

# The Camera and the Truth: Metadata, Deepfakes, and the Vagaries of Video

**ROBERT HIGGASON**  
Senior Assistant City Attorney  
CITY OF HOUSTON

Presented to  
TEXAS POLICE CHIEFS ASSOCIATION  
LEGAL ADVISOR TRACK  
2023 ANNUAL CONFERENCE  
Fort Worth, Texas  
April 4, 2023

# The Camera and the Truth

Video is everywhere.

And it can have serious legal impact.

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And it can have serious legal impact.

Does the camera reveal the truth?  
Or does it obscure it?

# Pleadings or Video?

*Scott v Harris*, 550 U.S. 372 (2007):

The first step in assessing the constitutionality of Scott's actions is to determine the relevant facts. As this case was decided on summary judgment, there have not yet been factual findings by a judge or jury, and respondent's version of events (unsurprisingly) differs substantially from Scott's version. When things are in such a posture, courts are required to view the facts and draw reasonable inferences "in the light most favorable to the party opposing the [summary judgment] motion."

*United States v. Diebold, Inc.*, 369 U.S. 654, 655 (1962) (per curiam).

*Id.* at 378 (some citations omitted).

# Pleadings or Video?

*Scott v Harris* (cont'd)

In **qualified immunity** cases, this **usually** means adopting (as the Court of Appeals did here) the **plaintiff's version** of the facts.

*Id.*

# Pleadings or Video?

*Scott v Harris* (cont'd):

There is, however, an added wrinkle in this case: existence in the record of a videotape capturing the events in question. There are no allegations or indications that this videotape was doctored or altered in any way, nor any contention that what it depicts differs from what actually happened.

*Id.*

# Pleadings or Video?

*Scott v Harris* (cont'd):

The videotape quite clearly contradicts the version of the story told by respondent and adopted by the Court of Appeals. For example, the Court of Appeals adopted respondent's assertions that, during the chase, "there was little, if any, actual threat to pedestrians or other motorists, as the roads were mostly empty and [respondent] remained in control of his vehicle." 433 F.3d, at 815. Indeed, reading the lower court's opinion, one gets the impression that respondent, rather than fleeing from police, was attempting to pass his driving test:

*Id.* at 378-79.

# Pleadings or Video?

*Scott v Harris* (cont'd):

“[T]aking the facts from the non-movant’s viewpoint, [respondent] remained in control of his vehicle, slowed for turns and intersections, and typically used his indicators for turns. He did not run any motorists off the road. Nor was he a threat to pedestrians in the shopping center parking lot, which was free from pedestrian and vehicular traffic as the center was closed. Significantly, by the time the parties were back on the highway and Scott rammed [respondent], the motorway had been cleared of motorists and pedestrians allegedly because of police blockades of the nearby intersections.” *Id.*, at 815–816 (citations omitted).

*Id.* at 379.

# Pleadings or Video?

*Scott v Harris* (cont'd):

The videotape tells quite a different story. There we see respondent's vehicle racing down narrow, two-lane roads in the dead of night at speeds that are shockingly fast. We see it swerve around more than a dozen other cars, cross the double-yellow line, and force cars traveling in both directions to their respective shoulders to avoid being hit. We see it run multiple red lights and travel for considerable periods of time in the occasional center left-turn-only lane, chased by numerous police cars forced to engage in the same hazardous maneuvers just to keep up.

*Id.* at 379-80.

# Pleadings or Video?

*Scott v Harris* (cont'd):

Far from being the cautious and controlled driver the lower court depicts, what we see on the video more closely resembles a Hollywood-style car chase of the most frightening sort, placing police officers and innocent bystanders alike at great risk of serious injury.

*Id.* at 380.

# Pleadings or Video?

*Scott v Harris* (cont'd):

At the summary judgment stage, facts must be viewed in the light most favorable to the nonmoving party **only if there is a “genuine” dispute** as to those facts. Fed. Rule Civ. Proc. 56(c). As we have emphasized, “[w]hen the moving party has carried its burden under Rule 56(c), its opponent must do more than simply show that there is some metaphysical doubt as to the material facts .... **Where the record taken as a whole could not lead a rational trier of fact to find for the nonmoving party, there is no ‘genuine issue for trial.’**” *Matsushita Elec. Industrial Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586–587 (1986) (footnote omitted).

*Id.*

# Pleadings or Video?

*Scott v Harris* (cont'd):

“[T]he mere existence of some alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment; the requirement is that there be no *genuine issue of material fact*.”  
*Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247–248 (1986).

*Id.*

# Pleadings or Video?

*Scott v Harris* (cont'd):

Full 16-minute video from Supreme Court record:

[http://www.supremecourtus.gov/opinions/video/scott\\_v\\_harris.html](http://www.supremecourtus.gov/opinions/video/scott_v_harris.html).

A 6-minute version of the video on YouTube:

<https://www.youtube.com/watch?v=qrVKSgRZ2GY>

# Pleadings or Video?

*Scott v Harris* (cont'd):

When opposing parties tell two different stories, one of which is **blatantly contradicted** by the record, so that **no reasonable jury** could believe it, **a court should not adopt that version of the facts** for purposes of ruling on a motion for summary judgment.

*Id.*

# Pleadings or Video?

*Scott v Harris* (cont'd):

That was the case here with regard to the factual issue whether respondent was driving in such fashion as to endanger human life. Respondent's version of events is **so utterly discredited by the record that no reasonable jury could have believed him**. The Court of Appeals should not have relied on such visible fiction; it should have viewed the facts in the light depicted by the videotape.

B

Judging the matter on that basis, we think it is quite clear that Deputy Scott did not violate the Fourth Amendment.

*Id.* at 380-81.

# What is the problem?

Civil rights plaintiffs are beginning to complain:

- Video cannot be trusted to accurately reflect the encounter between officer and suspect.
- Video has been altered or fabricated.
- Video did not show what officer said.
- Video was off.
- Audio was not on.

# What is the problem?

Allegation from a plaintiff's complaint in a civil rights case against the City of Houston and several of its officers:

334. The City of Houston fabricated evidence against Plaintiff altering the captured body-worn camera footage presented to the court and to Plaintiffs.

# What is the problem?

Allegation from a complaint in a civil rights case against the City of Houston and several of its officers:

334. The City of Houston fabricated evidence against Plaintiff altering the captured body-worn camera footage presented to the court and to Plaintiffs.

335. Defendants later represented that perhaps the altered video may be a video of a video and no explanation as to the reason the original video was not made available or filed with the court.

# What is the problem?

From the district court's memorandum and order dismissing plaintiffs' claims:

Allen says that the City “altered and edited videos of the November 4, 2015, shooting for purposes of avoiding liability and accountability,” the chain of custody is “questionable,” the City withheld evidence, and the officers planted the white gun.

This is the textbook example of a legal conclusion. He does not say how the videos were altered. Allen again is confused by the distinction between plausible, objective facts and legal conclusions. Allen has transformed the case into a broken record.

ROA.21-20337.1383.

# Metadata

## What Is Video Metadata?

Metadata is the data behind other data – “other data” in this case referring to content data – where video metadata is basically the data behind videos. It is a type of descriptive data that helps a person or a computer identify the characteristics of a file. For example, metadata for a Microsoft Word document includes such things as: file size, author and date of creation, but there are countless more different types of both visible and hidden metadata to help identify the characteristics of the specific file.

<https://www.vidispine.com/video-metadata-management#:~:text=Metadata%20of%20a%20video%20file,%20upload%2C%20and%20camera%20ID.>

# Metadata

## From expert's exhibit attached to plaintiffs' motion for new trial:

### Meta Data File information

When reviewing the meta data information for each of the video files, the file "000293 VTS\_01\_1 (Hayes).mp4" maintains a file storage size of 19.0 MB. When compared against the video file "VTS\_01\_1.VOB", it maintains a much larger video file at 280 MB for the same event. This is due in part by the size of the display and the amount of byte data it uses to encode (create) the video file (e.g., the larger the file size, the higher the quality)

Another observation regarding the unstable video file which indicates it is not an original video file from the BWC is it's "creation date". When examining the creation date, it was noted the video file was created on 2/24/2018 at 4:54 PM. This is in stark contrast to the date/timestamp information on the BWC display of 11/4/2015 at approximately 06:36.

ROA.21-20337.7.

# Metadata

## From expert's exhibit attached to plaintiffs' motion for new trial:

Summary | Opinion

Based upon the examination of the video files provided, it was determined that;

- The two video files in question are not the same files as they utilize two completely different video formats.
- Both videos different in their video encoding compression schemes (meaning video display quality) and their pixel aspect ratio displays are dramatically different.
- Additionally, the video file *"000293 VTS\_01\_1 (Hayes).mp4"* removes visual information when played that *is present* on the video file *"000293 Hayes VTS\_01\_1.VOB"*.

ROA.21-20337.10.

# Metadata

Assertions from defendants' response to plaintiffs' motion for new trial, same case:

Significantly, it appears the so called “altered” video provided to the expert for analysis was created on March 17, 2021. (See Exhibit 2, Affidavit of Rob Howelton). Although the “expert analysis” purportedly concludes that the video was created on February 24, 2018, each of the **metadata** attachments show the video was created on either March 17, 2021, or March 25, 2021 (Doc. #115-1 at 8, 21, 22). The only 2018 date is associated with a file created using Apple software (QuickTime MOV), with a tagged date (not a creation or video date) of February 25, 2018. *Id.* at 22.

ROA.21-20337.1503 (footnote omitted).

# Metadata

Assertions from defendants' response to plaintiffs' motion for new trial, same case:

Finally, Plaintiff still fails to identify how the alleged alteration, if any, is **material**. The so called "altered" video does not aid the defense or conceal evidence favorable to the Plaintiff. Plaintiff did not need an expert to show that the alleged "altered" video is "not the same" as the original video. (Doc. #115-1 at 2). Any **lay person can see that the allegedly "altered" video looks like a video of the body-worn camera (BWC) recording,** with a shaky time stamp.

ROA.21-20337.1503.

# Metadata

From expert's exhibit attached to defendants' response to motion for new trial:

On or about April 5, 2021, I was provided a copy of a video on a flash drive that was alleged by Plaintiffs counsel to have been altered. I analyzed the content, time stamp, and properties of this allegedly altered video, and I immediately noticed the allegedly altered video had a jittery and shaking time stamp on it. In contrast, the timestamp on the original body worn camera ("BWC") video is embossed in a block format that is stationery. In the alleged altered video of the BWC, the timestamp is jittery, and the video images are shaky.

ROA.21-20337.1509.

# Metadata

From expert's exhibit attached to defendants' response to motion for new trial:

Furthermore, a comparison of the original BWC video with this allegedly altered video suggests that the alleged altered video is actually someone's hand-held recording of the original BWC video. My analyses of the "alleged altered video" file on the flash drive provided by Plaintiffs counsel shows that this recording of the original BWC, that Plaintiff calls "altered video" was created on March 18, 2021 at 1:36 am.

ROA.21-20337.9-10.

# Metadata

From expert's exhibit attached to defendants' response to motion for new trial:

I have also reviewed the Plaintiffs video analysis, which was filed as Plaintiff's Motion for New Trial supplemental exhibit #2 [Doc. # 115-01]. Although on page 7 it states that the allegedly altered video "was created on February 24, 2018 at 4:54 PM", the **metadata** provided within supplemental exhibit #2 for the various files states that the video was created March 17, 2021 or March 25, 2021.

ROA.21-20337.10.

# Metadata

From expert's exhibit attached to defendants' response to motion for new trial:

One does not need to be an IT specialist to compare the original BWC video with what Plaintiff calls an “altered video” to determine that the alleged “altered video” is simply someone recording the original BWC, as opposed to actually altering the original video.

ROA.21-20337.10.

# Metadata

From district court's order denying plaintiffs' motion for new trial:

John Allen, Jr., has given no newly discovered facts or reliable evidence. He merely restates the same legal conclusions as his complaint. Allen's motion . . . is denied.

ROA.21-20337.1511.

# Metadata

Assertion in appellants' brief, same case:

Second set of videos ordered by the appellate court were altered with missing content with **different metadata** from the first videos ROA.955, 1470-1495, 1164-1165[.]

\* \* \*

Plaintiff hand-delivered a USB drive: two videos (**Original** and **fabricated**) disc referred to in the Court's March 24, 2021, order on April 9, 2021.ROA. 1373-1375[.]

Appellants' Brief at 35, 43; *Allen v. Hayes*, No. 21-20337 in the U.S. Court of Appeals for the Fifth Circuit

# Metadata

Assertions from defendants' appellees' brief, same case:

Plaintiffs' conclusory allegations that the City "altered and edited the videos...for purposes of avoiding liability and accountability" are inflammatory, unsupported, and untrue. ROA.1165-1166.

\* \* \*

[T]he City has provided both the district court and Plaintiffs video evidence taken on the night of the incident at the scene of the incident which shows a pistol matching Hayes' description of the Decedent's handgun located inside the truck passenger compartment.

Appellees' Brief at 33-34; *Allen v. Hayes*, No. 21-20337

# Metadata

## *Collie v. Barron*

Collie renews his objection on appeal that reality trumps Barron's perception, and disputed interpretations of the dash cam video create genuine issues that should preclude summary judgment. But in *Scott v. Harris*, 550 U.S. 372, 380-81 (2007), the Supreme Court held that dash cam footage was so clear no reasonable jury could accept the plaintiff's version of events. Here, too, a review of the video confirms that **even without sound or metadata**, Officer Barron's actions were reasonable under the circumstances.

747 F. App'x 950, 953 (5th Cir. 2018)

# Deepfakes

“But that’s not the way it happened.”

[https://www.youtube.com/watch?v=QHGc\\_d45Yus&t=40s](https://www.youtube.com/watch?v=QHGc_d45Yus&t=40s)

# Deepfakes

“But usually it doesn’t happen like that.”

*The Capture*—current British TV series (fiction) about using deepfakes.

Body language of person in video of assault did not. A clue that led to investigation and eventual discovery that the video was fabricated.

# Deepfakes

“But usually it doesn’t happen like that.”

*The Capture*—current British TV series (fiction) about using deepfakes.

Body language of person in video of assault did not. A clue that led to investigation and eventual discovery that the video was fabricated.

“Creating the evidence to support the intelligence.”

# Deepfakes

Bill Hader or Tom Cruise?

<https://www.youtube.com/watch?v=2daN4eRTs4A>

# Deepfakes

## Audio manipulation

Getting someone to say something on video that he didn't really say.

<https://www.youtube.com/watch?v=WLYHu0AG8GI>

# Deepfakes

But is this really a serious problem?

# Deepfakes

POLICE BODY-WORN CAMERAS: WHAT PROSECUTORS NEED TO KNOW  
Kristine Hamann, 49-SEP PROSC 22 (2017)

“DEEPPFAKES” IN THE COURTROOM  
Riana Pfefferkorn, 29 Boston U. Pub. Int, L.J. 245 (Summer 2020)

“REJECT THE EVIDENCE OF YOUR EYES AND EARS”: DEEPPFAKES AND  
THE LAW OF VIRTUAL REPLICANTS  
Elizabeth Caldera, Comment 50 Seton Hall L. Rev. 177 (2019)

# Deepfakes

OUT OF OUR DEPTH WITH DEEP FAKES: HOW THE LAW FAILS VICTIMS OF DEEP FAKE NONCONSENSUAL PORNOGRAPHY

Kate Kobriger, Janet Zhang, Andrew Quijano, Joyce Guo, 28 Rich. J.L. & Tech. 204 (2021)

EVIDENCE FORENSICS—EXPOSING TAMPERED RECORDINGS

Doug Carner, 39-FEB Champion 44 (2015)

DON'T LET THEM FAKE YOU OUT: HOW ARTIFICIALLY MASTERED VIDEOS ARE BECOMING THE NEWEST THREAT IN THE DISINFORMATION WAR AND WHAT SOCIAL MEDIA PLATFORMS SHOULD DO ABOUT IT

Shannon Sylvester, 73 Fed. Comm. L.J. 369 (2021)

# Deepfakes

## DEEPPFAKES AND THE WEAPONIZATION OF DISINFORMATION

Nina I. Brown, 23 Va. J.L. & Tech. 1 (2020)

## DEEPPFAKE VIDEOS: WHEN SEEING ISN'T BELIEVING

Holly Kathleen Hall, 27 Cath. U. J. L. & Tech. 51 (2018)

## DEEP FAKES: A LOOMING CHALLENGE FOR PRIVACY, DEMOCRACY, AND NATIONAL SECURITY

Bobby Chesney, Danielle Citron, 107 Cal. L.R. 1753 (2019)

# Deepfakes

## DIGITAL FORENSICS, DEEPFAKES, AND THE LEGAL PROCESS

Agnes E. Venema, Zeno J. Geradts, PhD, 16 No. 4 ABA SciTech Law. 14 (Summer 2020)

## DEEPFAKES: FALSE PORNOGRAPHY IS HERE AND THE LAW CANNOT PROTECT YOU

Douglas Harris, 17 Duke L. & Tech. Rev. 99 (2019)

# Deepfakes

How hard is it to make a deepfake?

# Deepfakes

How hard is it to make a deepfake?

[https://play.google.com/store/apps/details?id=video.reface.app&hl=en\\_CA&pli=1](https://play.google.com/store/apps/details?id=video.reface.app&hl=en_CA&pli=1)

<https://www.faceapp.com/>

Many more.

# Deepfakes

What about more realistic deepfakes?

# Deepfakes

What about more realistic deepfakes?

Dalí Lives

<https://youtu.be/BIDaxl4xqJ4>

# Deepfakes

## **Warnings about continued experiments and developments in High-level Artificial Intelligence (which includes deepfakes)**

“Pause Giant AI Experiments: An Open Letter” from the Future of Life Institute:

“We call on all AI labs to immediately pause for at least 6 months the training of AI systems more powerful than GPT-4.”

Signatures

4451

<https://futureoflife.org/open-letter/pause-giant-ai-experiments/>

# Deepfakes

More warnings about AI technology (which includes deepfakes):

“Elon Musk among experts urging a halt to AI training”

Chris Vallance, BBC News (March 30, 2023)

<https://www.bbc.com/news/technology-65110030>

“ ‘If We Go Ahead on This Everyone Will Die’ Warns AI Expert Calling for Absolute Shutdown”

Naveen Athrappully, Epoch Times (April 2, 2023)

[https://www.theepochtimes.com/if-we-go-ahead-on-this-everyone-will-die-warns-ai-expert-calling-for-absolute-shutdown\\_5163074.html?utm\\_source=andshare](https://www.theepochtimes.com/if-we-go-ahead-on-this-everyone-will-die-warns-ai-expert-calling-for-absolute-shutdown_5163074.html?utm_source=andshare)

# Take a Breath

Even if not a deepfake, and if no credible claim of tampering, it matters if the video is clear or vague.

# Vagaries of Video

When the video isn't clear and must be explained, it goes to the factfinder.

# Vagaries of Video

## *Aguirre v City of San Antonio*

Our review of the videos also does not indicate that Aguirre was resisting, struggling, or at all uncooperative when the Officers walked him over to the hood of the car. It is at best **unclear from the video** whether or how much Aguirre was moving once he was bent over the car; the video very nearly confirms that Aguirre was not resisting.

995 F.3d 395, 411 (5th Cir. 2021)

# Vagaries of Video

## *Smith v. Packnett*

The video evidence, however, is little more than **three short and unclear video images recorded by a cell phone**. In the first clip, Smith appears to be addressing the committee; in the next clip, Packnett is handcuffing Smith; the final clip captures Packnett escorting Smith from the courtroom. The video does not capture Packnett's initial contact with Smith, and the contact it does capture is not fluid. There is no video evidence of what transpired in the time before and between the clips.

339 F. App'x 389, 392 (5th Cir. 2009) (cont'd on next page)

# Vagaries of Video

## *Smith v. Packnett* (cont'd)

Contrary to Packnett's assertion, whether he grabbed Smith's arm at the same time he instructed her to desist is material to whether Packnett arrested Smith without probable cause. Packnett's act of grabbing Smith's arm arguably could constitute an arrest, depending on how other facts relating to the disturbance develop. Although at that moment Smith may not have been formally under arrest, a jury could find that Smith "would have understood the situation to constitute a restraint on freedom of movement of the degree which the law associates with formal arrest."

*Id.*

# Vagaries of Video

## *Brown v. Lynch*

Although some degree of resistance is evident,<sup>45</sup> whether that resistance continued after Brown was taken to the ground and before Officer Lynch began striking him again is unclear from the video.

\* \* \*

The part of Brown's body absorbing the blows is unclear from the video.

524 F. App'x 69, 80-81 (5th Cir. 2013) (reversing and remanding).

# Vagaries of Video

## *Curran v. Aleshire*

Neither Curran's battery conviction nor the photographic and video evidence conclusively resolves the factual disputes identified by the district court in its summary judgment order. These factual disputes are material to Aleshire's qualified immunity defense. Accordingly, we DISMISS the appeal for lack of jurisdiction.

800 F.3d 656, 664 (5th Cir. 2015)

# Vagaries of Video

## *Ramirez v. Martinez*

The contents of the video are too uncertain to discount Ramirez's version of the events under Scott. When the videotape begins, Martinez and Ramirez are already yelling at each other. A struggle ensues, but it is unclear exactly what or who precipitates and what constitutes that struggle.

\* \* \*

Although the video shows the struggle described above, it does not clearly show a punch or every particular element of the altercation. The video does not blatantly contradict Ramirez's version of the facts; accordingly, we view the evidence in the light most favorable to Ramirez.

# Vagaries of Video

## *Byrd v. Cornelius*

As requested by the Defendants, we have viewed the video in question numerous times. The footage is only fifteen seconds long and lacks audio. It shows Byrd talking on her phone when the officers confront her, and Cornelius grabs her arm. In response, Byrd appears to swat at or strike Cornelius. The video becomes unclear as the officers and Byrd move their confrontation outside.

\* \* \*

The video evidence does not conclusively resolve the factual disputes identified by the district court in its summary judgment proceedings. These factual disputes are material to Cornelius' and Sweetin's qualified immunity defense. Thus, we DISMISS the appeal for lack of jurisdiction.

52 F.4th 265, 272 (5th Cir.2022)

# Vagaries of Video

When the video doesn't show something.  
Outside the field of view.

# Summary

- Video helps
- Must be clear
- Allegations of tampering must be supported
- Be prepared to defend with experts
- Deep fakes will become more of a problem

END

# Audio Manipulation

## BONUS SLIDE

### Trump and World Leaders

[https://www.youtube.com/watch?v=NI0\\_mEMaTyE](https://www.youtube.com/watch?v=NI0_mEMaTyE)