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As of: Sep 11, 2008

**UNITED STATES OF AMERICA, v. RUDY FRABIZIO, Defendant.**

**CRIM. NO. 03-10283-NG**

**UNITED STATES DISTRICT COURT FOR THE DISTRICT OF  
MASSACHUSETTS**

*2006 U.S. Dist. LEXIS 21369*

**April 20, 2006, Decided**

**April 20, 2006, Filed**

**SUBSEQUENT HISTORY:** Motion granted by *United States v. Frabizio*, 2006 U.S. Dist. LEXIS 56327 (D. Mass., Aug. 11, 2006)

**PRIOR HISTORY:** *United States v. Frabizio*, 341 F. Supp. 2d 47, 2004 U.S. Dist. LEXIS 21559 (D. Mass., 2004)

**COUNSEL:** [\*1] For Rudy Frabizio (1), Defendant: Miriam Conrad, Public Defender or Community Defender Appointment, Boston, MA.

For USA, Plaintiff: Dana M. Gershengorn, U.S. Department of Justice, Washington, DC; Seth P. Berman, United States Attorney's Office, Boston, MA.

**JUDGES:** NANCY GERTNER, United States District Judge.

**OPINION BY:** NANCY GERTNER

**OPINION**

GERTNER, D.J.:

**MEMORANDUM AND ORDER RE: SUBMISSION  
OF ADDITIONAL FILINGS**

April 20, 2006

**I. INTRODUCTION**

In *Ashcroft v. Free Speech Coalition*, 535 U.S. 234, 122 S. Ct. 1389, 152 L. Ed. 2d 403 (2002), the Supreme Court held that possession of virtual pornography -- images created on a computer without the participation of a real child -- cannot constitute a criminal offense. The Court so held even while recognizing that, as time goes on, it may become more and more difficult to distinguish the real from the virtual. As the Court noted:

The Government says that the possibility of producing images by using computer imaging makes it very difficult for it to prosecute those who produce pornography by using real children. Experts, we are told, may have difficulty in saying whether the pictures were made by using real children or by using computer [\*2] imaging. The necessary solution, the argument runs, is to prohibit both kinds of images. The argument, in essence, is that protected speech may be banned as a means to ban unprotected speech. This analysis turns the *First Amendment* upside down.

The Government may not suppress lawful

speech as the means to suppress unlawful speech. Protected speech does not become unprotected merely because it resembles the latter.

*Ashcroft v. Free Speech Coalition*, 535 U.S. at 254-55.

In the instant case, the government has offered the testimony of an "image analysis" expert, Thomas Musheno. Based on his experience as a photograph examiner for the FBI, Musheno proposes to testify as to whether or not the allegedly pornographic images at issue in this case depict real children. Defendant Rudy Frabizio, charged with possession of child pornography, has moved to exclude that testimony. Defendant alleges that Musheno is not a qualified expert and that his testimony cannot survive the Court's gatekeeping function under *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579, 113 S. Ct. 2786, 125 L. Ed. 2d 469 (1993).

After carefully reviewing the parties' filings and the testimony from the three [\*3] day Daubert hearing, this Court continues to have questions about the factual and legal issues raised by defendant's Daubert motion. The parties are therefore invited to submit further filings and request additional argument on the issues described below.

## II. DISCUSSION

Central to the Court's analysis is this question: Whether, using current technology and without unreasonable cost, it is possible to create an image that appears real to the naked eye but is, in fact, one hundred percent computer-generated. The answer to that question determines the answer to three others:

(1) Is expert testimony required to distinguish the real from the virtual, given the current state of technology, or is this a lay enterprise? Most courts that have visited this issue found that lay examination was sufficient; our court, the First Circuit, has vacated an earlier decision requiring expert testimony.<sup>1</sup> This issue is a factual one that must be reexamined periodically, as the technology evolves. The easier it is to create virtual pornography indistinguishable from the real -- without specialized equipment or unreasonable costs -- the more essential expert testimony becomes.

<sup>1</sup> See discussion in part B, *infra*.

[\*4] (2) Given the state of the technology, what *type* of expertise enables someone to distinguish virtual from real? If it is extraordinarily difficult to create life-like virtual images, then it may well be that an expert in photographic images will suffice as an expert who can identify signs of manipulation. On the other hand, if software can readily be used to create virtual images, then perhaps the skills of a computer expert are required.<sup>2</sup>

<sup>2</sup> The government initially offered the testimony of Professor Hany Farid, a Dartmouth College professor of computer science and neuroscience. Professor Farid sought to distinguish real from computer-generated images solely through specialized equipment, namely the computer, rather than just visual inspection as does Musheno. Farid's computer program purported to measure statistical consistencies within photographs and computer-generated images to determine whether an image is real or computer-generated. After one day of a hearing, the government withdrew Dr. Farid as an expert witness. Defense counsel raised the fact that 30 percent of the time "the SVM [Farid's program] classified a photograph [i.e. a real image] as a computer-generated image. And she highlighted those errors -- obviously false images, indeed of cartoon characters (e.g. "Zembad," a surrealistic dragon), Farid's program identified as photographs.

[\*5] (3) Given the current state of technology, with what degree of probability or reliability can this determination -- real or virtual -- be made? Mr. Musheno seeks to testify that certain images "are" real, while others "appear to be" real. Does this distinction make sense given the state of the technology in general or the facts of this case in particular? For example, even if a sophisticated computer graphics expert can create a perfect virtual image, the images in this case may be so rough that a more definitive answer could be given about whether the images are "real" or "not real."

### A. Distinguishing Real and Virtual Images

Musheno explained that when evaluating images, he looks for signs of manipulation -- that is, signs that a picture of a real child had been tampered with. The premise of the cross-examination, however, was that a picture that was wholly virtual would not show the same signs of manipulation as would a real picture. (Daubert

Hr'g Tr. 90-91, May 6, 2005.) Arguably, if a picture is wholly virtual, it can be transformed on the computer without creating the internal inconsistencies indicative of manipulation; it could therefore escape Musheno's detection.

[\*6] The only testimony concerning how difficult or easy it was to create wholly virtual images was Musheno's comment that he thought the creation of virtual child pornography that was indistinguishable from real images was "possible, but not probable." *Id.* at 126.

Academic literature on the issue weighs in both directions. This Court has encountered articles suggesting that "creating realistic images of people. . . continues to be very difficult, with the difference between a real picture and one created by a computer, even using today's best technology, being discernable to the human eye." Susan S. Kreston, *Defeating the Virtual Defense in Child Pornography Prosecutions*, 4 *J. High Tech. L.* 49, 62 (2004). Kreston suggests that even if it were technically feasible, production of such images would be prohibitively expensive and time consuming. *Id.*

At the same time, however, others suggests that such virtual image creation can be achieved using current technology. One article suggests that "experts cannot know whether a digital image is real or virtual." Timothy J. Perla, *Attempting to End the Cycle of Virtual Pornography Prohibitions*, 83 *B.U. L. Rev.* 1209, 1216 (2003).

#### [\*7] **B. Who Can Distinguish Images**

This initial question about whether images can be distinguished is closely linked to a second inquiry: Who has the ability to distinguish images of real children (which are illegal) from manipulated pictures of adults or wholly virtual images (both of which are legal)? Other circuits have held that a jury can, on its own, distinguish the real from the virtual. See, e.g., *United States v. Irving*, 432 *F.3d* 401, 412-13 (2d Cir. 2005) (" [W]e decline to hold the government is required . . . to present expert testimony proving the children in the unlawful images are in fact real children. . . . [A] reasonable jury could conclude that the images depicted real children solely on the basis of the images themselves."); *United States v. Kimler*, 335 *F.3d* 1132, 1142 (10th Cir. 2003) *cert. denied*, *Kimler v. United States*, 540 *U.S.* 1083, 124 *S. Ct.* 945, 157 *L. Ed. 2d* 759 (2003) ("Juries are still capable of distinguishing between real and virtual

images."). The First Circuit, the only one to consider requiring additional evidence beyond the images themselves, vacated its decision. See *United States v. Hilton*, 363 *F.3d* 58 (1st Cir. 2004), [\*8] *vacated*, 2004 *U.S. App. LEXIS* 19528 (1st Cir. 2004) .

Whether an expert is required to assist the jury in making the virtual-real distinction is a factual question dependent on the evolving technology and the particular case. Moreover, whether this determination is within the competence of the jury also affects the kind of expert that may be proffered. Even if the jury can make the real versus virtual determination on its own, an expert may be helpful. In that case, an expert in photography and image manipulation like Musheno would suffice simply as an experienced, sophisticated observer. In contrast, if the technology has evolved to the point that this is beyond lay competence, an expert may not only be necessary, but the determination may require a different kind of expert, namely, one well-versed in computer graphics or computer design.

#### **C. Reliability**

Assuming that virtual images cannot be created that are indistinguishable from real ones and, further, that an expert's testimony would be helpful to the jury, the question then arises as to what type of conclusion that expert may reliably draw. Musheno testified that he had never been tested to determine [\*9] the accuracy with which he can distinguish real, manipulated, and virtual images. (Daubert Hr'g Tr. 64, May 6, 2005.) What impact should this have on his qualification to testify with one hundred percent certainty that he believes particular images are either real or virtual? Is his expertise limited to saying that there are no signs of manipulation in an image, rather than opining conclusively that the images are real? With what level of certainty can Musheno reasonably propose his conclusions to the jury? Any evidence concerning the reliability of the field or the proficiency of the proposed expert or addressing the question of the scope of the proposed expert's expertise would assist the Court in addressing these issues.

### **III. CONCLUSION**

In light of these outstanding questions, the Court is not prepared to rule on the Frabizio's Daubert motion at this time. Instead, the parties are invited to submit further briefing on the issues discussed herein. The parties have until **May 31, 2006**, to submit such filings and request a

hearing, if appropriate.

**Date: April 20, 2006**

**SO ORDERED.**

**/s/NANCY GERTNER, U.S.D.J.**

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