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When TV brings you the news as it didn't happen

Broadcasters are using virtual imaging technology to alter live broadcasts - and not even the news is safe from tampering

Monday, 24 January 2000

Viewers tuning into American broadcaster CBS's recent news coverage of the millennium celebrations in New York witnessed a televisual sleight of hand which enabled CBS to alter the reality of what they saw. Using "virtual imaging" technology, the broadcaster seamlessly adjusted live video images to include an apparently real promotion for itself in Times Square. The move has sparked debate about the ethics of using advances in broadcast technology to alter reality without telling viewers that what they are seeing isn't really there.

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While it's little surprise that advances in TV technology enable broadcasters to better manipulate existing images and create new ones, what is surprising is that this was done during a live broadcast and in a news programme. The CBS evening news coverage involved replacing the logo of rival network NBC with the CBS logo on a large video screen in Times Square. NBC was "outraged" by the use of the technology, and even CBS's evening news presenter, Dan Rather, admitted it was a "mistake".

The technology to do this comes from the defence industry where, following the end of the Cold War, a number of companies have developed new ways of commercially exploiting their military navigation and tracking expertise.

The system CBS used was developed by a United States company called Princeton Video Images (PVI). Other players in this field include Symah Vision - part of French defence to media group Lagadere; Israel-based Orad Hi Tech Systems, and SciDex, another Israeli firm with offices in Europe and the US. Each system, while similar, has its differences. None of the companies will publicly discuss how their's works. But the principle is common: each alters the live video image in the split second before it is broadcast.

"The prime use of our system is to insert promotional images into live coverage, or as a post-production application for pre-recorded (TV) shows - for example, to insert branded goods into the action that weren't really there, for product placement," Denny Wilkinson, PVI's chief executive officer, explains. "Advertising, however, has by far and away the biggest potential for this. It's where the money is."

The use of this technology is already becoming familiar in sports coverage. A number of international sports organisers have recognised the potential to generate more advertising revenue by - in effect - re-selling the same perimeter advertising billboards at their stadia. Through virtual imaging, different advertisers' brands can be seen in different countries that take the live broadcast feed.

A number of European broadcasters including Sky TV have already run "virtual advertising" trials. Mexican broadcasters, meanwhile, have fully embraced virtual imaging systems. And different sports - notably Formula 1 - now acknowledge the potential to deal with restrictions on tobacco advertising in certain countries by replacing cigarette branding in some territories with other images.

The use of this technology for editorial purposes however is more contentious. Already, other media owners - notably newspapers - have had to deal with concerns about digitally manipulating photographic images used in news pages. The Mirror's doctoring of photographs of the Princess of Wales and Dodi Fayed holidaying together was perhaps the highest profile example.

Now concern is being voiced over TV viewers believing they can see something which is not actually there. Which is why it is hard to find anyone in UK broadcasting ready to admit that they - like CBS - are considering the potential of this technology beyond advertising. Sky, however, sees the technology's use as a way of enhancing "the look" of its sports coverage. "We use the ORAD system for a combination of editorial and promotional use," explains Phil Madge, Sky TV studio graphics supervisor "We are using it now to build virtual screens which hang down from the roof of various football stadia to highlight upcoming events, pre-recorded footage and Sky Sports promotions."

Sky purchased the system at the start of the current football season, although it had run a number of trials previously, Madge adds. It has been used less for virtual advertising due to a combination of Independent Television Commission restriction and Football Association concerns. However, it was also used by Sky News to create a virtual studio for the channel's millennium coverage.

"There is great potential to use virtual imaging in other ways but it remains a tool whose biggest advantage is for live broadcasting," Madge says. "There are obvious advantages in virtual studios as you don't need a physical set, just a blue screen against which the presenter

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is shot and a three-D computer model. You can change it over very quickly - there's no need to shift scenery. The downside is it can look quite computer 'graphicsy', and a bit naff."

CBS's problems arise from the fact that its use of the PVI system went one step further than "enhancing" the look of its presentation: it tampered with the reality of an actual event it was depicting in a news show, raising the spectre of TV news reporters reporting "live" from around the world when they're actually far closer to home. The broadcaster - which has also used virtual imaging to modify the New York cityscape - defended itself by insisting: "CBS News' internal standards prohibit digital manipulation or other faking of news footage."

However, a CBS spokeswoman admitted that virtual insertion technology is yet to be covered by the broadcaster's guidelines. But Dan Rather, for one, thinks it should be. "At the very least we should have pointed out to viewers we were doing it," he told the New York Times. "I did not grasp the possible ethical implications of this and that was wrong on my part."

CBS is not the only broadcaster to use this technology in news broadcasts. Rival ABC recently included a report on Congress by a reporter wearing an overcoat in front of what to viewers seemed to be the US Capitol. The entire report was taped in a studio.

UK programme makers, however, doubt virtual imaging technology requires guidelines any different to the ones they already have relating to editorial balance, accuracy and fairness. "Any form of factual programme-making involves some form of editing of events. It's not hard to present the same situation in a number of different ways," one documentary maker explains. "But it is up to the integrity of the programme-maker to do so with integrity in a way that is both responsible and accurate. The same approach must apply to any production method."

It is a view which seems to be shared by the ITC, whose guidelines relate to the use of virtual imaging by advertisers - none specifically relate to editorial use. "It is an issue that crosses a number of regulatory areas - it could be a matter of inaccuracy, or undue prominence, or fairness. If it arose, we would have to consider each case on its own merits," a spokeswoman says.

Trouble is, for the time being at least, the onus is on the viewer to draw any example of tampering with reality to the attention of the regulator which then would investigate retrospectively. Assuming, that is, that they realise what they are seeing isn't real.

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