresh air (ACPOS, 1998a).

Kock and Rix (1996), who carried out a review of the English street trials, stated that:

We have found no indications of long-term harm from CS, and there is nothing in the reports from police surgeons to indicate that, in their view, CS had caused serious injury to those sprayed or otherwise affected (Kock and Rix, 1996, p. 6).

However, in a Channel Four Television survey, over half of those in the study group sprayed with CS during the street trials were still suffering symptoms such as skin blistering, watery eyes and breathing difficulties over a week later (Dispatches, 1996). More worryingly, researchers in Hong Kong, where CS gas was used on Vietnamese boat people, encountered victims still suffering burns, chest ailments and fever two months later (Electronic Telegraph, 1996b).

The British-used incapacitant is similar to those used by police in Belgium, France and The Netherlands (Electronic Telegraph, 1996a). The then Home Secretary, Michael Howard, stated at a press conference in 1996 to approve police use of the spray:

This isn’t a new substance. It’s been used for 18 years in France. There is a lot of evidence about its use in the United States and all the evidence I have seen is that it is not a danger to the public (Home Secretary, 1996).

However, the French gendarmerie keep no detailed statistics of CS use. Further, use of the spray has raised serious health concerns in France, particularly regarding severe skin reactions (Dispatches, 1996). It has also been pointed out that American research on CS was designed purely to assess whether CS can cause cancer in laboratory animals; it was not designed to see whether CS could cause breathing problems, skin problems or health problems in vulnerable people (Hu, 1989).

According to one of the major manufacturers of CS spray in the USA, a 1 per cent solution is the maximum used by the American police (Dispatches, 1996). Their use of a 1 per cent solution is based on the findings of the UK government’s own research, the Himsworth Report (1969). Only small amounts of CS are needed to cause incapacitation; indeed, large doses may needlessly increase the danger of injury. The UK spray, made by a French company,
contains a 5 per cent solution of CS. The US spray releases a 1 centilitre burst of 1 per cent CS concentration, but the UK version releases a 5 centilitre burst of 5 per cent CS solution – in other words, the UK spray contains 25 times more CS than those used in the USA (Dispatches, 1996).

In October 1999, Tayside police in Scotland introduced the use of CS spray, based on the findings from an independent committee report carrying out a Department of Health inquiry, which asserts no real concerns regarding the health implications of the spray (Bell, 1999). However, it is argued that the full medical implications of the use of CS spray remain unknown (Liberty, 1997). There is evidence that using CS spray can cause permanent lung damage at comparatively low doses (Jason-Lloyd, 1991, pp. 1043-5) and secondary burns with blistering and severe dermatitis (Parneix-Spake, 1993, p. 913). ACPO Guidelines also recognise particular risks to the safety of contact lens wearers who are sprayed with CS spray (ACPO, 1996, p. 7). In situations where high exposure to CS spray has occurred, heart failure and death have been reported (Liberty, 1997).

It is acknowledged that certain individuals may be less affected – for example, those with serious mental illness and those under the influence of drink or drugs (ACPOS, 1998a). However, such individuals may be more likely to attack the police. Results from the Scottish trial found that, in all the circumstances where CS spray was used, the assailants were under the influence of alcohol, drugs or solvents (ACPOS, 1998a). Moreover, people who are unresponsive to the spray because of alcohol, other drugs or perhaps mental health problems, may receive doses many times higher than intended. The ACPO Guidelines appear to recognise that, if used on those with asthma or under the influence of drugs and/or alcohol, there is a risk of death (ACPO, 1996, pp. 6-7).

A new incapacitant, PAVA (pelargonic acid vanillylamide) is being investigated amid health concerns over CS spray. ACPO is reviewing the second-generation spray PAVA which is related to the pepper spray, and unlike CS spray it does not contain methyl isobutyl ketone (MIBK). A leaked Home Office commissioned report by scientists at the chemical warfare base in Porton Down, UK, claimed that MIBK could be poisonous and carcinogenic in the long term (Butler, 1999). The solvent in which the CS is dissolved, MIBK, is commonly used in industrial processes and is found in paints and paint-stripper. It can cause, amongst other things, lung damage. It may even cause damage to the unborn child. Data on the toxicity of MIBK on humans is sparse; and it would, of course, be impossible to test a toxic chemical on pregnant women (Dispatches, 1996).

Three English police forces, Northampton, Sussex and Nottinghamshire, have refused to use the CS spray on safety grounds (Butler, 1999). Surrey police force commissioned research into the standard issue spray and alternatives, notably to produce a spray which uses a water propellant instead of the solvent MIBK (Electronic Telegraph, 1996d).
Some forces and the Police Federation have expressed their preference for the use of the pepper spray as an alternative to CS. Police departments in the USA have increasingly been training officers in its use (Lumb and Friday, 1997, pp. 136-48). Oleoresin capsicum (OC) is a naturally occurring inflammatory agent found in cayenne peppers and it causes mucous membranes to swell. Unlike CS, OC appears to be successful in controlling subjects who are under the influence of alcohol or drugs and who are suffering from serious mental illness (Lumb and Friday, 1997) and in causing instant incapacitation (Kingshott, 1992). A further benefit of OC is that it allows dissipation of spray particles from the subject’s clothing in a short period of time (Lumb and Friday, 1997). However, there is still cause for concern with the use of OC pepper spray, notably the death of a number of individuals in the USA following spraying (Lumb and Friday, 1997). OC has reportedly caused damage to the cornea and vocal cords, respiratory difficulties, skin irritation, and it may have a potential to be carcinogenic and have mutagenic potential in humans (Kaminski et al., 1999).

Finally, there are fears that the contents of the hand-held canisters could ignite on contact with a naked flame or even a cigarette (Electronic Telegraph, 1996e). There is therefore the possibility that someone sprayed while smoking a cigarette might go up in flames.

It can be concluded that the long-term health risks from use of CS, or even OC, spray have not been fully examined.

**Police use/misuse**

ACPO Guidelines (1996) state that:

The incapacitant is primarily designed for dealing with violent subjects who cannot otherwise be restrained (ACPO, 1996, p. 1).

The Guidelines continue:

The use of the aerosol incapacitant may be appropriate against:

1. those offering a level of violence which cannot be appropriately dealt with by “empty hands” techniques, and
2. violent offenders, other than those armed with firearms or similar remote injury weapons, where failure to induce “immediate” incapacitation would increase the risks to all present (ACPO, 1996, p. 5).

Although officers carrying the spray are cautioned to use them only defensively, there are recorded incidents of police in England using CS spray as a method of control. In the London case of Mr Sey, the above concerns were articulated following the use of CS spray, although ten officers were present to restrain him (Duce, 1996). In another case, police used CS spray to disable a mother so that her baby could be taken from her and given to social workers. In yet another case, police officers sprayed CS into a bedroom in a care home where two teenage children had barricaded themselves. Although both the mother and the teenagers in these latter two cases had become violent, the
chairman of the local social services department stated that the use of CS spray was a quick-fix solution (Wilkinson, 1996). Before the introduction of CS spray, the situations would have been talked through by police officers. Police have echoed these concerns, saying that some officers may resort to using the spray rather than using interpersonal skills (ACPOS, 1998a). Investigation by London’s Maudsley Hospital found that a third of all NHS hospitals had treated psychiatric patients which had been sprayed with CS. A mental health practitioner reiterated the concern that CS spray is becoming the first line of defence and, moreover, nurses deal with such patients daily and do not use CS spray (Baskind, 1999).

The decision to use the incapacitant will be dependent on a police officer’s assessment of the situation:

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\ldots \text{this will include their own ability to deal with the incident and the threat posed by the suspect(s) (ACPO, 1996, p. 3).}
\]

ACPO Guidelines continue:

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\text{It is essential that an officer’s training and skill permits the exercise of maximum self-control and control over the situation . . . (ACPO, 1996, p. 3).}
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Officers undergo a one-day training course, containing theory, practical and examination sections, before they are allowed to go equipped with the spray (Kock and Rix, 1996).

Trainees on the CS courses felt that the training was good. However, there was inconsistency about the warnings officers were to give before spraying CS. Officers in a small number of forces were trained not to shout a warning before spraying CS, for fear that the target might then be able to protect his face from the spray (Kock and Rix, 1996). However, most officers were trained to shout a warning before spraying unless it was impracticable to do so and in many cases the warning itself was sufficient to make the use of the spray unnecessary (ACPOS, 1998a).

Kock and Rix (1996), in their review of the police trials in England, show that officers in trial areas reported 726 incidents where CS was drawn and used, and 381 where CS was drawn but not used. The majority of these incidents were public disorder or domestic disputes and CS was usually drawn, or used, to enable the officers to defend themselves. However, in the next highest category – around one in four incidents – officers reported that CS was drawn, or used, primarily to make an arrest. Further, although CS training discouraged officers from placing cuffed subjects prone, face down, to avoid the risk of positional asphyxia, 9 per cent of sprayed subjects were cuffed and placed in this position.

Police argue that there is less risk of serious injury with CS spray than if an assailant is struck with a police baton. The data show that the risk of injury from CS spray use is less than for baton use (Kock and Rix, 1996). However, CS spray is not intended to be used as a replacement for the baton. ACPO Guidelines state that:
It is issued primarily for self-defence but should not be regarded as a replacement for other routinely issued protective equipment . . . (ACPO Guidelines, 1996, p. 1).

Some police officers are confident of the impact of CS spray and believe it may render the baton obsolete; many of these officers do not carry their baton on duty. Such actions have prompted criticism from Her Majesty’s Inspectorate of Constabularies, who state that CS spray has a 10 per cent failure rate and not to carry their baton is dangerous for the officers (Baskind, 1999). It might be argued that using CS spray will result in a net increase in the number of injuries to the public.

A small study carried out by Channel Four Television (Dispatches, 1996) involving 34 people – approximately 5 per cent of all the people sprayed over the trial period – gives cause for concern regarding police use of CS spray. Nearly two-thirds of interviewees said they were sprayed at a range of less than three feet. Less than a third reported that they had been promptly moved away from the area in which they had been sprayed or had been given instructions and reassurances about how best to cope with their symptoms. One in four said a police doctor had not seen them; and the police asked no one if they wore contact lenses. These practices are all contrary to the ACPO Guidelines. It should perhaps also be noted that some 47 per cent of the interviewees either were not charged or by the time of the study had already been acquitted of the alleged offence (Dispatches, 1996). A spokesman for the Scottish Human Rights Centre highlighted anxiety of abuse, particularly as there is still insufficient accountability to the public for the actions of police officers (Bell, 1999).

A deterrent to police assaults?

The primary objective of the trials was to assess the suitability and effectiveness of the CS incapacitant as an item of police defensive equipment (Kock and Rix, 1996). The Police Scientific Development Branch (PSDB) were approached by the Home Office Operational Policy Unit and the ACPO Self-Defence Arrest and Restraint Committee to find a safe incapacitant, in response to concerns apropos the limitations of the present protective equipment and for extra protection against assaults (ACPOS, 1998a). CS spray was found to be the most suitable incapacitant by the PSDB in terms of its “effectiveness and safety”. However, there is evidence which suggests that CS is not a deterrent to assaults on police.

There are 43 police forces in England and Wales, with nearly 120,000 officers. During the street trials the spray was issued to nearly 4,000 officers in 16 forces, to those police officers at stations within the 25 designated trial zones. Another area was also selected within each authority and just over 3,000 officers operated in these control zones (Kock and Rix, 1996).

Force statistics on the trial period show that assaults on police were reduced by 18 per cent in areas where CS was used, compared to the same period in the previous year. However, in the control areas, where the spray was not used, assaults fell by 22 per cent. Further, many of the injuries in trial areas were related to CS spray cross-contamination (Kock and Rix, 1996).
However, senior police officers argue that the reduction in days lost – a 66 per cent reduction compared to the same period in the previous year – is more significant, suggesting that CS is preventing more serious assaults (*Electronic Telegraph*, 1996c).

What can be noted is that police officers feel that the spray significantly improves their safety (Kock and Rix, 1996). Of the police involved in the Scottish trials 91 per cent favoured CS spray. However, some officers had reservations, for example:

I am unsure of the consequences of using it

and

Cross-contamination means we may be less able to defend ourselves (ACPOS, 1998a, p. 21).

The Scottish trial initially involved some 240 officers from both Strathclyde and Tayside. This number increased to 803 officers when the trials were extended to the whole of the city of Dundee (Tayside) and all of D Division of Strathclyde (Glasgow and East Dunbartonshire). With the introduction of the Scottish police trial, Scottish police are arguing that CS will reduce assaults on officers. More than 10,000 Scottish police officers are assaulted on average a year, which results in some 2,500 days being lost through sickness. Of Scotland’s eight forces, Strathclyde and Tayside have the worst records in Scotland for assaults (*Electronic Telegraph*, 1997).

Research carried out in one of Strathclyde’s sub-divisions (DB) shows that between 1996/97 there were 70 assaults made on police officers. The following year, when CS spray was being trialled, the number decreased by 20 per cent (to 56 assaults). It was also found that the number of working days lost during the trial period was down significantly. However, the number of officers injured increased during the trial period, from three to six injuries (ACPOS, 1998a). Research carried out in two further sub-divisions of Strathclyde (DA and DC) shows one officer injured in 1997; during the trial period of 1998, this number increased to four. The number of working days lost in 1998 increased from the previous year by 12 days to 35 days lost. The number of police officers assaulted had also risen during the trial period by four to 74 assaults. There are many problems with the data, allowing no definite conclusions to be drawn; however, it can be suggested that the use of CS spray is not an absolute effective deterrent.

Scottish research has also found some disparity in the time taken for the spray to take effect. During the Scottish trial, in 18 incidents (62 per cent) the CS spray was effective within five seconds, whereas in eight incidents (28 per cent) it took six to ten seconds. In four other cases the CS spray was ineffective, and in three of these cases the arresting officers sustained “severe impairment” (ACPOS, 1998a). In two incidents, CS spray made two assailants more violent and other defensive tactics had to be used. These incidents demonstrate the ambiguity surrounding the actual effectiveness of CS spray.
Overall, the data do not allow clear conclusions to be drawn on the effects the use of CS spray has on injuries to, and assaults on, police officers.

**Accountability**

The UK civil liberties’ group, Liberty (1997), points to the issue of accountability. They note the failure of the police to make public the documents which would permit medical and public opinion to assess the safety of the spray.

Liberty (1997) also stress the lack of any wider consultation process prior to the approval of the spray. Shortly before the English street trials were due to end, and whilst Parliament was in recess, the then Home Secretary announced his support for any chief officer wishing to issue CS to officers on the beat (Dispatches, 1996). Thirty-five out of 43 forces subsequently began using the spray. In effect, then, accountability for the use of the spray passed to the chief constables of the police authorities in England and Wales.

**Police-community relations**

Last, but not least, is the concern that the use of CS is likely to set back police-community relations. Following the death of Mr Sey, demonstrations took place in London’s East End. Members of Glasgow’s Easterhouse community claim that the trials will destroy the already sensitive relationship between the local community and the police (Mackay and Milne, 1997, p. 9). Public attitude research commissioned by the Police Research Group showed that only 34 per cent of their telephone survey and 47 per cent of their street survey were totally in favour of the issue of CS spray to the police (Kock and Rix, 1996).

It is clear that the use of CS undermines traditional policing by consent. It “might be good for police auditors but doesn’t help human relations in any aspect whatsoever” (Bob Pitt, Chairman of Middlesbrough Social Services Committee, quoted in Dispatches, 1996). Scottish research of the general public found that only 46 per cent perceive CS spray to be safe, whilst 36 per cent thought it was unsafe and 18 per cent were unsure (ACPOS, 1998b).

**Conclusions**

This article has sought to show the problems regarding the introduction and use of CS spray. The five main concerns have been discussed above.

However, there are other issues which should also be noted. These include the difficulties which have been discovered in decontaminating vehicles and buildings in which the spray has been used (Electronic Telegraph, 1996d). It has also been recorded that those subsequently coming into contact with subjects sprayed with CS, such as police surgeons, regularly experienced cross-contamination (Kock and Rix, 1996). In addition, the ACPO Guidelines make it clear that criminal and civil actions are expected against the police for abuse of CS sprays.
Police in the UK have traditionally been unarmed, carrying only the truncheon – later the baton – since the birth of professional policing in the first half of the 1800s. The notion of the bobby as “a citizen in uniform” has been a popular one and it contributed to the “British police advantage”.

Undeniably the police have a difficult job to do. They frequently confront people who are violent, some of whom are armed with weapons, and as a result police officers are injured, sometimes fatally. Unfortunately, CS spray gives real grounds for serious concern. The CS currently being used by UK police is a concentrated solution sprayed directly into the face. It delivers a high, direct, contact dose of a potentially toxic agent. The effect of widespread use in terms of all the factors examined in this article can only be estimated at present.

References


