

SCIENCE

Why Do Murderers Stick to Mathematical Pattern Known as the ‘Devil’s Staircase’?

Jan. 19, 2012 12:21am | Liz Klimas

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Researchers reviewing the famous Russian serial killer “Rostov Ripper”, who committed 53 murders, found that behavior of murderers may adhere to a pretty strict mathematical formula, suggesting that police could someday predict when another strike could occur.

The Daily Mail reports that Mikhail Simki and Vvani Roychowdhury from the University of California, Los Angeles believe that Andrei Chikatilo’s killings **adhered to a mathematical formula** called the “Devil’s Staircase.” They theorize that a killer sticks to this formula because of abnormal neural firings in their brains.

The Daily Mail explains further:

Killers are more likely to strike again directly after a murder, and their “murder probability” falls during long quiet periods — but it adheres to a broadly predictable pattern of killings.

The researchers think that the neural impulse to kill overwhelms the killer even after the “sedative” effect of killing — leading to ‘bursts’ of murderous activity.

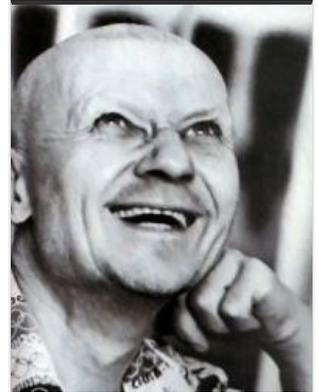
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“The probability of a new murder is significantly higher immediately after murder and is significantly lower when long time has passed since the last murder,” said the researchers.

Live Science (via [Fox News](#)) explains that the brain firing just one neuron results in a cascade of other neural firings, which if it exceeds the usually small threshold in a normal brain could induce abnormal behavior. In epileptics, this extreme amount of neural firing can result in seizures, for example:

James Fallon, a neuroscientist at UC Irvine who studies the brains of psychopaths, said the new findings are well-aligned with prior observations about serial killers, many of whom seem to behave similarly to drug addicts. In both cases, Fallon said, withdrawal from their addiction “builds and builds and then hits a threshold trigger point, after which they go on a spree to release that ‘longing.’”

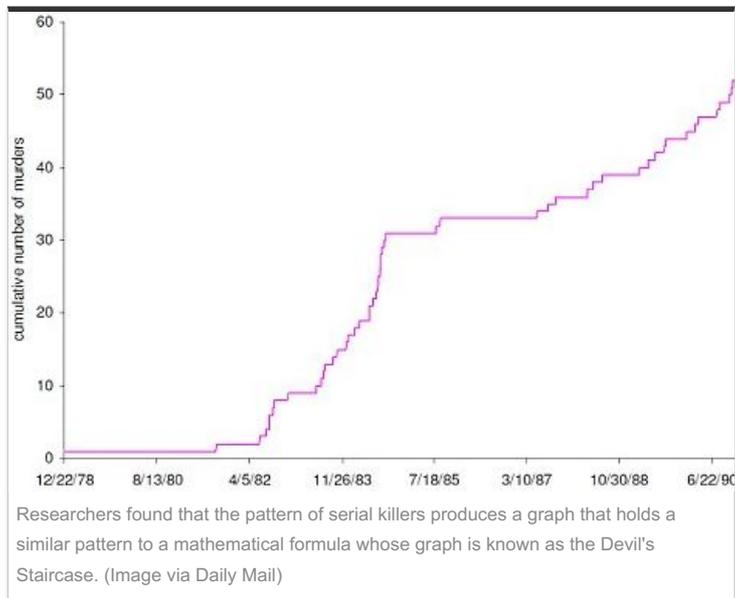
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Andrei Chikatilo (Image: Crime Life)

The Daily Mail reports that the shortest time between Chikatilo’s 1970 through 1990 murders was three days and the longest stretch was 986 days.

Another killer reviewed Peter Sutcliffe, or the Yorkshire Ripper, exhibited similar “rapid fire” killings with long stretches in between, leading researchers to think he was experiencing neurological “surges” as well, according to the Daily Mail.



The researchers acknowledge that prediction measurements need to be refined, but in doing so, they believe it could improve prediction capabilities for law enforcement tracking serial killers.

But, Live Science reports Amanda Pustilnik, an assistant professor at the University of Maryland School of Law, as saying that issues such as psychotic neural firings that caused the subject to murder others is not a case for innocence in court, although it could be used for a more lenient sentence.

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