

The CSI Effect

TV shows are inspiring kids to learn about science, but are they sending the wrong message?

BY GARY BOAS, CONTRIBUTING EDITOR

In the fall of 2000, CBS introduced a show about a bunch of attractive, stylish crime scene investigators who, using an array of high-tech, sometimes science fiction-y tools, crack cases with ironclad, incontrovertible evidence and then – just as breezily, it seems – nab the bad guys. All within a span of about 42 minutes.

The show, of course, was *CSI*, and before long it had become a veritable phenomenon, spawning two spin-offs and inspiring a clutch of other such “procedural” programs: *Criminal Minds*, *Bones*, *Crossing Jordan*, *Without a Trace*, *NCIS*, *Cold Case Files* and *Forensic Files*, to name a few.

CSI has brought a new awareness to the field of forensics, especially in the educational arena. Some observers fear, however, that the show is leaving viewers with a somewhat erroneous understanding of the field. In real life, they say, forensics is neither as glamorous nor as effortless as it appears on television. At the same time, the format of the show – the nature of television, generally – has created unrealistic expectations of what science can achieve in the courtroom. The results from forensics tests are rarely as unambiguous – as conclusive – as on *CSI* and are almost never available before the hour is up.

This phenomenon, this combination of misunderstandings about and increased expectations of forensics, has been described as the “*CSI* Effect.” And whether it outweighs the positives of the show – the increased awareness of the field and the newfound cachet of science in general – is still up for debate.

Fact and fiction

There is a considerable disconnect between the world of forensics as seen on TV and the real world of forensics. Brad Brown, vice president of Arrowhead Forensics, which supplies instruments and other products to the law enforcement market, said, “We’ve been doing this for



Arrowhead Forensics has partnered with Coherent Inc. and the law enforcement market to provide a 532-nm forensic laser called the TracER, a new lightweight, battery-operated device that investigators can carry from the laboratory to the crime scene to find latent prints, and biological and other trace evidence.

years, and I can tell you, it’s not all about fancy cars and high heels.”

He also points out the speed and relative ease with which “one guy does it all” on some of the shows. State crime labs have many sections within the laboratory: trace evidence analysis, photo documentation, chemistry, firearms, DNA analysis and so on. A team will work together to complete an investigation and, even then, it needs a considerable amount of time to arrive at any conclusions. “In real life,” Brown said, “it sometimes can take longer to solve a crime than it takes to produce a whole series.”

And then there is the technology itself. Much of the technology used by crime scene investigators on television exists in the real world – DNA sequencers and mass spectrometers, for example. However, as noted in a 2006 commentary in the *Journal of Chemical Education* by Elisa T. Bergslien, associate professor of earth sciences and science education at Buffalo State College in New York, the manner in which the technology is used is often “far-fetched.” “Few chemists would be willing to grind up maggots and inject

the resultant pulp into their gas chromatographs,” she explained, “an act that would almost certainly destroy the column.”

CSI meets the Ivory Tower

Fact or fiction, the popularity of *CSI* has led to the introduction of forensics courses at the junior high and high school levels and to increased enrollments at the college level. In many cases, faculties are scrambling to create new courses – especially “forensics for nonscience majors” – to meet the burgeoning demand.

Bergslien, who teaches a forensic geology course at Buffalo State, welcomes the spike in interest – likening it to the increased currency of environmental courses in recent years, as media attention has focused on global warming, for example. *CSI* has clearly had a positive effect on education, she said recently, helping to popularize science. Students are now more interested in finding out how things work. Oftentimes, they are disappointed that forensic investigation is not quite as effortless as it appears to be on television – a realization that can be a

The “CSI Effect” also has played out in the courtroom, as jurors and potential jurors are now armed with greater understandings – and misunderstandings – of how evidence is collected and tested using forensics. “Jurors now want to see the science,” said Brad Brown, vice president of Arrowhead Forensics. “They ask questions like, ‘Why didn’t you run a test that I saw on TV?’ Sometimes they know what they’re talking about. Other times they don’t.”

The effect is so pervasive that, at times, attorneys will address it in their opening statements and closing arguments, reminding jurors that forensic investigation in real life is generally more ambiguous than what they see on television. Some reportedly will even ask potential jurors whether they watch fictional crime scene-related shows to assess whether they might have preconceived notions from what they have seen on television.

“significant deal-breaker,” she said. At the end of the day, however, there are more students in her program than there were previously.

If Bergslien has any concerns about the newfound popularity of forensics education, it is that forensics is occasionally dumbed down for the sake of the lesson plan. As an example, she refers to curricula created for junior high and high school classes in forensics. “One of the things

I’ve struggled against is matching exercises,” she said. “‘Here’s your crime, here are your four or five suspects.’” Because of the total lack of ambiguity on *CSI* and other such shows, students assume that there is always going to be some obvious solution to the crime, a notion supported by these exercises. Actual crime scene investigations are never so accommodating, however.

Even when she sets up labs in which

none of the suspects is linked to the crime scene, she said, students will “jump through hoops to make things match,” so certain that the answer is within easy reach.

If *CSI*-inspired courses don’t always convey the realities of forensic investigation, they still help to introduce the fundamentals and many of the concepts of scientific inquiry: essentially, what questions to ask and how to ask them. And if forensics courses at the college and university level don’t always meet students’ expectations of sexy work and a glamorous lifestyle, they might still grab them in some other way.

Bergslien sees a number of students who may never have taken a forensics course were it not for *CSI* and other such shows. Some fall away when they realize the classes bear little or no resemblance to what they have seen on TV. Others stay on, however, having discovered something new and exciting in the study of forensics – something they need to explore further.

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