

SCIENTIFIC AMERICAN

ADVERTISEMENT

"Our technology helped us locate reserves below the icy waters off Russia. Now we can produce those reserves using horizontal wells over 7 miles long from the mainland, with a minimum environmental footprint."

Kim Bates
Senior Geoscientist

explore our technologies



Taking on the world's toughest energy challenges.

NEWSLETTERS
SECTIONS ▾
MAGAZINES ▾
SUBSCRIBE ▾
PARTNERS

SEARCH

HEALTH
SPACE
TECHNOLOGY
BIOLOGY
MIND & BRAIN
EARTH & ENVIRONMENT
ARCHAEOLOGY & PALEONTOLOGY
PHYSICS
CHEMISTRY
MATH
SOCIETY & POLICY
HISTORY OF SCIENCE

SciAm.com > News > Technology & Innovation

RSS Feeds Newsletters

July 3, 2008 in [Technology & Innovation](#) | 7 comments | [Post a comment](#)

Who Will Die?: Computer Predicts Which Death Row Inmates Will Be Executed

New system finds that education level is more of a factor than race or severity of crime
By Larry Greenemeier

SHARE
23 diggs

1 point
EMAIL
PRINT
TEXT SIZE: - +



LETHAL: According to a computer system developed to predict which death row inmates are most likely to be executed, education is a stronger indicator of one's fate than race or the severity of the crime itself.
Courtesy of iStockphoto; Copyright: Andrejs Zemdega

Capital punishment is legal in 36 states, but that does not necessarily mean all of the condemned will be executed. Some will languish behind bars for life and others may actually be exonerated and set free. Now researchers say they have built a computer system that can predict with 92 percent accuracy which death row inmates are most likely to be executed, a development they hope will lead to a fairer appeals process.

According to the system, the death row inmates most likely to be executed are those with the lowest levels of education. The researchers, from [Texas A&M University](#)—Texarkana and [Loyola University](#) New Orleans, report in the *International Journal of Law and Information Technology*, that neither the severity of the crime nor race—the latter of which is often cited as a key factor in convictions—are reliable forecasters of a prisoner's fate.

The system consists of 18 computer processors designed to analyze data the way that a human brain does—by studying one set of data and comparing it with another data set to find similarities and differences. In this case, researchers fed the system information about 1,000 death row prisoners,

including their sex, age, race, highest year of school completed, the state in which they were incarcerated, and whether they were ultimately executed or spared. Once the system had established patterns (of traits most prevalent among the executed) from this initial pool, the researchers fed it similar information about 300 more prisoners (leaving out whether they had lived or died). The system, using logic it had developed from the first set of data, correctly predicted the outcome for 276 (92 percent) of the prisoners.

The system's success "has serious implications concerning the fairness of the justice system," says [Stamos Karamouzis](#), dean of [Regis University's](#) School of Computer and Information Sciences in Denver, who led the 2006–07 study when he was a professor of computer and information sciences at Texas A&M. "People against the death penalty use the results of this work by pointing out that the nature of the crime has nothing to do with whether you're executed or not."

Karamouzis, who was assisted in his research by Loyola sociology and criminal justice professor [Dee Wood Harper](#), acknowledges that the study lacked crucial data—unavailable at the time—such as whether DNA tests were conducted to match an inmate's genetic makeup with crime-scene evidence and whether he or she received competent representation, which is difficult to measure quantitatively.

This research comes at a time when the [U.S. Supreme Court](#) is attempting to provide clearer guidelines on when the death penalty should be applied. The [high court](#) last week, for instance, ruled that a person convicted of raping a child cannot be executed for the crime.

One legal expert says that it is more important to determine how the death penalty is meted out during the sentencing phase of different cases as opposed to predicting who will be executed once sentenced (which is what Karamouzis and Harper analyzed). Once a person is given the death penalty, "who gets executed is fairly easy to predict," says Richard Dieter, executive director of the [Death Penalty Information Center](#), a nonprofit organization that collects and disseminates information about the death penalty to the public.

SUBSCRIPTION CENTER

SCIENTIFIC AMERICAN
SCIENTIFIC AMERICAN MIND
SCIAM DIGITAL



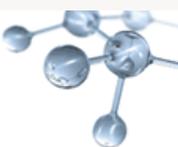
SCIENTIFIC AMERICAN MAGAZINE

Save 58% off the cover price

Plus FREE GIFT!

SUBSCRIBE NOW

ADVERTISEMENT



more energy. fewer emissions.

with technology, we can do both.

learn about the global energy challenge



Taking on the world's toughest energy challenges.

- LATEST STORIES
- [Shield of Invisibility Makes Lumpy Surface Smooth](#)

7 hours ago
 - [The Wolf and the Moose: Natural Enemies That Need Each Other](#)

19 hours ago
 - [1998: Syphilis Genome Sequenced; 2008: Syphilis on the Rise](#)

21 hours ago
 - [Deporting Plants and Animals to Protect Them from Climate Change](#)

22 hours ago
 - [Gut Reaction: An Ulcer-Causing Bug May Also Help Prevent Asthma](#)

7/17/08

- LATEST VIDEOS
- 

[Chinese 'ivory smugglers' arrested](#)

7/16/08
 - 

[Sun, Seine and sand](#)

7/16/08

The best predictor, he says, is the state in which a person is convicted: There were 42 executions in the U.S. last year, 26 of which took place in Texas. "In states like Texas and Virginia, chances are your (death penalty) case will be upheld, and you'll be executed," Dieter says. "In California, chances are you'll get a reversal during the appeals process or you'll be in jail until you die."

The reason? Although the appeals structure is the same in each state, the people in charge have different political beliefs about the death penalty, Dieter says. "The people elected in (Texas and Virginia) are more strongly committed to the death penalty than they are in, say, California," he says, "where they have the death penalty but the (more even) mix of Republicans (who are more likely to favor capital punishment) and Democrats (who are more likely to oppose it) means they are much less likely to use it."

FURTHER READING

[Bad Execution And Science for All Political Bias Proved](#)

[Bush's Mistake and Kennedy's Error](#)
[Bad Drugs: Lethal Injection Does Not Work as Designed](#)

YOU MIGHT ALSO LIKE

[Most Important Science Stories of 2006](#)
[Got Smarts? Mother's Milk May Pump Up Baby's IQ](#)
[The False Crisis in Science Education](#)
[Why Aren't More Women Physicists?](#)

[At the Edge of Life's Code](#)
[Nobel Scientist Quits in Wake of Scandal](#)
[The Science of Lasting Happiness](#)
[From Physics to Politics: Mr. Foster Goes to Washington](#)

DISCUSS THIS ARTICLE

7 Comments

[Click here](#) to submit your comment.

VIEW: Oldest to Newest

Tan Boon Tee at 12:44 AM on 7/04/08

This is a funny yet at the same time demeaning piece of news -- the computer is trying to influence humans decision based on the past occurrences. A person is sentenced to death because of the heinous and unpardonable crime. Why has it got to do with gender, race, age, profession or education when it comes to the time for the execution of capital punishment? As the computer may have predicted, a condemned inmate would have a better chance of escaping the execution if he or she has a higher academic qualification. Could this mean that a PhD holder would be most likely to escape from the electric chair? Is this fair? How can it be justifiable? May god bless the uneducated criminals.

[Reply](#) | [Report Abuse](#)

posdef at 4:18 PM on 7/04/08

Is this the most convoluted description of regression analysis ever penned, or is there something that differentiates this from the type of statistical analysis learned in run of the mill intro stats courses?

[Reply](#) | [Report Abuse](#)

thangalin at 3:53 AM on 7/05/08

Three hundred years ago, courts of justice could be blinded by superstition. In those dark times, people in positions of power could snuff out the light from any candle of hope that the condemned still held for life. Innumerable falsely accused victims were burned at the stake, ignited by the flames of flourishing injustice, and fanned by the falsehoods spoke by their peers. Sadly, no joyous sunrise would come to end their tortured nights of captivity. But three hundred years later, courts remain hoodwinked by dishonesty. Three hundred years later, lives are still tossed to the proverbial pit of fire. Three hundred years later, people in positions of power demonstrate that they are impossibly all-knowing, all-seeing, and all-hearing by summarily judging the actions of others and then doling out executions with omnipotent strength. And



Reuters Quickcut: F-22 Raptor
7/15/08

POPULAR STORIES

[15 Answers to Creationist Nonsense](#)
6/18/02

[A Solar Grand Plan](#)
12/16/07

[Ben Stein's Expelled: No Integrity Displayed](#)
4/9/08

[The Doping Dilemma](#)
3/31/08

[Bored?](#)
12/27/07

FROM OUR PARTNERS

["Emotional" writing may help ease cancer pain](#)
Reuters 56 minutes ago

[Many widowers not told wife's illness is terminal](#)
Reuters 57 minutes ago

[Mom's diabetes tied to early diabetes in offspring](#)
Reuters 58 minutes ago

[Racial disparity seen in prostate cancer treatment](#)
Reuters 59 minutes ago

[China says post-quake health situation still grim](#)
Reuters 7 hours ago

[VIEW ALL](#)

ADVERTISEMENT

Reclaim your brain

- Improve Memory
- Increase Attention



[www.lumosity.com](#)

Ads by Google

ADVERTISEMENT



Get the insight you need on today's hot topics

[Subscribe to SciAm NEWSLETTERS](#)

so I share with you today a reiteration that acts can be neither omniscient nor omnipotent, that we all have faults, and by extension so do our governments and judicial conditions. In a sense, capital punishment is like writing a cheque to purchase the life of a criminal. A payment, some argue, that is cheaper than supporting lifelong imprisonment. Yet the laws of Australia, Canada, the United States of America, and numerous others guarantee the "unalienable Rights" of Life and Liberty. Our past actions liberated slaves and all but abolished slavery. Our present actions show that we believe the authority to limit the life of a human being belongs to no one. But coldheartedly, these representative cheques continue to be cashed at Banks of Justice, even though Banks of Life and Liberty would return them marked "insufficient funds"! We must refuse to endorse Banks of Justice that continue to honour such cheques. We refuse to believe that money can indemnify human lives, regardless of the crimes in question. These deplorable bank drafts must be nullified to redeem our courts of justice and our humanity. Every moment that our voices remain silent widens the gap between being human and being humane. There is an urgency that cannot, must not, be ignored. Every hour of apathy lends credence to legalized vengeance. Now is the time to speak out for those lost voices smothered behind iron. Now is the time to turn our backs on barbaric States. Now is the time to tell the people in power that killing is wrong. Now is the time to teach compassion to all of our children. Lives are lost forever by ignoring the fierce urgency of Now. The dark winter veil of cold-blooded murder will not be lifted until the springtime infusion of life is guaranteed throughout our societies. And those who believe that tomorrow will be just another day will have a rude awakening if the executions continue. There will be neither rest nor tranquility in the world until unconditional life is granted to all its citizens. The snowstorm of revolution will not end until the clear dawn of humble justice emerges. And to the people united on the peaceful threshold of merciful justice: Do not embark in wrongful deeds. Life cannot be sanctioned by vengeful actions or riotous demonstrations. No, the Right to Life will not be chartered by outbursts of physical violence. Our actions must embody this monumental goal; we must segregate villainous force from moral force. When light from our morality is used to judge the shadows cast by criminals, we must appraise ourselves and our laws by the same rays of ethics. To do otherwise places governments and judicial systems beyond the reach of mediated introspection, beyond the grasp of justice itself. By this beam of self-inspection, when a death sentence is dispatched we lift the offender to the moral equality of societal norms, and find ourselves standing deep inside the shadows of criminals. We shall not walk in those shadows. We will walk without the spectre of hypocrisy to haunt our footsteps. And as we walk, our steps bring us closer to a golden era that waits ahead. We cannot turn back. There are those who oppose the progression toward leniency. They raise statistics like a stoic hammer, driving the belief that executing murderers will reduce homicides. However, this interpretation does not add a nail in the coffin. Numbers are tools to add weight to debates; debates that must be continually cross-examined for applicability and accountability. Yet statistics are also the claw to the hammer's head, pulling out deterrence arguments by suggesting that legitimising murder through the death penalty actually raises the rate of homicides! So we will not be satisfied by statistics. We can never be satisfied as long as the guiltless are slaughtered. We cannot be satisfied when fallible humans are the judge and the jury to deadly trials. We can never be satisfied while the Press pilots our opinions with sensationalized stigma. No, no, we are not satisfied and we will not be satisfied until tolerance towers like the tallest of trees and forgiveness flowers like an endless forest. Let us be mindful that forgetfulness is not a bedfellow of forgiveness. To forget that many death row inmates committed terrible crimes would let befall a grave injustice. By the same token, to overlook that the dead can only be exonerated posthumously defiles the memory of innocent victims. Instead of incapacitation, let criminals atone for their crimes with positive contributions to society. Instead of martyrs, make them educators. Instead of miscreants, fashion them material makers. Instead of misfits, mold them as missionaries. Instead of being slain for malevolence, give them the chance to change. Even though we face the turmoil of retribution, we can see the tenets of redemption. Within these tenets, I, too, have a dream. I dream of a day when no human will have the right to revoke the life from another. I dream of a day when miscarriage of justice does not result in fresh flowers to a solitary grave, but in the freedom of an unjustly accused prisoner. I dream of a day when even the ghosts of Salem Massachusetts, whose deaths were inconceivably shackled to "spectral evidence", and whose memories still mock modern justice, may finally find peace. I dream of a people who understand that no heated crime warrants a cold resolution by death; that death is unjustly everlasting when pit against both fleeting and permanent transgressions; and that humane disciplines can meet the needs of society while being a fair reproach for felonies. I have a dream today! I dream of a world where we can judge our justice systems as though they were individuals: not by the colour of their skin, but by the content of their character. Where at the highest courts of international law we find that justice is morally, ethically, and logically consistent across all countries. I have a dream today! I dream of a world in which Mercy opens the Door of Knowledge to reveal that the real truth in any situation can never be known entirely. A world in which we are keenly aware that the whirlwind of motives, emotions, psyche, and actions behind a trial cannot be judged and punished with absolute conviction. A world that has cast off the rattling chains of death to embrace the foundations of life. I dream of a world without injustice buried within injustice. A world where the poverty line does not foreshadow a flatline. A world where the accused wealthy and the convicted poor face their fates with equal outcomes and equal opportunities. A world where the concept of just justice is not an ironic fairytale, but a practical reality. This is our dream, a dream inspired by an extraordinary man. In the spirit of Dr Martin Luther King Jr, a man who made an enormous march for liberty, these words strive to be an extension of his ideas, a continuation to his ideals. But this time the walk is for life. And along the road to the global abolishment of capital punishment sits a world that is one small step closer to unity. It is only through this journey will our collective conscience truly be free at last.

[Reply](#) | [Report Abuse](#)

 xupeng at 11:31 PM on 7/05/08

that is crazy to use a computer to judge one's death no matter how advanced that computer is. We can not let computer control our lives, even the lives of the death row inmates. Indulging computers may lead

disasters to humanity.

[Reply](#) | [Report Abuse](#)

 Goldowitz at 8:09 AM on 7/07/08

The implementation of the death penalty in the United States is certainly unfair; it overwhelmingly targets men, the uneducated, the mentally deficient, and of course, minority races. If you have any doubt that the death penalty is totally unjust take a hard look at some of the cases in Delfino and Day's books, Death Penalty USA 2005 - 2006, and Death Penalty USA 2003 - 2004. And no you don't need a PhD to read 'em!

[Reply](#) | [Report Abuse](#)

 Goldowitz at 8:10 AM on 7/07/08

The implementation of the death penalty in the United States is certainly unfair; it overwhelmingly targets men, the uneducated, the mentally deficient, and of course, minority races. If you have any doubt that the death penalty is totally unjust take a hard look at some of the cases in Delfino and Day's books, Death Penalty USA 2005 - 2006, and Death Penalty USA 2003 - 2004. And no you don't need a PhD to read 'em!

[Reply](#) | [Report Abuse](#)

 Goldowitz at 8:11 AM on 7/07/08

The implementation of the death penalty in the United States is certainly unfair; it overwhelmingly targets men, the uneducated, the mentally deficient, and of course, minority races. If you have any doubt that the death penalty is totally unjust take a hard look at some of the cases in Delfino and Day's books, Death Penalty USA 2005 - 2006, and Death Penalty USA 2003 - 2004. And no you don't need a PhD to read 'em!

[Reply](#) | [Report Abuse](#)



You will be asked to [sign in](#) or [register](#) as a SciAm.com member when you click submit.

2,573 characters remaining

[CLEAR](#) [SUBMIT](#)

Email me when someone responds to this discussion.

ALSO ON SCIENTIFIC AMERICAN



[Departing Plants and Animals to Protect Them from Climate Change](#)



[1998: Syphilis Genome Sequenced; 2008: Syphilis on the Rise](#)



[Gut Reaction: An Ulcer-Causing Bug May Also Help Prevent Asthma](#)



[The Environmental Effect on Puberty](#)



[Living with Cancer: Kris Carr's Story](#)

INFORMATION

About Us
Advertising
Privacy Policy
Terms of Use
Special Ad Sections

GoingGreen Conference
Site Map
Contact Us
Products & Services
SciAm Marketplace

PUBLICATIONS

Scientific American
Scientific American Mind
Scientific American Digital
Special Editions and Reports
International Editions

SERVICES

Subscribe
Renew
Subscriber Service
Gifts Subscriptions
Order Back Issues

SCIENTIFIC AMERICAN NEWSLETTERS

Get the latest science news delivered to your inbox in a few easy steps. Start by entering your e-mail address below.

[SIGN UP](#)

© 1996-2008 Scientific American Inc. All Rights Reserved. Reproduction in whole or in part without permission is prohibited.

ADVERTISEMENT



Science news delivered to you!
Scientific American [Topic RSS feeds: Physics, Technology, Health & more...](#)

[CLICK TO LEARN MORE](#)