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Thinking beyond the shown: implicit inferences in evidence and argument

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Visual representations are especially well suited to the construction of implicit meanings. Like advocates in other fields, lawyers use visual displays to prompt cognitive and emotional associations of which viewers may not be aware and which, consequently, they are less likely to evaluate critically. The authors review some of the psychological and rhetorical effects of visual representations in general, discuss several examples of how legal visual displays encourage audiences to draw implicit inferences and argue for the importance of heightened visual literacy in improving our ability to understand the meanings and implications of visual advocacy within the legal system.

Keywords: trials; advocacy; rhetoric; visual theory; psychology; evidence.

Most of the presentations at this conference have to do with graphics and explicit (legal) reasoning: identifying the elements of (observed and/or normative) inferential processes and articulating their relationships for purposes of research, communication, analysis, prediction and decision making. This essay, by contrast, is concerned with how visual displays used in court also create *implicit* meaning. Why is this worth talking about? As research in cognitive psychology, cognitive science and several other fields in the last few decades strongly suggests,[1] any attempt to describe and understand actual legal decision making by jurors (and judges, for that matter) has to take into account the extent to which decision makers think intuitively and subconsciously as well as consciously and are guided by emotional as well as rational responses.[2] Accordingly, advocates who want to persuade judges and jurors must appeal to these ways of thinking and feeling. Lawyers want to (and do) communicate implicitly for all sorts of reasons: to comply with legal rules and/or discourse conventions that forbid saying those things explicitly, to build the kind of solidarity with their audiences that

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[1] For example, Daniel Kahneman (2002).

[2] For example, Neal Feigenson (2000), Richard Sherwin (2000).

only unspoken understandings can produce, to generate new meanings via Gricean implicature[3]—but most importantly, because audiences can sometimes be persuaded most effectively when key steps in their thinking remain implicit *to them*. And as we will explain a bit further on, visual representations can create these kinds of implicit meanings very differently, and in some ways better, than (spoken) words alone can.

Lawyers' visual displays, whether used as demonstrative evidence or in opening statements or closing arguments, always mean more than what is shown. Those meanings may be critical to the lawyers' theory of the case, and they are always potentially contestable—provided they can be brought to awareness, identified and understood. Our aim is to explore some of the interplays between what lawyers show and what they mean. In doing this, we will of course pay attention to words as well as pictures—words in the form of testimony authenticating and explaining the picture, made visible in a photo caption or within the frame of the picture itself, sometimes the words of the witness who is depicted in the visual display—because words and pictures shape each other's meanings.

We note at the outset that there are two closely related but distinguishable senses of the term 'implicit meaning'. An implicit meaning that is deliberately communicated *without being spoken* may nevertheless be consciously entertained in the mind of a viewer–listener. In this instance, the audience gets the message and knows that they are getting it. Alternatively, an unspoken meaning may operate in the mind without awareness. In this instance, the unspoken meaning influences thoughts and/or feelings at an unconscious level. To illustrate the first sense (i.e. implicit meanings that are consciously entertained), assume that an advocate shows the jury a picture of a defendant's mug shot. The overt context and *spoken* message have to do with identification. The *unspoken* message is that the defendant is more likely to be guilty as charged because he looks like a criminal or a member of an objectionable or fear-provoking racial or religious or political group. A juror may be quite aware of the inculpating impression that the image conveys without anyone saying a word. When such recognition occurs ('He looks like a crook'), the implicit meaning may be said to be consciously framed. The prosecutor can convey the message without expressing it because it is a familiar part of an implicit 'visual code' or visual common sense (what everybody understands).[4] This kind of implicit communication may also take place, however, without an accompanying recognition. In other words, a meaning may be unspoken by the advocate and remain unspoken (or unframed) in the audience's mind as well. This is often what advertisers seek to achieve, e.g. when they produce visual images that implicitly associate a particular product with beautiful people engaged in exciting or fun-looking activities. The unspoken message is that wearing, ingesting or otherwise using the product in question makes you beautiful, exciting and fun to be with.[5] The prospective consumer

[3] Paul Grice (1989).

[4] See generally CLIFFORD GEERTZ, *Local Knowledge* (New York, NY: 2000). During the 1988 presidential campaign, a Republican ad was used against liberal Massachusetts governor Michael Dukakis featuring the mug shot of Willie Horton, an African-American criminal defendant who, after stabbing a gas attendant 19 times during a robbery, was arrested and sentenced to life in prison without the chance of parole. Eleven years later, while Dukakis was governor, Horton was given a 'weekend pass' from prison during which time he committed a series of violent crimes. Many critics discerned an implicit racial message in the use of Horton's mug shot during the campaign. See JOE CONASON, Replaying GOP racism, *Salon* (27 October 2006) http://www.salon.com/opinion/conason/2006/10/27/rnc_ad/ (referring to the Willie Horton ad as a 'crude production that showed an extremely menacing mug shot of a black criminal with an unruly Afro to portray Democratic presidential nominee Michael Dukakis as a soft-on-crime liberal'); see also STEVE TAKESIAN, *Willie Horton: True Crime and its Influence on a Presidential Election* (2000).

[5] See, e.g. LOUISE HAINEAULT & JEAN-YVES ROY, *Unconscious for Sale: Advertising, Psychoanalysis, and Public Life* (Minneapolis, MN: 1993).

may not realize that seeing the product in question may have triggered a subconscious association ('I will look/feel great [sexy/exciting] with this on [or in or otherwise associated with] me') and that this unspoken message influenced the ensuing decision to make a purchase. In this illustration, an implicit meaning has been internalized, but its operation remains unspoken and unrecognized within the message bearer's mind.[6]

We begin with a brief overview of why visuals can convey implicit meanings in ways and with effects that words alone cannot. We will then show and discuss some examples of visual evidence and visual argument. In all these applications, we will see how lawyers deploy available technologies to prompt implicit inferences which, converging with explicit ones, further their theories of the case (or so the proponents hope). We will conclude by arguing that the proliferation of visual displays in law today makes it incumbent upon evidence scholars to complement other forms of scholarship with the kinds of analysis we will be illustrating today.

In their psychological and persuasive effects, visuals differ from words in many ways. For instance, visual representations of all kinds tend to have a greater impact than non-visual expressions of the 'same' information because pictures tend to be more vivid. The greater salience of visual information makes it likelier that the viewer will take in the information, remember it and use it in subsequent judgement tasks. Moreover, visual displays can convey more information more intuitively than words alone and thus enable viewers to understand more. (Compare, for instance, a computer-animated reconstruction of an event to an expert witness's verbal testimony of the same event.) In addition, photorealistic pictures tend to arouse cognitive and emotional responses similar to those aroused by the real thing. For example, an IMAX movie of a roller-coaster ride can induce vertigo in viewers who would remain unruffled by a verbal description. *Naïve realism* is a phrase often used to refer to people's tendency to 'see through' the medium to the depicted reality, to identify a picture with its ostensible content.

We would like to call attention in particular to three ways in which visuals seem generally better suited than words alone to communicate *implicitly*. First, when visuals are used to communicate propositional claims, at least some of their meaning always remains implicit. Especially as we move along the continuum from the diagrammatic to the pictorial, visuals become (in philosopher Nelson Goodman's terminology[7]) increasingly replete symbol systems such that no visual element is non-essential to meaning; the possibilities for implicit communication (intended or not), therefore, multiply. But even the most ostensibly parsimonious graphics come loaded with tacit as well as explicit information, as is clear, for instance, from the study of chemical diagrams by chemists Roald Hoffman and Pierre Laszlo[8] and Laszlo's work on spectrographic analysis graphics.[9]

Pictures, that is, cannot be reduced to explicit verbal propositions. And that makes pictures especially effective for constructing *enthymemes*—in Aristotle's definition, an argument in the form of a syllogism but with a key premise left implicit.[10]

[6] In addition to *intended implicit meanings* that are (i) unspoken, but consciously entertained, and (2) unspoken and unconsciously held, a third category may also be noted. This is the category of *unintended implicit meanings* that are unspoken and *unconsciously* transmitted. For example, assume that a defendant takes the stand to testify in her own defense. She asserts her innocence, but her body language says she is lying. Here, we bear witness to an unspoken 'message' of which the recipient, but not the sender, is aware. We will not be addressing this third category in the present essay.

[7] Nelson Goodman (1976).

[8] Roald Hoffmann and Pierre Laszlo (1989).

[9] Pierre Laszlo and James Elkins (2007).

[10] Aristotle (1926 [4th century B.C.E]), I.ii.8-9.

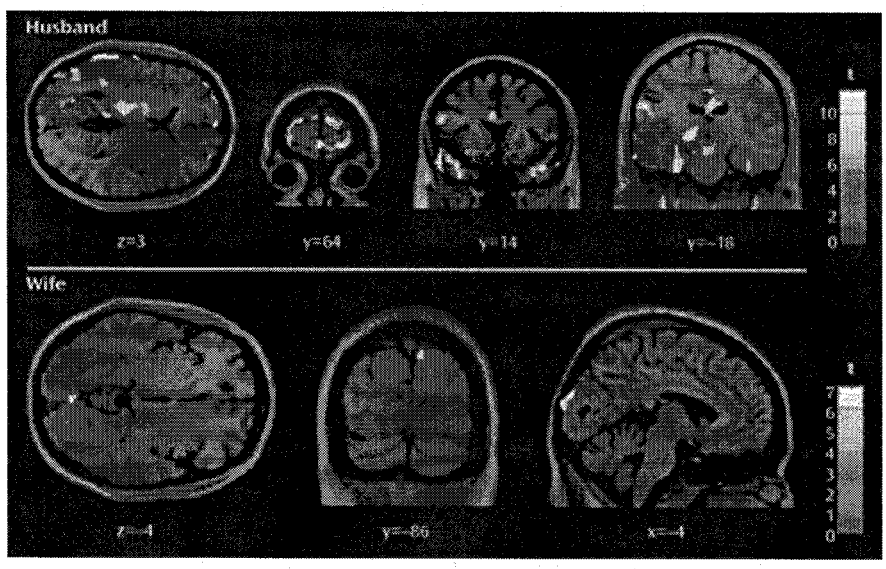

FIG. 1. From LANIUS, R., HOPPER, J. & MENON, R. (2003), Individual differences in a husband and wife who developed PTSD after a motor vehicle accident: a functional MRI case study. *American Journal of Psychiatry*, **160**, 667–669.

Second, pictures, more so than words, convey meaning through associational logic which operates in large part subconsciously, through its emotional appeal. Thus, a person may be aware that a picture is strongly linked to an emotional response without knowing or understanding just what the connection is. So pictures can capitalize on the power of people's intuitive, *gestalt* emotional responses to shape their judgements, while these effects remain beneath awareness and thus less amenable to critical scrutiny and counter-argument.

Third, pictures readily lend themselves to what literary theorists call intertextual references[11] which, by referring to other works, other genres, even other media, cue the audience's cultural knowledge and allow them to draw on that implicit knowledge in responding to the picture.[12] Of course, words can do this too, but pictures can do it more effectively because they do it in a way that need not call attention to itself and that embeds the borrowed cultural value invisibly in the visual representation of the picture's ostensible subject matter.

With these principles in mind, let's turn to some examples.

What are we looking at here (Figure 1)? This is a functional magnetic resonance image (fMRI) of a human brain. Brain scans like this may be admissible demonstrative evidence (just as positron emission tomography [PET] and computerized tomography [CT] scans have been) to illustrate or substantiate psychiatric or other expert testimony that may be relevant to proving, say, the extent of a tort plaintiff's closed head injuries, the incompetence of a criminal defendant to stand trial or a defendant's mental impairment offered in mitigation during capital sentencing.

The fMRI explicitly provides all sorts of potentially relevant and probative information, at least once we know what we are looking at. In a nutshell, fMRIs indicate variations in localized brain

[11] JONATHAN D. CULLER, *The Pursuit of Signs* (Ithaca, NY: 2002) 100–118.

[12] JOHN FISKE, *Television Culture* (London: 1987) 108–119.

blood flow in real time (by measuring differences in the magnetic resonance of more versus less oxygenated blood) that correspond to increased neuronal activity in those areas of the brain.[13] By comparing activity levels when the subject is engaged in some task (say, looking at emotion-provoking stimuli, solving the 'trolley problem' or other moral-reasoning dilemmas[14] or lying, to pick three of the many sorts of mental operations studied so far) versus a rest or control condition, neuroscientists try to identify which portions of the brain are relatively more active during which sorts of mental operations. By comparing (say) an allegedly mentally impaired person's activity levels to those of a 'normal' control sample, neuroscientists try to locate and distinguish the neuronal correlates of impairment and (more controversially at this point) to diagnose relative impairment from the scans.[15]

Let us say that these images, for instance, have been offered to prove that the subjects have various neurological impairments as a result of trauma, accounting for observed behavioural dysfunctions. The testifying expert would draw these inferences explicitly, and the scan helps judge and jurors see just what parts of the brain the expert is talking about. Picture plus testimony may well be taken as highly persuasive evidence that the subject has a biologically based and therefore 'real' impairment that is relevant to the determination of a fact in issue.

But what *other* inferences might people draw from pictures like this? When people first see images like this, they may be inclined to believe that they are looking at 'someone's brain'. The fMRI does seem to offer direct access to the fact to be proven (e.g. mental impairment, the brain engaged in moral reasoning, etc.), leading viewers to ignore the many complications introduced by the mediating technology of measurement and representation (even though direct and cross examination of the expert should bring some of these to the surface). And it is not only non-specialists who are tempted to think this way; one experimental psychologist, writing of (and to) others, has observed that '[t]here is a real danger that pictures of blobs on brains seduce one into thinking that we can now directly observe psychological constructs'.[16] So audiences may intuitively think that they have been given a more real and therefore (they think) more reliable kind of input to their judgement.

Or perhaps, a viewer's initial response might be, 'It's a *picture* of someone's brain'. This nicely captures what media theorists Jay David Bolter and Richard Grusin call *remediation*,[17] the invocation by one representational medium of the forms and connotations of another. (Think, e.g. of how the newer medium of the personal computer interface adopted the 'desktop' metaphor and how, in turn, the split screens and scrolling texts of television news and sports programs increasingly remediated the multiple windows of personal computing.) Intuitively, people may assimilate fMRIs to a more familiar medium (photographs or X-rays) on which people are accustomed to depend as providing generally reliable access to reality. In fact, when one looks at an fMRI, one is not seeing a picture of the brain in the way that one sees a picture of blood vessels in an angiogram. fMRIs are statistical maps, visualizations of data sets, in the guise of iconic representations of the brain.

Let us consider as well the bright colours on which the standard fMRI representation relies to make salient its significant information. There is what neuroscientist Dean Mobbs (among others)

[13] For an excellent introduction to fMRI science and technology, see Scott Huettel *et al.* (2004).

[14] For example, Joshua Greene *et al.* (2001).

[15] So, a single fMRI image is already a comparison of relative localized brain activity levels with statistically significant differences typically indicated by bright colours. Two or more fMRIs, of course, may be compared: each picture, task to baseline, and then the pictures (say, target subjects to controls) to each other.

[16] Richard Henson (2005).

[17] Jay David Bolter and Richard Grusin (1999).

has called the 'Christmas tree phenomenon'[18]: jurors may be so dazzled by the 'pretty lights' that they would not pay sufficient attention to the expert's interpretation of what the picture means. The point we want to make here is that the contrasts of bright colour to no colour *perceptually* convert differences of degree (of blood oxygenation levels) into differences in kind: brain activity versus no brain activity. So viewers may more readily infer, say, that the subject of the fMRI has condition x or fits into legally relevant category y—is a schizophrenic, lacks ordinary control over his behaviour, or what have you—when the differences between the subject and normal persons (even assuming the diagnosticity of the task whose performance produced the fMRI) may be subtle and not very reliable.

Other implications of the fMRI may strengthen this sort of inference. Like PET and CT scans before them, fMRIs tend to naturalize the usually complex psychological construct of interest (e.g. mental incompetence) by appearing to ground it in visible reality and to locate it *in the person*—specifically, in the brain.[19] This reduces psychosocial complexity to supposed features of the brain; it confuses the part (brain) for the whole (person-in-situation). Picturing human functioning in this way may thus encourage legal decision makers to commit the fundamental attribution error—to over-attribute others' behaviour to the kinds of people they are rather than to the circumstances in which they find themselves—and, in so doing, possibly to misapply relevant legal standards of culpability.[20]

If fMRIs implicitly invite these kinds of inferences in addition to the explicit inferences the expert witness draws from them, a question for the legal system is whether the implicit inferences threaten good decision making and, if so, whether those threats outweigh the probative value of the scans in establishing and making clear the mental phenomena of interest. We might also explore whether other means of representing the data would be less inclined to prompt what we decide are bad judgemental habits without losing the judgemental benefits of accurate visualization. In addition, we might examine whether proponents (and perhaps opponents) of fMRI-based evidence should be advised to introduce multiple modes of representation precisely to combat viewers' naïvely realist tendency to conflate representation and reality. These questions, however, lie beyond the scope of this brief essay.

Let us move now from evidence to argument. Our next example comes from the plaintiff's closing argument in *Ernst* v. *Merck & Co., Inc.*, one of the first Vioxx cases to go to trial.[21]

The plaintiff here contended (as have plaintiffs in other Vioxx cases) that, according to clinical trial data, taking Vioxx significantly increased the risk of heart attacks and that Merck downplayed this risk in marketing the drug to physicians and consumers, thus rendering the company negligent and/or its product defective. The plaintiff also had to prove by a preponderance of the evidence that her husband's taking Vioxx was a 'producing or contributing' cause of his fatal heart attack. Merck defended the case (as it has others so far) by arguing that the data then available did not clearly show that Vioxx significantly increased the risk of heart attacks, that the company had adequately disclosed all risks as the FDA had required and that in any event the taking of Vioxx was not the legal cause of the victim's heart attack.

In *Ernst*, the plaintiff faced a particularly daunting challenge in proving causation. Bob Ernst had taken Vioxx for less than 8 months before his death, whereas the published scientific evidence available at the time seemed to show that Vioxx put users at a statistically significant increased risk only after at least 18 months of use. Moreover, the death certificate indicated that Ernst died of an arrhythmia, not a heart attack or stroke, the cardiovascular risks identified in the Vioxx clinical trials.

[18] Dean Mobbs *et al.* (2007).

[19] See Joseph Dumit (2004).

[20] Richard Nisbett and Lee Ross (1980).

[21] *Ernst* v. *Merck & Co., Inc.* (2005).

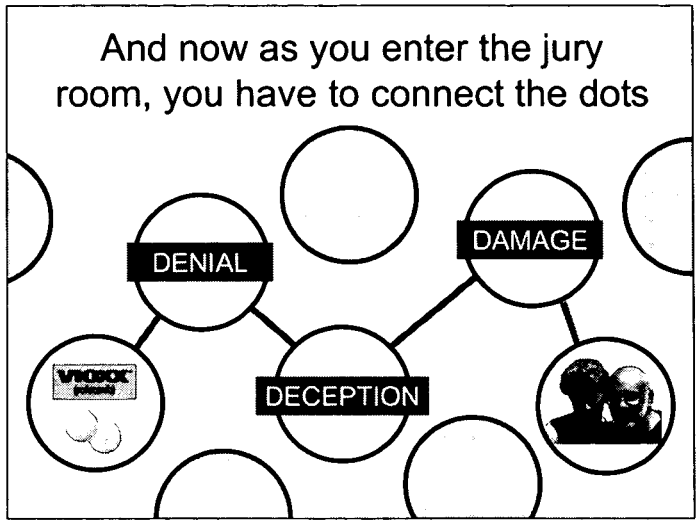

FIG. 2. PowerPoint slide from closing argument in *Ernst* v. *Merck & Co., Inc.*, courtesy of Mark Lanier.

(The plaintiff's argument was, of course, not only about causation. On the one hand, the greater the role that jurors thought the Vioxx played, the greater Merck's perceived responsibility, and therefore the larger the compensatory award might be if jurors were to conflate responsibility and damage judgements, as some research indicates that jurors are wont to do.[22] And if jurors found Merck's behaviour to be reprehensible enough—reckless or worse—Texas law empowered them to award punitive damages as well.[23])

The plaintiff's lawyer, Mark Lanier, accompanied his closing argument with a backdrop of PowerPoint slides. Early in the argument, he told jurors: 'We've come on a long journey.... And as we look at the journey, what are we going to make of this case?.... What do we make of the witnesses? What do we make of the documents? How do we connect the dots?' At this point, he showed the next PowerPoint slide on the courtroom screen (Figure 2), and continued: '[W]e've seen a decade of denial by Merck. And that's going to be the first point I talk to you about, the denial. But we've not just seen denial. The dots connect from denial to deception. And I think the deception, you've seen part of it in this courtroom. .... Not just deception, but the dots connect the damage, and the damage flows far beyond just the Ernst family. And we'll talk about that. But very directly the damage flows to the Ernsts themselves'.[24]

Plainly, this is an argument in words and pictures. In what follows, first we will take a closer look at some of the words Lanier says and shows; then we will describe how the whole picture encourages his audience to think about the case the way he wants them to.

Let us start with those bold labels. *Denial–deception–damage*, of course, emphasize Merck's culpability, presenting the critical causation issue within the frame of Merck's blameworthiness.

[22] See, e.g. Feigenson, *supra* n. 2.

[23] See, e.g. *Crutcher-Rolf-Cummings, Inc.* v. *Ballard*, 540 S.W.2d 380, 388 (Tex. Civ. App. 1976).

[24] *Ernst* v. *Merck & Co., Inc.*, trial transcript of 17 August 2005, p. 31, line 1–p. 32, line 7.

(In his opening statement, Lanier had outlined the case in terms of motive-means-alibi-death, implicitly inviting jurors to think in terms of a criminal case.) Using labels like 'denial' and 'deception' to refer to Merck's alleged failure to warn doctors and the public of cardiovascular risks posed by Vioxx of which it knew or should have known is certainly within the bounds of acceptable argument about a relevant and essential element of the case. It is also a way of implicitly encouraging jurors to infer causation, and hence liability, from culpability, playing to their intuitive belief that bad outcomes (Ernst's death) must be due to bad actions (Merck's deceptions).

Now, consider the theme of *connecting the dots* (which the lawyer both says and includes as visible text on the slide). It is a familiar enough metaphor for the jury's task as often urged by plaintiffs in civil cases and prosecutors in criminal cases: the jury has seen the evidence; now all that it has to do is to assemble that evidence to reach the desired conclusion (liability or guilt). Perhaps only the metaphor of the evidence as puzzle pieces for the jury to assemble is more common. Importantly, connecting the dots, like putting a puzzle together, is a *visual* metaphor. When you connect the dots or finish a puzzle, you get a complete picture. Mapped onto the task of legal judgement, this means no gaps or loose ends (i.e. unexplained aspects of the story) and all the dots or puzzle pieces (i.e. all items of evidence) accounted for. This is hardly a likely description of jurors' thinking in response to actual trial evidence, which almost certainly contains irreconcilable elements. The metaphors, in contrast, implicitly conceptualize the process of legal judgement as reducible to perceptual judgement—difficult cognitive and moral choices reframed in terms as intuitively simple as ordinary visual perception seems to be.

Yet connecting dots differs crucially from putting puzzle pieces together. Remember that the most critical aspect of the plaintiff's case is to persuade the jury that taking Vioxx was a cause of Bob Ernst's death. The connect-the-dots slide bolsters the plaintiff's causation argument by offering jurors visual metaphors for causation. Causation, as cognitive linguist George Lakoff and philosopher Mark Johnson have explained,[25] can hardly be thought about *except* metaphorically. Consider, then, how this slide visually constructs an implicit argument through convergent metaphors.

To connect the dots is to *link* them and to connect a series of several is to link them into a *chain*, just as common sense, and the language of many judicial opinions, uses the metaphor of *links in a chain* to represent causation. And this chain metaphor envisions causation, and hence legal culpability, as a relatively simple and essentially linear story. Causation does not involve multiple forces or vectors; it is nothing merely probabilistic (which would seem to be the proper understanding of the risks posed by Vioxx or any other drug as indicated by clinical trials). Instead, it is one thing after another, a straight narrative that runs from Merck's profit-seeking haste to rush Vioxx to market regardless of the cardiovascular risks, to Merck 'steamrolling' doctors into prescribing it, to Bob Ernst taking it and dying. (The idea of fitting together in the sense of the puzzle metaphor does not work quite as well for this purpose because puzzle pieces can be assembled in any order.)

This could all be suggested just by the verbal expression 'connect the dots', but what you see in the design of this slide does a lot of additional cognitive work. We will mention three visual implications. First, the short, bold red lines which connect the five white circles, the key elements of the plaintiff's theory, visualize the idea of causal connection (which in the case of the risks posed by drugs and the etiology of an individual's fatal illness may be immensely complex and irresolvably uncertain) as something clear and simple: Merck's making and marketing of Vioxx are as plainly connected to Bob Ernst's death as are the two circles linked by a short line.

[25] George Lakoff and Mark Johnson (1999).

Second, the very short line running almost directly down from 'damage' to the picture of Bob and Carol Ernst gives visual expression to another, compatible metaphor that Lanier voiced as he showed the slide: '[V]ery directly the damage flows to the Ernsts themselves'. Damage is something that flows, that moves fluidly, from Merck's conduct to the victim. The abstraction of a causal relationship is envisioned as a *tangible substance* moving a short distance between two points, without impediment. There is even an inevitability about the flow of a liquid *downhill*—as if Merck's misconduct initiated a sequence of events that, once begun, could not but lead to this tragic conclusion.

Third, the pattern of the lines connecting Vioxx to the Ernsts is up–down–up–down, evoking a wandering *path*. The metaphor of *causal paths* is also an extremely common one. Even more to the point, to envision the causal connections as forming a path is to imply that *following* that path is a kind of *journey*—returning us to the metaphor with which Mark Lanier began his argument. And because, according to Lanier, the jurors themselves have 'come on a long journey' from the beginning to the end of the trial, the visual representation of the jurors' decision making process as connecting the dots, following the path from the first circle with the Vioxx pills to the last circle with the picture of Bob and Carol Ernst, identifies the completion of the jurors' task with the end point of the causal path. Both journeys end by connecting Vioxx to the Ernsts. The implication is that jurors can integrate a decision in the plaintiff's favour with the feeling that they have fulfilled their responsibilities as jurors, thus achieving the sort of emotionally satisfying *cognitive coherence* which decision makers seek (judges no less than jurors, as legal scholar Dan Simon has shown[26]).

Now let us consider a little more explicitly the cognitive as well as the cultural materials that people use when they make an implicit association in response to viewing pictures shown inside the courtroom. It turns out that the way jurors respond to pictures at trial may be comparable to the way prospective consumers respond to visual advertisements. Advertisers often use pictures to trigger particular feelings or fantasies which they invite consumers to associate with the act of wearing or ingesting or otherwise making use of a particular commercial product. These sorts of implicit associations take us straightaway to the embodied nature of visual images.[27]

There is an interesting story that we can only fleetingly relate here regarding the historic antipathy towards images as opposed to words. For a long time in the western philosophical tradition, the body's senses and the emotions they arouse were associated with deceit and falsehood.[28] In the 17th century, for example, the rationalist thinker René Descartes stopped up his senses precisely in order to avoid being distracted in his search for certainty and true knowledge. For Descartes, ideas are clear and distinct and thus certain precisely to the extent that they have been cut off from the body.[29] This kind of skepticism regarding the epistemological value of the sensorial visual image has been taken to an extreme form in the often violent history of religious iconoclasm.

For the religious iconoclast, whether Islamic or Protestant, the idolatrous image, in the form of a physical icon or painted picture, has to be destroyed. The fear is that believers will be misled into substituting embodied images for their invisible source. When that happens, the real basis for religious knowledge and truth will have been forgotten.[30] This notion that words and images occupy disparate frames of meaning persists. For example, the contemporary philosopher Gilles Deleuze

[26] Dan Simon (2004).

[27] See, e.g. Maurice Merleau-Ponty (1968) 143–155 and Laura U. Marks (2000).

[28] See, e.g. Peter Goodrich (1995).

[29] Rene Descartes (1960 [1641]).

[30] Goodrich, *supra* at 113. See Ann Kibbey (2005) 6–32.

has written that, 'There is no link that could move from the visible to the statement, or from the statement to the visible'.[31]

Common sense confirms the obvious point: what we say can never do justice to what we see. But common sense also confirms the opposite point: we make meaningful links from words to images and from images to words all the time, sometimes with jarring results. Consider, for instance, a recent newspaper photograph depicting a young man being pulled out from under the rubble of a building destroyed in an Israeli air raid in Lebanon:

Initially, this image appeared on the website of *The New York Times* with the following caption: 'The mayor of Tyre said that in the worst hit areas, bodies were still buried under the rubble, and he appealed to the Israelis to allow government authorities time to pull them out'.

The picture presumably depicted one of the 'bodies... buried under the rubble', in the act of being pulled out. Except that the 'body' was very much alive, and hardly buried, as any but the least skeptical photo editor could plainly see. On 9 August 2006, The Times issued the following correction: 'A picture caption with an audio slide show on 27 July about an Israeli attack on a building in Tyre, Lebanon, imprecisely described the situation in the picture. The man pictured, who had been seen in previous images appearing to assist with the rescue effort, was injured during that rescue effort, not during the initial attack, and was not killed'. The correct description was this one, which appeared with that picture in the printed edition of The Times: 'After an Israeli air strike destroyed a building in Tyre, Lebanon, yesterday, one man helped another who had fallen and was hurt'. As Susan Sontag has written, 'All photographs wait to be explained or falsified by their captions'.[32]

Captions and narratives set up the implicit cultural or cognitive frame within which the viewer makes sense of what he or she sees. Astute students of this meaning-making process become adept at cuing up the right context for the kind of meaning that they want others to formulate inside their heads. When commercial or political advertisers or legal advocates do this sort of thing, they exploit well-known patterns of associative logic. Consumers have been trained to invest certain emotions into particular commercial brands.

This emotional association operates subconsciously. We do not recall why we feel as we do when we actually encounter the product in question. Likewise, moving images do more than exploit our atavistic, hard-wired attentiveness to anything that moves; they also erotically bind us to the screen. As National Broadcasting Company executive Reuven Frank once noted, 'The highest power of television journalism is not in the transmission of information but in the transmission of ... joy, sorrow, shock, fear, these are the stuff of news'.[33]

These kinds of associations may be triggered by a wide variety of cognitive and experiential factors ranging from implicit social scripts, familiar story genres and character types to other unconsciously assimilated cultural referents and templates (which is to say, other forms of visual common sense). Associations also may be cued by internal resonances that are set off by discrete visual techniques—the shooting and editing process itself. Consider in this regard the peculiar visual efficacy of the 1999 box office smash, *The Blair Witch Project* (Figure 3).

In this film, three amateur film makers go off into the woods in search of a fabled witch. The rough, ill-lit images produced by an unsteady camera, off-centre framing and seemingly unscripted exchanges all contribute to an enhanced sense of immediacy and visual truthfulness. In fact, the

[31] Gilles Deleuze (1988) 65.

[32] Susan Sontag (2004) 9.

[33] Edward Jay Epstein (1974) 242.

FIG. 3. The Blair Witch Project (1999) (Haxan Films).

FIG. 4. Audio–visual montage of Martin Siegel's visual deposition shown at insider trading trial, courtesy of *Legal Video Services*.

effects conjured by particular kinds of popular aesthetic styles can be deployed in non-fictional as well as fictional contexts, including the courtroom.

With cognitive and pop-cultural templates and stylistics in mind, let us now consider a lawsuit involving investment banker Martin Siegel. Siegel was accused of providing Ivan Boesky with inside information about a bank takeover, allowing both men to profit unlawfully. These illicit transactions elevated the market value of plaintiff's takeover target well beyond its predicted value. During pretrial depositions, Siegel took the Fifth Amendment over 600 times. Attorneys for the plaintiffs distilled Siegel's responses into a visual graphic for plaintiffs' use in their closing argument. What the jurors saw was defendant Marty Siegel perched in a three-by-three grid. In each of nine sequential clips, Siegel may be seen looking down at a prepared text. When the grid is complete, the audience simultaneously sees and hears the nine Marty Siegels taking the fifth (Figure 4).

Does this three-by-three grid remind you of anything? The designers of the graphic had in mind the tic-tac-toe board featured in the once-popular television game show, 'The Hollywood Squares' (Figure 5).

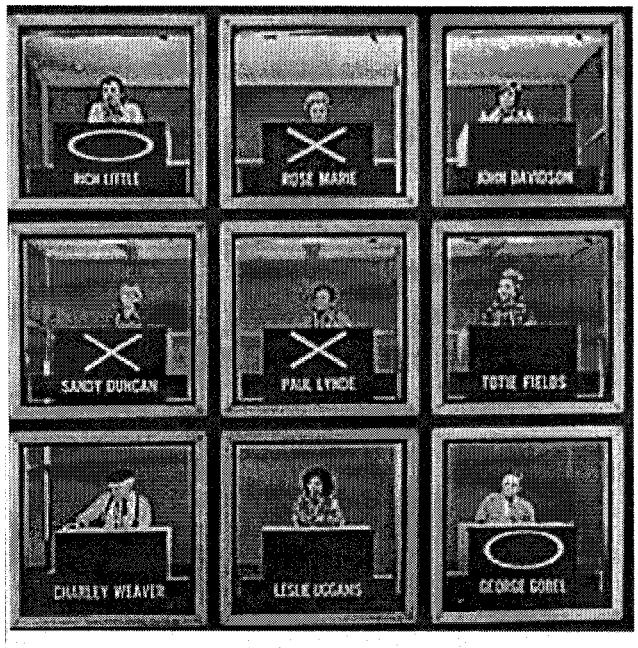

FIG. 5. The original *Hollywood Squares* television game show (1965–1982), Merrill Heatter-Bob Quigley Productions, Filmways Television, in association with the National Broadcasting Company.

The visual and aural effects of all nine Siegels simultaneously pleading the Fifth Amendment in unison is highly comical. The viewer laughs at the incongruous sight of a once-esteemed Wall Street investment banker cast in a television game show that typically featured celebrity has-beens seeking to revitalize their careers (or at least make a buck). That this response and the normative associations that it carries are being triggered by an iconic game show remains implicit, unarticulated and hence unavailable to critical reflection (in other words, unconscious). The humour on display is disarming, but there is a more serious intent at work here.

The visualization of the nine incanting Siegels simultaneously diminishes and demonizes its subject. It diminishes Siegel by implicitly portraying him as just another celebrity has-been. But it demonizes him as well. Siegel may look comical ensconced in all nine Hollywood squares, but this also serves to enhance—by masking—the real source of his guilty appearance. The humorous gloss distracts the decision maker from an implicit adverse inference that may also be taking place: namely, the unconscious association of Siegel with other so-called 'Fifth Amendment criminals' who hide the truth of their misdeeds behind a wall of silence. To say that this apparently innocuous, humorous visual display penalizes the criminal defendant for exercising his constitutional privilege against compelled self-incrimination seems counter-intuitive from the standpoint of ordinary common sense. (After all, the video clips accurately depict what Siegel said at his deposition.) In any event, to raise such an objection would seem to spoil the deceptively simple fun of the display.

In sum, the viewer gets the message because the visual code of a popular television game show icon is instantly recognizable, and the critical bite of an impermissible (albeit unconscious) inference

to raise remains hidden. To preserve the joke, the viewer is disinclined to analyse it critically. (As a trial judge once aptly put it, 'When the video goes on everyone forgets to object'.)

Another way of explaining this effect is by the way of the enthymeme. As we have mentioned earlier, according to Aristotle, the enthymeme is an incomplete syllogism. Its efficacy depends upon an implicit premise. In the case of the incanting Siegels that premise is a factually suspect truth, namely, when people are innocent they say so and when they are guilty, they remain silent. Here, we see Siegel's assertion of silence on the screen ramified ninefold. Common sense says that he must be hiding something. But by evoking a popular television game show, the three-by-three grid does more than activate the implicit logic of an enthymeme. It wraps the logical inference that is being elicited in a humorous gloss. Pop-cultural associations inflect the valence of the inference, like the way a music score or a colour tone might inflect the meaning of an image.

In the Siegel case, the common sense truth of the inference remains the same (namely, 'silence implies guilt'), but its affective disposition is altered. Humour makes the message easier to miss – consciously. Expressed explicitly, not as an enthymeme but as a completed syllogism, the inference is more clearly objectionable. In sum, by wrapping the inference in multiple layers of unconscious associations, the presenter is able to distract the viewer from the implicit message that the visual cues in the viewer's mind.

We experience something similar when a speaker invests certain words with a particular vocal tone—to indicate sarcasm, for example. (Recall Anthony's famous soliloquy in Shakespeare's *Julius Caesar*: 'For Brutus is an *honorable* man'.) Visual and *multimedia* presentations in particular are especially effective at this sort of implicit affective colouring.

Consider, for example, the use of a multimedia display in the controversial closing argument by the prosecutor in the trial of Michael Skakel. In this criminal case, the prosecution argued that 27 years before Skakel had murdered 15-year-old Martha Moxley with a golf club. During the state's closing argument, the jurors heard and saw Skakel's own words appear on a large screen inside the courtroom (Figure 6).

As Skakel uttered the word 'panic', jurors instantly saw on the screen Martha Moxley's lifeless body, just as it lay at the crime scene. The intended association is clear. Of course, Skakel experienced a 'feeling of panic' when Martha's mother asked him the next morning if he had seen Martha the night before. The picture of Martha's battered, lifeless body immediately explains the implicit meaning of his words. The viewer instantly makes the connection: upon seeing Martha's mother the next morning, Skakel must have recalled with horror what he had done the night before.

Because the viewer's emotional response to the screen image is comparable to a reality-based response, the viewer's emotional reaction to the picture of Moxley's body is readily transferred to Skakel himself. The viewer 'knows' what he or she is reacting to. And the viewer's revulsion at what Skakel had done readily casts an image of guilt in the viewer's mind. This instantaneous understanding elides the passage of time—between the murder and the morning after (in 1975), and between the time Skakel uttered these words (in 1997) and the time they were replayed at the trial itself (in 2002). In short, the jury's unconscious associations to the various media (Skakel's audio commentary and its written version timed to coincide with the victim's visual image) effectively placed the decision makers inside Skakel's head.

Once again, as in *The Blair Witch Project* and the case of the nine incanting Siegels, an implicit cultural template is being used. In this case, it is part of an enthymene that prompts the inference that the state wants the jurors to draw. The implicit premise is clear: if there is panic, there must be a cause. Here, Skakel felt panic when Moxley's mother mentioned her name on the morning after

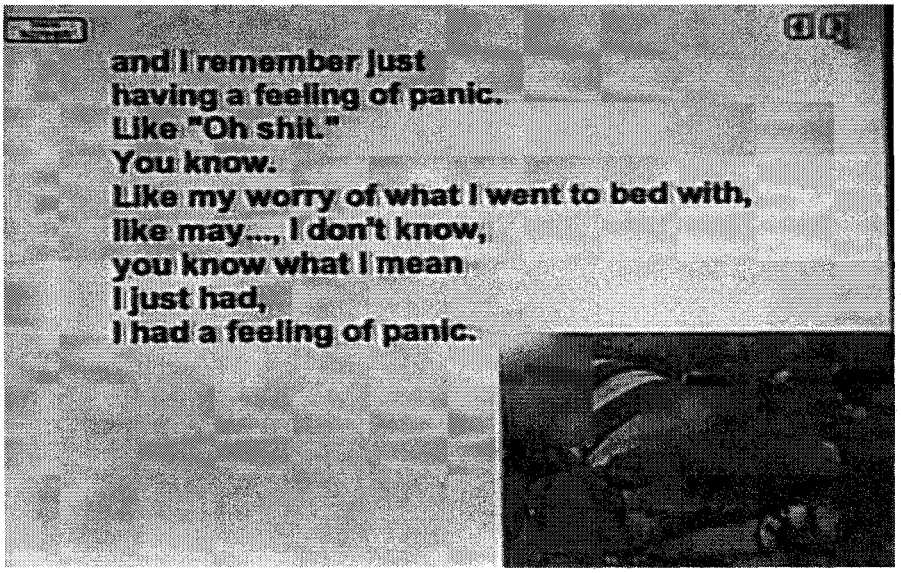

FIG. 6. Multimedia display used during the prosecution's summation at the homicide trial of Michael Skakel for the murder of Martha Moxley.[34]

her death. The image of 15-year-old Martha Moxley's lifeless body completes the syllogism. Skakel panicked when he thought of what he had done to Martha.

Of course, this causal association—Skakel panicked when he recalled Martha—is a fictional construct. There is no proof that this is the actual association that Skakel made. But it makes sense particularly since the jurors have been led to make the same association themselves. And as we know from David Hume, and from Mark Lanier in the Vioxx case, causation always works like a metaphor: we are led to a particular meaning based on a particular juxtaposition (one thing after another). We are, as Hume put it, in the habit of reading causation into the scene.[35] Glossing a given causal juxtaposition with habitual ways of thinking and feeling can tighten one's sense of causal fit. Motive is an intensifier of this kind. If you can swathe an image that is suggestive of causation in layers of affect-appropriate motivation (hate, jealousy, revenge), you can tighten the causal fit between juxtaposed events.

Conclusion

The various courtroom visuals that we have described may seem to be rather simple, even obvious examples of how visual evidence and argument prompt implicit thinking that can affect legal judgements. If so, they are simple only because we have stopped to look at and think about them

[34] See http://www.npr.org/templates/story/story.php?storyId=4473947.

[35] David Hume (1986 [1740]) 141 ('We have no other notion of cause and effect, but that of certain objects, which have been always conjoin'd [sic] together, and which in all past instances have been found inseparable. We cannot penetrate into the reason of the conjunction. We only observe the thing itself, and always find that from the constant conjunction the objects acquire a union in the imagination'.).

systematically, something that people in their everyday lives, flooded with thousands of pictures, or for that matter, participants at trial, seeing fewer pictures but not schooled in parsing them, are generally disinclined or unable to do.

A stable society agrees upon a shared repertoire of rhetorical moves, 'a lexicon of normative action', that we all mix and remix, and supplement at need, to meet the changing demands of the times. In a visually literate society, these rhetorical moves build upon visual codes that, over time, are unconsciously assumed. What we see on the screen may appear real, but like the act of perception itself, it is, to a significant degree, culturally constructed.

Pictures, conveyed through television, movies, videos, CD-ROMs, DVDs and the Internet, dominate our entertainments, our politics, our news and our methods of education, and now they are infusing law practice as well. In light of these developments, we believe that it is incumbent upon all of us, legal professionals and the lay public alike, to cultivate visual literacy. When it comes to images on the screen, we would do well to ask, 'What do we know, and how do we know it?'

In the case of visual persuasion, one thing that we know is that pictures, more than words, convey meaning through associative logic which operates in large part subconsciously, through its emotional appeal. A person may be aware that a picture is strongly linked to an emotional response without knowing or understanding what the connection is. And when the emotional underpinnings of judgement remain outside of awareness, they are less susceptible to effective critique and counter-argument. When judges and legal advocates know more about the kind of knowledge that we get from visual images on a screen, they may more effectively confront gaps and distortions that such knowledge may contain and perhaps move to correct them through other visual and non-visual sources.

The kind of scholarship that we need to achieve this goal is highly interdisciplinary in nature. We must become familiar with cognitive heuristics and various forms of cultural and emotional knowledge. We need to understand how unconscious cultural templates help members of a given community make implicit meanings explicit in response to visual stimuli. Interdisciplinary knowledge will not dispel the long-standing tension between words and pictures. But it can help us to grapple more effectively with how one affects the other—particularly inside the courtroom. It may be true that *seeing* is *believing*. The task at hand, however, is to figure out why and how this occurs. How do visual images harness the power of belief, and when is it justifiable to exploit that power inside the courtroom?

That, in a nutshell, is the challenge that implicit inferences and visual literacy, more generally, pose for jurists in the digital visual age.

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