The use of video technology is becoming increasingly common in litigation (see The Jury Expert: Visual Evidence). For example, consider how video was used in the second trial of Jason Young, a man charged with the murder of his wife. After watching a video tour of the murder scene, complete with the bloody footprints from the defendant’s 2 year old daughter as well as the body of the victim lying amid blood splatter, jurors were presented with Young’s videotaped testimony from his first murder trial so that the prosecution could point out inconsistencies in his story. These “riveting” images were projected on a large screen for all in the courtroom to see (Huffman, 2012, para 34). Ultimately, Young was found guilty of murder (Klaiss, & Curry, 2012)—although subsequent appeal resulted in the scheduling of a third trial.

In the case detailed above, attorneys used large video images to make their point. However, courtroom presentations can range from video images on small screens in the jury box to images on big screen television monitors, to large format projection screens (Siemer, Rothschild, Bocchino, & Beskind, 2002). Does video image size affect how other trial components are evaluated? Researchers have considered perceptions of witnesses in live versus video presentations (Landström, Anders Granhag, & Hartwig, 2005), however, the impact of video image size within the context of a trial has not yet been considered.

Impact of Image Size on Decisions: General Research Findings

There is a limited amount of research regarding how video image size generally affects judgments. For example, Detenber and Reeves (1996) as well as Reeves, Lang, Kim and Tatar (1999) found that larger video images were rated as more arousing than smaller images. Reeves et al. (1999) also found that those viewing larger screens pay more attention than those viewing smaller screens. It was results such as these that led Detenber and Reeves (1996) to conclude that larger image sizes can “intensify viewers’ evaluations of content” (p. 70). We extend the investigation on this topic by testing for effects of video image size within a legal context.
A Legal Context: Views of Defendant Emotion

At 16, Jeff Deskovic was convicted of the rape and murder of a high school classmate. After 15 years in prison, Deskovic was released when the court acknowledged that he was not guilty. Why had Deskovic been convicted? Why was he even a suspect despite the fact that DNA testing conducted before his trial revealed that he was not the source of the semen from the rape kit? According to information presented at www.thescienceproject.com, Deskovic became a suspect in part because he seemed “overly distraught” after an acquaintance was found dead. Recent evidence does suggest that the level of emotion displayed by one accused of a crime can affect how that person is viewed (e.g., Hasel, Dinsdale, & Montgomery, 2010). Here we investigate how perceptions of a defendant, varying in emotion level, are affected by the size of the presented video image.

Reports of Deskovic’s case suggest that his emotional display was seen as suspicious because it was considered to be an incongruous amount of emotion given the superficial relationship between Deskovic and the victim (e.g., Santos, 2006). Interestingly, there are also instances of those accused of a crime against a family member who are described as showing an “inappropriate” level of emotion when they lack emotion (e.g., see Heath, 2009 for a review); together these examples suggest that those judging the accused consider, not only the emotional display of the accused, but the relationship between the victim and the accused. We will also consider that here. Expectations regarding defendant emotion have been shown to vary with the defendant/victim relationship (see e.g., Heath & Grannemann, 2011).

Evidence strength is also investigated in the following study; Heath et al. (2004) found that defendant emotion levels had little impact when evidence is strong, however, when evidence is weak, there was a tendency for a more emotional defendant to be viewed more favorably. We anticipate finding a similar pattern of results, and are interested in determining whether evidence strength will interact with video image size to affect perceptions.

Thus, in the following study, participants read a scenario about a murder, watched defendant testimony and then answered a questionnaire. The level of defendant emotion presented during testimony (low or moderate), the defendant/victim relationship (spouses or strangers), the strength of the evidence (weak or strong), and the size of the presented image (small or large) were varied.

The Study

Two hundred and sixty-three jury-eligible undergraduates (178 females and 84 males) were tested. Participants were from a small, northeastern university; their ages ranged from 18-50 years with a median age of 20½. Seventy-nine percent of the participants were white, 10% were African American, 5% were Asian, 3% were Hispanic, less than 1% were Native American, and 3% described themselves as “other.” Participants were randomly assigned to conditions.

The participants were presented with a case and trial summary of approximately 450 words about a female defendant charged with the murder of either a spouse or a stranger. Participants were also presented with information about either weak or strong evidence against the defendant. Participants were then presented with a video of an actress providing a 3-minute “portion of the defendant’s testimony.” The words in each video were the same but the emotion level was either low or moderate. The defendant in the low emotion condition showed flat affect, while in the moderate emotion condition, the defendant’s voice and face displayed verbal and nonverbal behavior identified in research as indicating sadness/distress (e.g., Izard, 1977). The video was presented on either a 27” television monitor or on a 9’ projection screen.

After watching the defendant testify, participants answered a questionnaire. The case and trial summary was available to participants as they answered all questions. Upon completion of the questionnaire, participants were debriefed.

Results

Manipulation Checks

The first set of analyses were conducted to determine that the manipulations were perceived as intended. These analyses revealed that the manipulations were successful. In addition, one of these analyses revealed that evidence strength ratings were affected by an interaction between evidence strength and screen size. Stronger evidence seemed stronger and weaker evidence weaker when participants viewed a large screen as opposed to a small screen.

Trial Outcome Variables

Verdict. An analysis was conducted to test for the effects of emotion level, defendant/victim relationship, evidence strength, video image size, and the interaction on the participants’ verdicts. Evidence strength affected decisions. When evidence was weak only 23% thought the defendant was guilty; when evidence was strong, 58% thought the defendant was guilty. The defendant/victim relationship affected verdict decisions too. People were more apt to say the defendant was guilty when she had been accused of killing her spouse (46% guilty) versus a stranger (35% guilty). In addition, evidence strength and video image size interacted when verdicts were rendered. To better understand this interaction we examined verdict when video size is large versus small. When the participants had observed the defendant on a large screen and had read about the strong evidence against her, 65% saw her as guilty while only 52% saw this defendant as guilty when the video screen was small. Analogously, when the strength of the evidence was weak, and the defendant was viewed on a large screen, only 13% saw the defendant as guilty as opposed to 32% who saw this defendant as guilty after viewing her on a small screen.

Verdict Certainty. There was an interaction between emotion
level and image size. When the image was large, verdict certainty stayed uniformly high. However, when the image was small and the defendant showed less emotion, viewers were less certain of their verdicts.

Level of Defendant Guilt. The defendant/victim relationship affected the defendant’s rated level of guilt (guilt was rated on an 11-point scale with higher numbers indicating more guilt). The defendant was given a higher guilt rating when her spouse was the victim (Mean = 5.73) as opposed to a stranger (Mean = 4.87). In addition, the defendant was given a higher guilt rating when the evidence was strong (Mean = 6.39) rather than weak (Mean = 4.20). There was also an interaction between evidence strength and image size. When evidence was strong, the size of the video image had little impact (guilt ratings were high in both cases), but when the evidence was weak, the defendant was seen as more guilty when the video image was small as opposed to large (large image and strong evidence: Mean = 6.48; large image and weak evidence: Mean = 3.62; small image and strong evidence: Mean = 6.30; small image and weak evidence: Mean = 4.74).

Sentence. Participants gave shorter sentences to the defendant on a large screen (Mean = 28.78 years) versus a small screen (Mean = 32.72 years).

Impressions of the Defendant
Defendant Credibility. The defendant was rated as having less credibility when the evidence was strong (Mean = 5.10) rather than weak (Mean = 6.45). There was also an interaction between relationship type, emotion level and image size. Specifically, the defendant on the small screen who showed little emotion after being charged with killing her husband was seen as having the least amount of credibility. Her credibility increased substantially when she was viewed on a large screen (see Figure 1).

Discussion
Overall, video image size had a large impact on perceptions. First, an increase in video size resulted in strong evidence appearing stronger and weak evidence appearing weaker. This result is seen prominently when participants rendered their verdicts. When the video was large rather than small, the defendant was less likely to be found guilty when evidence was weak, and more likely to be found guilty when evidence was strong. An increase in the video image size heightened the effects of evidence strength.

The effect of video image size was also evident in the trial-outcome variables of guilt level and sentence. Quite simply, participants assigned shorter sentences to the defendant presented on a large versus a small screen. With regard to guilt, the defendant was seen as highly guilty when evidence was strong with the highest guilt ratings resulting from a large image presentation, but when evidence was weak and the presentation was on a large as opposed to a small screen, the defendant was seen as less guilty. This result is congruent with the results for verdict and both are in line with the conclusion of Detenber and Reeves (1996) that larger image sizes can “intensify viewers’ evaluations of content” (p. 70).

There were also complex interactions that reveal additional information regarding how video image size can affect decisions. For example, verdict certainty was affected by the defendant’s emotion level as well as video image size; participants were most certain of their verdict when the defendant displayed low emotion and this display was projected on a large screen (they were least certain when this defendant was shown on a smaller screen). The defendant’s level of credibility was also affected by the size of the video image; in this case, the size of the image interacted with the defendant/victim relationship and the defendant emotion level. The defendant on the small screen who showed little emotion after being charged with killing her husband was seen as having the least amount of credibility. Her
Defendant emotion level had an impact on decisions beyond that noted above. In fact, as others have found (e.g., Wessel et al., 2012), much of the impact of defendant emotion was on impressions of the defendant and not on trial-outcome variables. However, there were indications that defendant emotion could impact juror decision-making as it did affect defendant credibility and verdict certainty (in interactions with other variables), and both defendant credibility and verdict certainty may reasonably be important influences on juror decisions.

**Limitations**

There are potential limitations of this research. For example, we've only considered how people view a female defendant. Females are generally expected to be more emotional than males (e.g., Fabes & Martin, 1991), although some have noted that views of crying men have changed in recent years (e.g., Timmers, Fischer, & Manstead, 2003). With regard to defendants, Salekin, Ogloff, McFarland, and Rogers (1995) found that defendant emotion levels impact views of male and female defendants differentially. Researchers may wish to determine how the variables considered here such as image size might affect views of a male defendant.

Another limitation of the current research is that we do not know whether presenting a large video image is somehow distorting the presented information or merely making the presented information comparable to live testimony. In order to determine how different image size presentations compare to live presentation, future researchers may wish to replicate the present study with an added live presentation control group.

The present work is also limited in its level of external validity. We used video-taped stimuli presented to jury-eligible undergraduates in an effort to increase the external validity of this work relative to much of what has been completed in the field of psychology and law (see Bornstein, 1999). Even so, it is appropriate to raise questions concerning the generalizability of these findings to the legal system because our mock jurors had an experience that lacks similarity to the real juror experience. The simplicity of our presentation materials was purposeful, as we wanted to know, on a basic level, how the presented variables might impact decisions. Future researchers may wish to increase the external validity of this work.

**Conclusion**

The results with regard to video image size are a new and important contribution to the literature with implications for both research and for the practical realm of the courtroom. Researchers presenting video images need to recognize that respondents may evaluate stimuli differently as a function of the image size presented. As for the courtroom, attorneys often have to determine how to present visual material to jurors, and this decision can include whether to present jurors with smaller or larger images (Siemer et al., 2002). Although our research shows that video image size can affect both trial outcome variables (e.g., guilt determination, sentence), and non-trial outcome variables that may ultimately affect jurors’ decisions (e.g., defendant credibility), we are not yet suggesting that courts make decisions regarding the admissibility or regulation of video presentations of evidence (we do not know how the size of the image will impact all types of video evidence—e.g., gruesome crime scenes). We are, however, suggesting that attorneys need to make informed decisions regarding how they present the types of video evidence profiled here. If you have a strong case, the recommendation would be to use large-screen video as the strength of the evidence will likely be accentuated by the size of the screen. For a weaker case, the recommendation would be to use a small screen. Thus, consider the strength of your case when making such decisions.

We have also provided evidence that a consideration of the specific content of the video presentation is important. For example, as we have illustrated here, if you have a case in which the defendant shows little emotion after her husband is killed, her credibility is likely to suffer more if she is viewed on a small rather than a large screen. The large screen accentuates the presented emotion.

Thus, overall we have demonstrated that video image size matters; it can have an impact on mock jurors’ perceptions of a defendant and decisions regarding that defendant. Future research is needed to determine more about the parameters of the relationship between video image size, the type of information to be delivered and the decisions to be made.
Bruce D. Grannemann is a Biostatistician for the Mood Disorders Research Program and Clinic and a faculty member in the Department of Psychiatry at the University of Texas Southwestern Medical Center in Dallas, Texas. His research interests include measurement of the effects of depression on noncore symptoms, decision-making, and factors that influence judgments.

References


Response from Jason Barnes and Brian Patterson

Jason Barnes, a.k.a. “The Graphics Guy” is a graphic designer and trial consultant based in Dallas, Texas. He has been practicing visual advocacy since 1990 and has worked in venues across the country. He specializes in intellectual property and complex business litigation cases. You can read more about Mr. Barnes and how he can help you tell better stories in the courtroom at his website.

Brian Patterson has been a graphic designer since 1990. In 1998, he began working in litigation graphics as a designer and art director, creating and overseeing production of multimedia presentations for more than a hundred courtroom proceedings. He joined Barnes & Roberts in 2007 as a graphic designer and trial consultant.

Does the size of the screen used during video playback and presentations have an effect on juror decisions? This is the question Wendy Heath and Bruce Grannemann explore in the above article. To help summarize a few of their findings, we've created some graphs using their data.

The first deals with their findings of how strong vs. weak evidence interact with screen size.

As seen in the above graph, strong evidence of someone’s guilt seems slightly stronger when shown on a large screen. Just as the big screen amplifies the strength of the relatively stronger evidence, it also amplifies the weakness of the relatively weaker evidence. This weakness makes the defendant seem less guilty.

The second set of data we were interested in is how the emotion level of the witness and the relationship of the witness to the victim affect the credibility of the witness at different image sizes.

For a defendant accused of killing their spouse, low emotion gave them the most credibility on the large screen and the least credibility on the small screen. The screen size made little difference for a moderately emotional defendant accused of killing their spouse, though they appeared slightly more credible on a small screen.

For a defendant accused of killing a stranger, low emotion was found to be more credible on the small screen, while moderate emotion seemed more credible on the large screen.

Though the study in this article deals only with a criminal case, we want to discuss how this data might transfer to a civil case.

Applying these findings to a civil case, a litigant would want to maximize the visual appearance of strong evidence in their favor. Although it may seem counterintuitive, the research suggests a litigant would also want to maximize the appearance of weak evidence against them so that its weakness would be easier to see. A litigant would also want to minimize the appearance of strong evidence against them. Since weak supporting evidence was found to be less effective when shown on screen than when not shown, it may be best not to visually present weak evidence at all.

In most cases, we are limited by the system already in the courtroom, whether a projection screen, small monitors in the jury box, or larger monitors at some distance from the jury. Consequently, our ability to alter the visual size of evidence is really a function of how we choose to display that evidence on the screens that are available.

For example, trial presentation software usually has several options on how to display a witness presented by video deposition. You may show the witness full screen with no documents and no scrolling transcript if you feel the witness’s testimony is strongly in your favor – amplifying the strength of the testimo-
Similarly, you may want to amplify the weakness of an adverse witness by presenting the testimony as full-screen video.

To minimize the strength or weakness of a witness, you can present the witness's image along with scrolling text or documents, which has the added benefit of splitting audience attention.

To amplify the strength or weakness of documentary evidence, you may make large callouts and selective highlighting to draw attention to the document.

When you want to minimize evidence strength or weakness, don't enlarge the document or, if you do, don't draw extra attention to the area you want to minimize. Instead, enlarge the surrounding area so that the text is legible but no specific area is emphasized. Don't use highlighting. Alternatively, don't put the document on screen at all. Go back to the basics and hand the witness a hard copy of the document and simply ask about the contents.

While this study did not test these concepts in the context of civil litigation, their findings comport with general presentation guidelines we recommend. We would urge the research community to build on this intriguing information to test a variety of fact patterns including civil questions.

Response from Ian McWilliams

Ian McWilliams of New England Trial Services has had a front row seat, editing and showing videos at many of New England’s biggest civil trials. And in some of those picturesque old courthouses has often had to bring his own chair.

I know firsthand the power of a visual image, whether moving or static. I work with images every day. And right now if I could provide a visual image for this response it would be a picture of me, with a mildly sarcastic sneer on my face, thanking the authors for giving me just ONE MORE THING to think about when I walk into a courtroom with a cartload of equipment and try to figure out how I am going to show my client’s images to a jury, judge, witness and counsel. Thanks a whole bunch.

Yet, without knowing it, I believe I have witnessed their conclusions played out in real life. And, through my experience over nearly 20 years of courtroom presentations, I may have unknowingly assisted my clients, trial attorneys, in their efforts on behalf of their clients, civil litigants, to use techniques shown in this article to “… make messages more arousing,…”; “… be remembered better,…”; and, “potentially affect later behavior …”.

Ian McWilliams
And all because I am really, really lazy. Really. Allow me to explain.

The first trial I ever worked using a laptop computer and presentation software to assist my client with showing evidence was a high profile medical malpractice case in Boston. Up until then I had shown videotaped depositions I had shot to jurors using, ironically, a 27” TV (the biggest size available) with a VCR, wheeled in on a tall metal cart, which I often had to carry up a few flights of stairs when the elevators were out of order in some of Massachusetts old courthouses. But for this case the out of town lawyer representing the plaintiff wanted to put on a show. So we used two 10’ screens with high wattage projectors to provide a view to all in the courtroom in addition to six 12” computer monitors in front of the jury box. In the present time that is not such a difficult setup to accomplish using flat screen monitors and small, bright and quiet projectors. But back in the last century it was a challenge. The projectors were big, hot and noisy and the 12” monitors were the old beige office CRTs which had to be set high enough for the second row of jurors to see, but, when set that high blocked the view of the witness for the jurors in the first row. So, by order of the judge who didn’t want this “circus” in the first place, for every document shown, every video clip played and every transcript page quoted I had to get up from counsel table, turn on the projectors which were shut off so the court reporter could hear the testimony, then pick each thirty pound monitor up off the floor where it was ordered to be placed when not in use, put the monitors on the table set in front of the box, return to counsel table and display the document, clip or page to the judge, jury and courtroom, then get up and put the six, thirty pound monitors back on the floor and shut off the projectors until the next time we were to show a document, clip or page. Every time. Every day. For 6 weeks.

So I came away from that experience with; a keen desire to continue to use a computer in trial and, a permanent vow that I would never work that hard in a courtroom again. So I became a proponent, an apostle if you will, of the one big screen setup and a less is more philosophy. And through that may have helped to prove the author’s conclusions in real life. So, you are welcome.

Real Life Applications

Here in Massachusetts we have a great history and a unique diversity when it comes to our Halls of Justice from the sleek, modern Moakley Federal Courthouse, which has anchored a long needed revival of the Boston waterfront, to the Colonial Era, Charles Bullfinch designed Newburyport Superior Courthouse which opened the year Daniel Webster began practicing law. It is impossible to design a one-size-fits-all system that can be used everywhere. In the federal courtrooms presentation equipment is installed, limiting the options of counsel. While touch-screen annotation monitors for judge, counsel and witness are a nice touch, the idea that jurors will be able to share 7” arm rest monitors and comprehend complex information or judge the credibility of a videotaped witness, as this study suggests, seems wrong.

The state Superior and District courts are another story entirely. Strapped for funds, facing deteriorating buildings and trying more cases than ever, the courthouses are barely maintained as the historic places most of them have been designated. In good times new courthouses are proposed and eventually built but lately not too many have gotten off the drawing board. The attorneys who practice in these venues must bring their own technology to the dusty halls where a chalkboard is considered a modern teaching tool. Anyone who wants to try a case in the state court is free to bring in their own experts and equipment and put on as big a production as they want. But they must be aware of the issues they face just walking in the front door.

When I walk into a courtroom to setup presentation equipment I have to consider such factors as; ceiling height, room dimensions and lay-out; number and placement of electrical outlets, lights and windows; what the Judge will allow, what the court officer will allow, what opposing counsel will allow, what my client wants and, finally, is there a place for me to sit and work or was I once again smart enough to bring my own table and chair. In my cartload of equipment I have power cables, computer cables and nearly every cable adaptor made; an audio system, notebook and touch screen computers, LCD 3-chip projector and their backups. Office supplies along with a printer, copier scanner machine. And if I am in a courtroom for the first time I have an assortment of screens from 4’ diagonal to 10’ and will use the largest screen for the available space. If allowed I explain to the judge, court officer or my client why I want to set the room

When I videotape a deposition I try to set up the room in a way which makes the difficult job of the freelance court stenographer who will transcribe the proceedings easier. In my time as a legal videographer I have had the privilege of working with some of the finest court reporters in the nation. In fact the best advice came from a 6-Time National Speedwriting Champion (yes, they have races), one of the pioneers of Real-time Reporting and a renowned instructor and speed coach. He told me the best layout for a reporter is to have the witness on his right hand side and the questioner on his left hand side. Using their strange machines and phonetic language, the keystrokes required to begin a new line in a transcript and designate a Question with a capital Q is stroked with the left hand and capital A for Answer is made with the right hand. So having the questions and answers come from the appropriate side is just a small way to make things easier and help produce an accurate record. After all, the reporter has the hardest job in the room while I have the easiest. I just have to stay awake watching boring TV.
in a particular way and use a Rule of Three to demonstrate my ideal setup. If possible I will set the screen directly across the room from the jury box, between the attorney's podium on one side and the witness stand on the other. When the jury gives their attention to the question, then to the answer, I explain, I believe it is effective to have the screen in the middle of their view, during the back and forth of examination. And by using the largest possible screen for the room I eliminate the need for multiple small monitors or big screen plasma TVs or easels and whiteboards or any of the things that can clutter the room and distract the jury’s attention from the message.

A Useful Study
With the conclusions stated in this study I feel that I am armed with excellent information to use in my practice. My clients depend upon me for just this type of insight and practical advice. I welcome additional studies of this subject. In addition, I have long posed the question, “Do production values used in recording audio visual depositions have an effect on a viewers opinion of witness credibility”. In particular the screen layout of a witness: a medium close-up shot with top of the head at the top of the frame, the eyes in the top third of the frame and the bottom of the frame at mid-chest level. Or a long shot with the camera at table level and showing the witness from the table up. Using these particular shots, are there differences in perception from a frame with the witness centered in the frame and looking directly at the camera, and a frame where the witness is set to one side of the frame and looking at an invisible interviewer off frame. See examples. Is there a difference? Is one shot “more effective” than the other? Would someone like to study this? Thanks.

Heath and Grannemann respond to the consultants:
We welcome this opportunity to discuss our results with those in the trenches, and we appreciate hearing ideas of how our results might play out in the real world. Interestingly, while the responses of McWilliams, Barnes and Patterson take different approaches to responding to our data, there is a common theme across both responses, and that is a call for more research.

Specifically, Barnes and Patterson discuss how trial presentations might be modified in light of our recommendations and in light of potential technology limitations in the courtroom. While Barnes and Patterson apply these ideas to civil cases, it seems to us that their suggestions could work for criminal cases as well. Their ideas regarding amplifying the strengths and weaknesses of visual evidence seem comparable to what was shown to be advantageous in our work, however, as they suggest, future research is needed to test both their presentation ideas and the application of these ideas to both civil and criminal cases. We too welcome these investigations.

Ian McWilliams posed an additional question about production values for trial presentations. Specifically, he asked whether the “screen layout of a witness” affects perceptions of that witness. This is a reasonable question, and we too are interested in the answer. Changing the screen layout could potentially make some information more visually prominent, perhaps affecting perceptions. There is, in fact, research by Lassiter (e.g., 2010) that suggests that videos that direct observers’ attention to a suspect during interrogations as opposed to directing attention to the interrogator or directing attention equally to the suspect and interrogator in a scene tend to produce more prejudicial perceptions of the suspect (e.g., suspects are more likely to be seen as guilty). Lassiter has referred to this perception as “camera perspective bias.” With regard to McWilliams’ question, it is possible that researchers could find that there are advantages and disadvantages to certain screen layout presentations (e.g., if there is a table in the shot, will observers be distracted by items on the table?). Future research is needed to address this issue and the many others that still exist in this field. We encourage researchers to continue to search for answers regarding potential advantages and disadvantages of various forms of trial presentation.

Reference