



"Sequential unmasking: A means of minimizing observer effects in forensic DNA interpretation." **Journal of Forensic Sciences**. 2008;53(4):1006-7. I have also participated in numerous conferences (e.g. Gilder J, Krane D, Doom T, Raymer M. "Identifying patterns in DNA change." Proceedings of the 2003 Midwest Artificial Intelligence and Cognitive Science Conference, Cincinnati OH, April 2003). In addition, I have given numerous presentations to professional meetings on topics such as the analysis of human DNA profiles, analysis of DNA databases, and issues pertaining to DNA testing and interpretation.

2. I have been asked by Michael Burt, an attorney in the State of California, to provide this second affidavit in connection with a case identified to me under the names *State of Arkansas v. Jessie Misskelley Jr.* and *State of Arkansas v Damien Echols and Jason Baldwin*. My understanding is that this affidavit will be submitted to one or more courts by Mr. Burt on behalf of his client Jessie Misskelley, as well as on behalf of Damien Echols and Jason Baldwin. My first affidavit has previously been submitted to the Court
3. I have been provided a letter signed by Kermit Channell, Mary Robnett, and Cris Glaze dated May 27, 2008. The letter states:

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"In reviewing all of this data, it is noted that the quality and quantity of the results obtained are very limited and require extreme caution in its interpretation. In rendering an opinion of this data, one cannot overlook the facts in this case: The three victims in this case were nude and submerged in water for between 18 to 24 hours prior to discovery. It is very unlikely that any interpretable DNA profile other than that due to contamination or that of the victims would be recoverable. Based on the Bode analyst's letter, it is clear that the data provided is questionable at best. The analyst uses "possible" and "suggests" to describe the data. Amy Jeanguenat documents that there is clearly a "possible mixture" present, not a "mixture present". She also indicates "elevated baseline", "primer peaks", "and imbalance". It is clear that the data represented thus far by Bode, referenced above, is suspect at best. It is well documented that limited quantities of DNA, as noted in these samples and demonstrated by the quality of partial (at best) alleles obtained in this case, is too limited to render any opinion for comparison purposes. It is my opinion that the alleles and possible mixtures are due to contamination and/or stochastic effects and no conclusive interpretation is possible.

4. I must respectfully take issue with the conclusions stated in this letter, as they are unsupported either by the scientific literature or by the data in this case. As indicated in the correspondence from Bode attached to the letter, the conclusions stated in the letter are based not on a review of the raw data itself, but on "a CD with scanned copies of electropherograms and trays containing raw data for samples 2S04-114-050, -05E,34AB." Further, the conclusions in the letter are unsupported by any objective statistical analysis of the data. Instead, the letter simply reasserts an unsupported opinion that "the alleles and possible mixtures are due to contamination and/or stochastic effects and no conclusive interpretation is possible." Further, the "elevated baseline" can also be observed in the

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reagent blank, which has been taken into account when calculating the limits of detection (LOD) and quantitation (LOQ).

5. By contrast, the conclusions of Dr. Krane and myself are based on an analysis of the raw data itself using Genophiler<sup>®</sup>. As indicated in my first affidavit, Genophiler<sup>®</sup> is a generally accepted automated software tool for DNA evidence review. Genophiler<sup>®</sup> objectively analyzes the raw electronic data using the same software as the testing lab, using the same parameters employed by a testing laboratory and also at a lower RFU threshold to provide as much information as possible (including the potential for minor contributors that may be hidden by the testing lab's threshold and/or analyst overrides).
6. Dr. Krane and myself also utilized a limit of detection (LOD) analysis, which is a statistically based minimum peak height threshold that determines the height at which signal can be distinguished from noise. Similarly, a limit of quantitation (LOQ) is the height at which signal can not only be distinguished from noise but the amount of signal can be reliably measured. The methodology for employing an LOD or LOQ has been in use in analytical chemistry for several decades. A developmental validation study for the use of LODs and LOQs in STR DNA testing

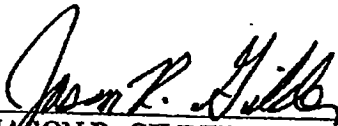
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results has been published (J. Gilder, T. Doom, K. Inman, and D. Krane. "Run-specific limits of detection and quantitation for STR-based DNA testing." Journal of Forensic Sciences. 2007;52(1):97-101). It has also been discussed and presented at a national meeting of the American Academy of Forensic Sciences (D. Krane. "Run-specific limits of quantitation and detection (an alternative to minimum peak height thresholds)." American Academy of Forensic Sciences (AAFS) 59th annual meeting, San Antonio, TX. February 2007). The use of the methodology in this case allows Dr. Krane and myself to scientifically distinguish signal from noise.

7. Importantly, the May 27, 2008 letter does not take issue with either the Genophiler<sup>®</sup> analysis or the LOD approach. There is thus nothing in the letter which causes me to reevaluate or question my original analysis. I therefore adhere to the conclusions stated in my first affidavit.
8. If called to testify in court, I would provide truthful and accurate testimony about all the subjects that I have covered here."

Further the affiant sayeth naught.

IN WITNESS WHEREOF, I hereunto set my hand this 11th day of AUGUST, 2008.

  
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JASON R. GILDER

001169

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Subscribed and sworn to before me this 11<sup>th</sup> day of August, 2008.

*Amy Puckett*

Notary Public



My commission expires:

Amy K. Puckett  
Notary Public, State of Ohio  
My Commission Exp.  
Oct. 28, 2012

001170