Washington Law Review

Volume 73 | Number 1

1-1-1998

Visualizing the Law: Methods for Mapping the Legal Landscape and Drawing Analogies

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VISUALIZING THE LAW: METHODS FOR MAPPING THE LEGAL LANDSCAPE AND DRAWING ANALOGIES

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Abstract: Visualization of information is currently touted in many major disciplines as the best way to manage large amounts of data and make information intuitively accessible. The law suffers from the same information complexity as other disciplines, but has heretofore failed to investigate the possibilities of approaching the law visually. This Comment employs the metaphor of legal map-making as a way to introduce the concept of visualizing the law. It presents two methods for making legal maps. The first is based on visualizing the law's organizing metaphors, using examples of "Evidence as a Bridge" and "Negligence as an Eight-Armed Balancing Scale." The second provides a template approach to case synthesis, illustrated by an analysis of the copyright case *Sony Corporation of America v. Universal City Studios, Inc.* Each example is a "map" of the law, in that it provides visual guidance for understanding legal concepts. The methods and examples presented are intended to provide a starting place for legal thinkers to investigate the possibilities of visualizing the law as a way to increase clarity and efficiency when analyzing and communicating legal issues.

"One of the pleasures afforded to a senior justice, freed from many of the pressing demands of the judicial agenda, is the chance to take a step back and to survey the larger legal landscape in which state courts function."[1]

"By the 1970s and '80s, the legal landscape had altered significantly."[2]

"An assessment of the legal landscape existing at the time petitioner's conviction and sentence became final bolsters this conclusion."[3]

Where is this *legal landscape* everyone is talking about? Is it real? How can one get a glimpse of the legal landscape? Surely it would be helpful to *see* it instead of just read about it.

In order to lead clients on the right path, lawyers must be able to navigate what many call the legal landscape. Unfortunately, instead of a compass, a map, or a view from a high peak, lawyers are equipped only with reams and reams of text—black letters printed on white pages,

1. Ellen A. Peters, *Getting Away from the Federal Paradigm: Separation of Powers in State Courts*, 81 Minn. L. Rev. 1543, 1543 (1997).

2. Harold Hongju Koh, *Why Do Nations Obey International Law?*, 106 Yale L.J. 2599, 2624 (1997).

3. O'Dell v. Netherland, 117 S. Ct. 1969, 1970 (1997). A Westlaw search in the law review and legal publication database (TP-ALL), performed on January 17, 1998, for the term "legal landscape" produced 1263 documents. The same search in the federal case law database (ALLFEDS) produced 453 documents.

constantly demanding attention. How can lawyers get a clear view of the law when all these words are in the way? (Figure 1)

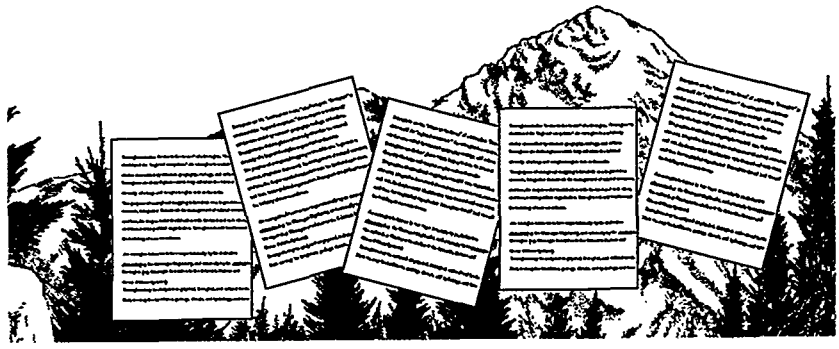

Figure 1

The answer is visualization. Visualization is the cutting-edge technique for managing the massive amounts of information used in many disciplines.[4] Lawyers could benefit greatly by following suit, symbolically pushing the stacks of words aside and learning to *see* the law. Seeing the legal landscape can provide a way to remember the law, a way to learn the law, and even a way to synthesize case law. There is no reason to be absolutely wed to text, especially when making maps of the law could so greatly increase clarity and efficiency in legal analysis and communication.

As a way to introduce the possibilities of approaching the law visually, this Comment employs the metaphor of legal map-making. A legal map is a mediation device between the law and a client's needs to

4. Visualization of quantitative information—almost universally referred to as "scientific visualization" because of its most prevalent use in the hard sciences—is designed to transform masses of data into intuitively accessible images. *See, e.g.*, *Data Visualization in Molecular Science: Tools for Insight and Innovation* (Jack E. Bowie ed., 1995); *Frontiers of Scientific Visualization* 2–3 (Clifford A. Pickover & Stuart K. Tewksbury eds., 1994) (discussing use of visualization in hard sciences, including chemistry, physics, biology, fluid dynamics, and architecture); D. Dorling, *Visualizing Changing Social Structure from a Census*, 27 Env't & Plan. A 353, 353 (1995) (cartography); John Douglas, *Visualizing Complex Systems*, EPRI J., Dec. 1994, at 18, 19–20 (monitoring power plants); Aaron M. Ellison, *Right Between the Eyes*, 44 Bioscience 622, 622 (1994) (reviewing William S. Cleveland, *Visualizing Data* (1993) (statistics and social sciences)); James Martin, *Beyond Pie Charts and Spreadsheets*, Computerworld, May 27, 1996, at 37, 37 (business); Jack Weber, *Visualization: Seeing Is Believing*, Byte, Apr. 1993, at 120, 120; Jonathan M. Unger, *Visualizing Dose Distributions and Anatomy in Three-Dimensional Radiation Treatment Planning* (1992) (unpublished M.S. thesis, University of Washington) (on file with University of Washington Engineering Library) (medicine and engineering). Visualization is so widespread as an approach to managing information that some have declared it a new discipline or area of study. *See, e.g.*, Richard Mark Friedhoff & William Benzon, *The Second Computer Revolution: Visualization* 16 (1989).

make a decision, a tool to be used by lawyers acting as legal guides. As travelers use maps of a physical landscape to decide the best way to go, lawyers create and use maps of the legal landscape to counsel clients on the best way to go.

Legal maps, however, are not limited to two dimensional pictures of legal rivers, mountains, deserts, and lakes; they take many forms, including legal machines, symbolic paintings, three dimensional graphs, flow charts, Venn diagrams, or even sketches on a yellow legal pad. It is the function of a legal map as a tool and not its form that is important. A legal map is an approach to thinking about the law, not a graphic item to be produced for its own sake.

The purpose of presenting methods for visualizing the law is to give lawyers a more effective way to conceive of legal issues and communicate them to their clients. This is neither an idyllic nor theoretical endeavor; the hope is to assist lawyers and clients to make informed strategic decisions.

The first method, presented in Part I of this Comment, is based on visualizing the law's organizing metaphors. To illustrate the role of metaphors as organizing tools and demonstrate the method of drawing them out, two examples will be presented. The first example describes and draws out the metaphor of "Evidence as a Bridge." The second example, "Negligence as an Eight-Armed Balancing Scale," describes and draws out Judge Learned Hand's classic negligence calculus from *United States v. Carroll Towing Co.*,[5] as captured in the Restatement (Second) of Torts.[6]

The second method, presented in Part II of this Comment, employs a template approach to case synthesis. The template is derived from a well-known intellectual property case, *Sony Corporation of America v. Universal City Studios, Inc.*[7] The demonstration shows both how to create a template, and how to draw and compare cases using the template. The examples presented are legal maps born of visualizing the law. Part I differs from Part II only in the specific technique employed to map the legal landscape.

5. 159 F.2d 169 (2d Cir. 1947).

6. Restatement (Second) of Torts §§ 291–93 (1965).

7. 464 U.S. 417 (1984).

I. CREATING LEGAL MAPS BY DRAWING ORGANIZING METAPHORS

"Law may make use of art, and art of law."[8]

The law is replete with visual metaphors and symbolism. In fact, upon first encountering the "seamless web" of the law, securities trading subject to "blue sky" laws, property's "bundle of sticks," the "fixed star" of constitutional principles, "yellow dog" contracts, "bright line" or "black letter" rules, "color of title," and the ever-present effort to "square" laws with prior precedent, an outsider could reasonably expect the study of the law to be much more colorful than the reams of monotonous black and white print ensconced in the law library.[9] But these visual symbols and metaphors are more than colorful dress for plain, technical bodies of law; they are organizing tools, giving thematic order to an often randomly accreted common law. For example, while different property rights have developed at different times and in different contexts, the metaphor of a "bundle of sticks" gives uniformity to the concept of property rights.

But visual metaphors go beyond the status of mere tools. They are often so normative that they do not simply communicate an existing thought, but determine or create the thought. In their influential book, *Metaphors We Live By*, Lakoff and Johnson present a compelling analysis of how metaphors can be more than mere "device[s] of the poetic imagination and . . . rhetorical flourish," instead serving as structural concepts that govern our everyday functioning.[10]

By simply examining linguistic usage and being aware of metaphors, one can draw out and elucidate these structural concepts from legal texts. As an illustration, Lakoff and Johnson use an example familiar to most attorneys. Examining the way people talk about an argument leads to an understanding of the organizing metaphor for arguments:

"Your claims are *indefensible.*

He *attacked every weak point* in my argument.

His criticisms were *right on target.*

I *demolished* his arguments.

I've never *won* an argument with him.

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8. Gustav Radbruch, *Legal Philosophy,* in 4 *20th Century Legal Philosophy Series: The Legal Philosophies of Lask, Radbruch, and Dabin* 137 (Kurt Wilk trans., 1950).

9. The examples of visual metaphors are borrowed from Bernard J. Hibbitts, *Making Sense of Metaphors: Visuality, Aurality, and the Reconfiguration of American Legal Discourse*, 16 Cardozo L. Rev. 229, 230–31 (1994).

10. George Lakoff & Mark Johnson, *Metaphors We Live By* 3 (1980).

You disagree? Okay, *shoot!*
If you use that strategy, he'll *wipe you out.*
He *shot down* all of my arguments."[11]

The metaphor organizing these statements is that argument is war. If one assumes this organizing metaphor, whether explicitly or implicitly, one will likely approach argument as a battle.

The "fruit and tree" metaphor in tax law is a wonderful example of how a metaphor, first used as a means of explaining a legal issue, becomes a normative concept in a specific area of the law. In *Lucas v. Earl*,[12] Justice Holmes described an income-producing asset as a "tree," and any income produced by that asset as the "fruit" of the "tree."[13] The metaphor became so normative in the field that scholars debate not only the underlying tax policies, but also the metaphor itself.[14] One commentator remarked that "Justice Holmes' metaphor—the fruits of a taxpayer's labor cannot be attributed to 'a different tree from that on which they grew'—has given rise to a whole body of case law that has attempted to jam facts into a metaphor."[15]

Drawing out this type of organizing metaphor and making it explicit is one way to map the legal landscape. Because these metaphors are structural and govern how people think about the law, the ability to visualize the metaphor is the ability to visualize the law.

The process of drawing out an organizing metaphor is just that, a process. It is an approach to thinking about the law. The following presentation illustrates both the process for making a legal map and the resulting legal map. As a process, the suggested methods may at times migrate from one approach to another. Questioning the accuracy or integrity of certain graphics and revising images and logical conclusions are important elements of the process. By including change and allowing the ideas to migrate, this presentation shows a method of legal map making.

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11. *Id.* at 4.

12. 281 U.S. 111, 114–15 (1930).

13. *Id.* at 115.

14. *See, e.g.*, Estate of Stranahan v. Commissioner, 472 F.2d 867, 870 (6th Cir. 1973) (noting in connection with tree and fruit metaphor that "metaphors in law are to be narrowly watched, for starting as devices to liberate thought, they end often by enslaving it") (quoting Berkey v. Third Ave. Ry. Co., 155 N.E. 58, 61 (N.Y. 1926) (Cardozo, J.)).

15. Michael J. Graetz & Deborah H. Schenk, *Federal Income Taxation: Principles and Policies* 506 (3d ed. 1995).

A. "Evidence as a Bridge"

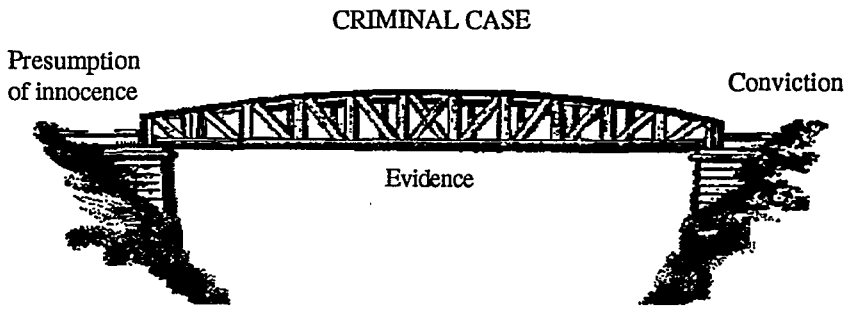

Figure 2

Knowing rules of evidence is like knowing how to build a bridge across a canyon. (Figure 2) For example, assume you are a prosecutor in a criminal case. You begin each case on the "presumption of innocence" side of the canyon and need to get across to the "conviction" side. The gap between the two sides corresponds to the burden of proof. While a prima facie burden would be represented as a narrow canyon, the burden of proof in a criminal case—beyond a reasonable doubt—is a wide chasm.

Your goal in mounting an evidentiary case is to get to the other side, to get a conviction. To do so, you must build an evidentiary bridge strong enough to support the weight of the doubt of the trier of fact. The rules of evidence describe how to build that bridge: what types of materials to use, how long each individual piece must be, and how they fit together. To get to the other side you must build a strong bridge according to the legal specifications and requirements.

This introductory description of "Evidence as a Bridge" is an example of a type of visualization that provides a powerful way to remember the law. The metaphor of a bridge creates a visual picture of the process of mounting an evidentiary case, which serves as a simple and powerful reminder of basic evidentiary rules. When faced with the task of mounting an evidentiary case, remembering the metaphor of bridge-building can provide a structured approach to thinking about the rules of evidence.

However, simply being shown a helpful image is not as important as learning to create one's own helpful images. What follows is a description of the type of process through which one could draw this image of "Evidence as a Bridge." Observing the process of interrogating a legal text and drawing out organizing metaphors should foster an understanding of this metaphoric method of visualizing the law.

Assuming for the moment that we have not yet heard that evidence is like a bridge, but are visually approaching the law of relevancy for the first time, the starting place is with the legal text. Reading through the chapter on relevancy in the classic hornbook, *McCormick on Evidence*,[16] the immediate and ubiquitous nature of organizing metaphors is readily apparent. The title of the chapter, "Relevancy and its *Counterweights*," refers to the "weight" or "weighing" of evidence.[17] The chapter continues to discuss how one must find a "ground" for refusing to hear evidence;[18] that evidence lacking in probative value is "speculative" or "remote";[19] that a single item of evidence is a "link in the chain of proof";[20] that some inferences do not "necessarily follow";[21] and that a single piece of evidence without proper inferences gives rise to the observation that "a brick is not a wall."[22]

A close reading reveals a fundamental spatial metaphor at work in many of these examples: relevancy describes both the distance between the evidence offered and the issues in the case, and the distance between the evidence presented and the proposition for which it is offered.[23] McCormick states:

> There are two components to relevant evidence: materiality and probative value. Materiality looks to the relation *between* the propositions for which the evidence is offered and the issues in the case. . . . [Probative value is] the tendency of evidence to establish the proposition that it is offered to prove.
>
> . . . .
>
> In sum, relevant evidence is evidence that in some degree *advances* the inquiry.[24]

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16. *McCormick on Evidence* 540 (Edward W. Cleary ed., 3d ed. 1984).
17. *Id.* (emphasis added).
18. *Id.*
19. *Id.* at 542.
20. *Id.*
21. *Id.* at 543.
22. *Id.*
23. *Id.* at 541–42.
24. *Id.* at 541, 544 (emphasis added).

The organizing metaphor of relevancy-as-distance is furthered in the discussion of direct and circumstantial evidence: "Direct evidence is evidence which, if believed, resolves a matter in issue. Circumstantial evidence . . . , [if] accepted as true, [requires] additional reasoning . . . to *reach* the proposition *to which it is directed.*"[25]

Drawing out the metaphor of relevancy-as-distance could start with a basic visual depiction of spatial relations. For example, relevancy could be the distance between two sides of a gap. (Figure 3)

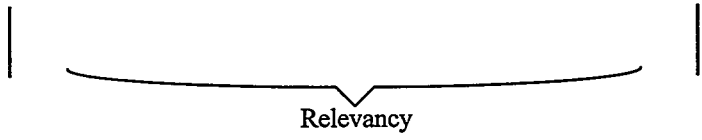

Figure 3

This simple graphic visually represents relevancy-as-distance. But is it articulate? What do these lines represent? Are the essential elements here? How should they be placed to accurately reflect the logic of the law of relevancy?

These questions raise an important point: when visualizing the law, one must keep in mind basic principles of graphic representation; one principle is to erase all ink on the page that does not convey information.[26] Other important principles include: avoid unnecessary ornamentation that does not add meaningful information (no "chartjunk");[27] maximize the information capacity of all ink, because often lines can mean more than one thing;[28] and always try to tell a story with the graphic.[29] These principles often guide revisions and refinements of graphics.

For instance, if relevancy is a gap between two sides, what are those sides? As a function of logic,[30] relevancy-as-gap could represent the logical gap between a piece of evidence and the proposition for which it is offered. (Figure 4)

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25. *Id.* at 543 (emphasis added).

26. *See* Edward R. Tufte, *The Visual Display of Quantitative Information* 96 (1983).

27. *Id.* at 107.

28. *Id.* at 139.

29. *Id.* at 177.

30. *McCormick on Evidence*, *supra* note 16, at 542 ("Evidence . . . is said to have 'logical relevance.'") (citations omitted).

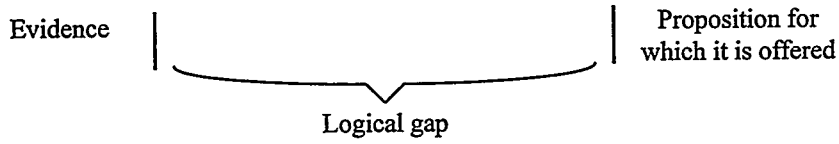

Figure 4

But why have evidence on one side of the gap? Should not the evidence itself span the gap? It is, after all, the evidence that is or is not relevant. Therefore, it should be the evidence that does or does not span the gap. (Figure 5)

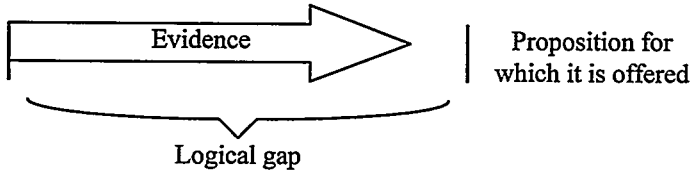

Figure 5

What then, is on the left side of the gap? And where do all the other elements of relevancy, materiality, probative value, and issues in the case go?

Notice that at this point a "dialogue" has begun between the author and the organizing metaphor of relevancy-as-gap. In a sense, the law as embodied in McCormick's text speaks to the author about the character of evidentiary relevance and, by questioning that characterization, the author speaks back to the text. This type of dialogue is the primary method for drawing out and making explicit an organizing metaphor. Thinking out analogies to their logical conclusions, picturing ideas, and creatively probing to understand the deepest organizing principles of an area of the law is an exciting and fruitful form of visualizing the law.

Going back to relevancy-as-gap, we can develop the visual metaphor further by adding the other elements of evidentiary relevance such as materiality, probative value, pieces of evidence, and issues in a case. If we were to suppose that the left side of the gap is where one is before evidentiary issues have been proved, and the right side is the place one is trying to go, that is, the place where one's propositions are proved, then the space between them is the logical gap one must span with pieces of evidence.

One legal element that might fit into the scheme is the required burden of proof. Because the gap represents that challenge to the offeror, widening the gap is a way to show an increased burden, from prima facie, to a preponderance of the evidence, to clear and convincing, or to beyond a reasonable doubt. (Figure 6)

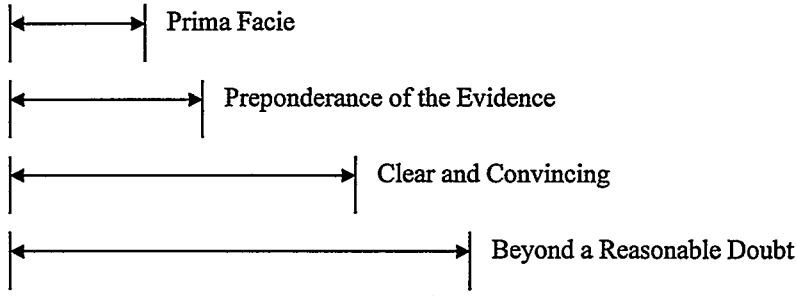

Figure 6

While one normally must use many different types of evidence, each type must exhibit characteristics of materiality and probative value. Since materiality is dependent on the issues in the case to which the evidence is directed, the placement of the evidence, represented by where the evidence touches the other side, could correspond to materiality. If the evidence is directed at a particular issue in the case, then it is material. If it is directed at something that is not an issue in the case, it is not material. (Figure 7)

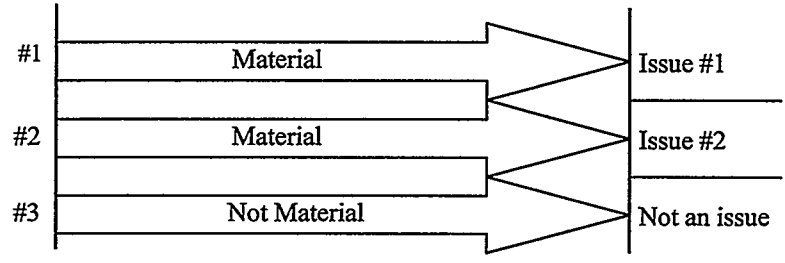

Figure 7

Probative value either advances an inquiry, describing evidence that is close to the proposition for which it is offered, or describes evidence too remote to be of value. As such, probative value could be represented by the length of the piece of evidence. The longer the piece of evidence, the

closer it is to the proposition for which it is offered. Since each proposition offered corresponds to an issue in the case, probative value can also be expressed graphically. (Figure 8)

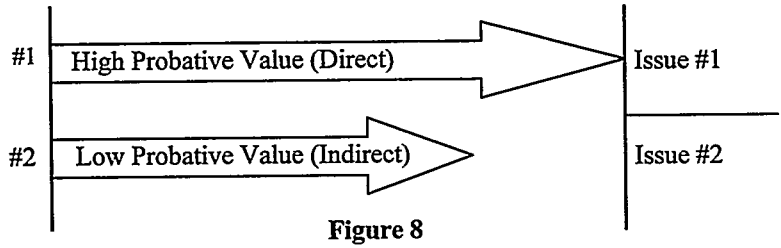

Figure 8

Direct evidence resolves a matter in issue. A piece of evidence that spans the gap by itself is direct evidence. A shorter piece of evidence is circumstantial evidence. Circumstantial evidence does not span the gap in one piece, but if multiple pieces of such evidence fit together, they could reach the other side. (Figure 9)

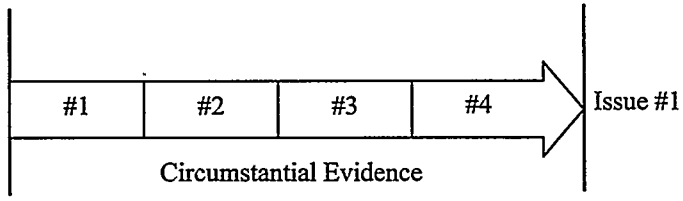

Figure 9

"Spanning a logical gap," "pieces of evidence," "reaching from one side to the other"—all these phrases and images point to a more generalized organizing metaphor for evidentiary relevance: building a bridge.

After having interrogated the text and listened both to the logical requirements of the law and the visual logic of the graphics, we have arrived at the helpful image of "Evidence as a Bridge." Going through

the process of drawing out the metaphor, that is, approaching the law visually, gives us a deeper understanding of the law than if we had simply been given the image. Once conceived, the metaphor can be further explored.

The burden of proof, illustrated by the width of the canyon, dictates the logical rigor required of the evidentiary bridge one must build. If one is to build a long bridge, the materials must be strong and well connected. Preferably, one will have strong beams that will span the gap by themselves (direct evidence) and not have to piece together lots of small pieces (circumstantial evidence). Regardless of the size of the pieces, all of the pieces require structural integrity.

Testimony, expert witnesses, forensic evidence, demonstrative and physical evidence, and police reports are all pieces for constructing an evidentiary bridge, like girders, rivets, asphalt, steel cables, and lumber are pieces for building a physical bridge. The rules of evidence, insuring the truthfulness and accuracy of evidence presented in court, are like building specifications showing builders exactly how structurally strong, that is, reliable, the pieces of evidence must be.

Weak pieces of evidence, even though they may span the gap, may not support the doubt of the trier of fact. This would be the case if there were an eyewitness whom the trier of fact did not trust. As a piece of direct evidence, the eyewitness account should bridge the gap by itself and support the weight of the doubt of the trier of fact. But the testimony, although it might appear reliable and strong, is in fact corrupt and flawed.

One could continue to spin out this metaphor and find new and more interesting ways to conceive of the rules of evidentiary relevance. For instance, if pieces of evidence are like pieces of building materials for a bridge, what types of evidence are wooden beams? What types are steel cables? Which are rivets?

While the metaphor may help one engage with the law, at a certain point it can be distracting and no longer helpful. For example, what type of building material is an expert witness? Frankly, who cares? How would classifying an expert witness as wood or steel help create a legal map that one could use to remember the law of evidence? Making legal maps is an approach to thinking about the law, and drawing out organizing metaphors as a way of making legal maps is a tool. Once the metaphor or drawing takes over the analysis, however, it no longer serves its purpose and should be abandoned.

Although there is a point at which the metaphor of "Evidence as a Bridge" does become distracting, the process of discovering the metaphor and drawing it out through a dialogue with the text is a very

helpful way to remember the law. When confronted with a concrete evidentiary issue in an actual case, one will profit by realizing that one is building a bridge. This type of visualization can help a lawyer recall important elements of the law of evidence as well as how those elements relate to each other. The evidentiary bridge must correspond to the issues in the case and must be strong and wide enough to support the triers of fact, with all their doubts, while helping them travel from one side of the canyon to the other.

Sometimes organizing metaphors are more obvious than "Evidence as a Bridge," but developing their visual details nonetheless provides an engaging way to study and remember the law. In the next example, the omnipresent legal metaphor of balancing organizes a famous theory of determining negligence.

B. Learned Hand's Eight-Armed Balancing Scale

This next example of legal map-making shows how visualizing the law can help one learn complex legal doctrines. By drawing out an organizing metaphor and interrogating it, one can *see* the logical inconsistencies, or greater patterns of logical coherence, within the legal doctrine. The simple and common metaphor of a balance reduces the challenge of understanding the organizing metaphor and allows one to focus on what is being balanced, thereby focusing more on detail than on the big picture.

In *United States v. Carroll Towing Co.*,[31] Judge Learned Hand presented the well-known formula of $B < PL$ to determine negligence. In *Carroll Towing*, an admiralty case, the main issue was whether the employee in charge of a barge was negligent in being ashore when the barge encountered difficulties and sank,[32] thereby rendering the barge company contributorily negligent.

Judge Learned Hand began his analysis by commenting that there can be no general black-letter rule for negligence liability.[33] But since accidents do happen, there must be some way of determining a person's negligence in a specific situation. He therefore proposed a calculus:

> Since there are occasions when every vessel will break from her moorings, . . . the owner's duty . . . to provide against resulting injuries is a function of three variables: (1) The probability that she will break away; (2) the gravity of the resulting injury, if she

31. 159 F.2d 169 (2d Cir. 1947).

32. *Id.* at 171.

33. *Id.* at 173.

> does; (3) the burden of adequate precautions. Possibly it serves to bring this notion into relief to state it in algebraic terms: if the probability be called P; the injury, L; and the burden, B; liability depends upon whether B is less than L multiplied by P: i.e., whether B less than PL.[34]

This idea of balancing the likelihood and magnitude of risk against the burden of protecting against the risk was captured and expanded in the Restatement (Second) of Torts sections 291–93. As stated in section 291, the cost/benefit analysis depends on whether the magnitude of the risk outweighs the utility of the act.[35] The Restatement goes on to list the factors to be considered on each side.[36]

Section 292 lists the factors to be considered for determining the utility of an actor's conduct:

> In determining what the law regards as the utility of the actor's conduct for the purpose of determining whether the actor is negligent, the following factors are important: (a) the social value which the law attaches to the interest which is to be advanced or protected by the conduct; (b) the extent of the chance that this interest will be advanced or protected by the particular course of conduct; (c) the extent of the chance that such interest can be adequately advanced or protected by another and less dangerous course of conduct.[37]

Section 293 lists the factors for determining the magnitude of risk:

> In determining the magnitude of the risk for the purpose of determining whether the actor is negligent, the following factors are important: (a) the social value which the law attaches to the interests which are imperiled; (b) the extent of the chance that the actor's conduct will cause an invasion of any interest of the other or of one of a class of which the other is a member; (c) the extent of the harm likely to be caused by the interests imperiled; (d) the

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34. *Id.*

35. *See* Restatement (Second) of Torts § 291 (1965).

> Where an act is one which a reasonable man would recognize as involving a risk of harm to another, the risk is unreasonable and the act is negligent if the risk is of such magnitude as to outweigh what the law regards as the utility of the act or of the particular manner in which it is done.

Id.

36. *See* Restatement (Second) of Torts §§ 292–93 (1965).

37. Restatement (Second) of Torts § 292.

number of persons whose interests are likely to be invaded if the risk takes effect in harm.[38]

Drawing out the organizing metaphor of balancing and thinking visually about this balancing process clarifies certain aspects of this legal landscape. First, there are multiple factors to be balanced. A traditional scale, with trays on either side of a beam, may not be sophisticated enough to properly arrange these factors. (Figure 10)

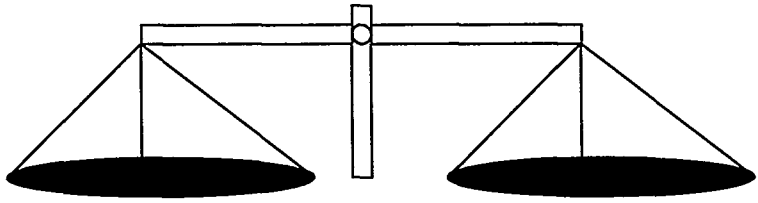

Figure 10

While the factors could be represented by different sized weights placed in the trays, such a method would not distinguish between the different types of weights, or factors, and would not be as articulate as a scale wherein each factor had its own arm with a movable weight. (Figure 11)

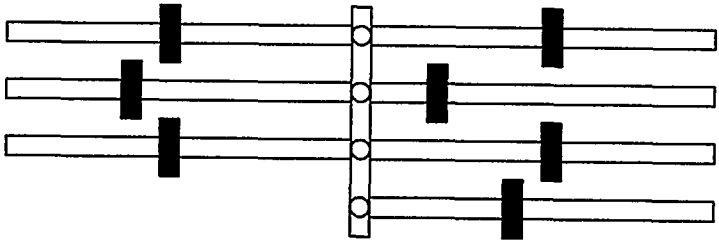

Figure 11

But notice how there are only three factors on the utility side and four on the side of magnitude of risk. How do four arms balance out three? And which factors should be opposed to each other? What factors represent countervailing societal interests? Once again, a dialogue has begun in which the author has to further investigate the legal subject matter in order to make sense of it in the mind's eye.

38. Restatement (Second) of Torts § 293.

Because a balance would not work any other way, each side's set of arms will have to balance out the other side. Although there are seven factors, three on one side and four on the other, for the purpose of visual and logical consistency there could be one more factor implicit in the Restatement system.[39] Our natural sense of symmetry leads us to question the graphic and look for an eighth, "ghost" arm. The learning that occurs while satisfying this inquisitive impulse, and the understanding that comes upon finding that missing arm, are the benefits of visualizing through drawing out metaphors.

In order to see the implicit factor, it is helpful to line up the counterbalancing factors as sets. The first set is composed of section 292(a) on the utility side[40] and section 293(a) on the side of magnitude of risk.[41] Section 292(a) is the social value placed on the conduct in question.[42] The countervailing interest is expressed in section 293(a) as the social value of the threatened interests.[43] Section 292(a) asks how important is the potentially dangerous conduct? Section 293(a) asks how important is it that the potentially injured people be allowed to participate in the conduct that places them at risk?

For example, the law likely places a high social value on the ability of ambulances to speed through traffic at speeds in excess of the speed limit. The value placed on the countervailing consideration, the ability of everyone else on the road to drive safely without having to slow down for ambulances, is relatively low. According to Learned Hand's calculus, the high social value placed on ambulances weighs against finding an ambulance driver negligent.

Conversely, the law likely places a lower value on the ability of the average citizen to speed through traffic and a higher value on the ability of everyone else on the road to drive along without having to dodge speeders. This valuing weighs in favor of finding the average citizen negligent for speeding.

Visually, the ambulance example could be expressed as follows in Figure 12.

39. *See supra* notes 35–38.

40. Restatement (Second) of Torts § 292(a).

41. Restatement (Second) of Torts § 293(a).

42. Restatement (Second) of Torts § 292(a).

43. Restatement (Second) of Torts § 293(a).

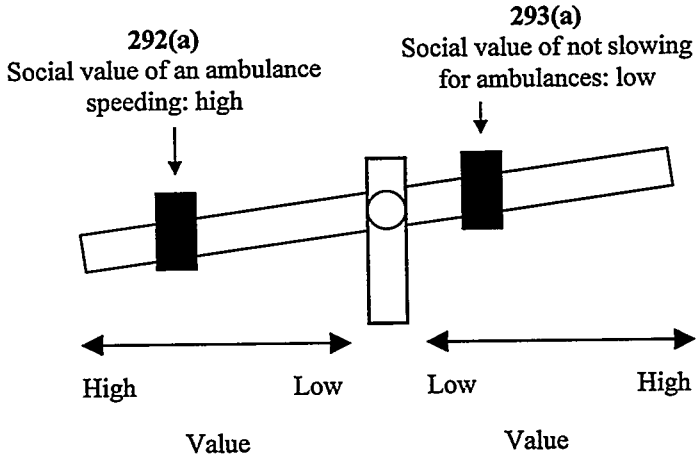

Figure 12

Likewise, the speeding citizen example could be expressed as in Figure 13.

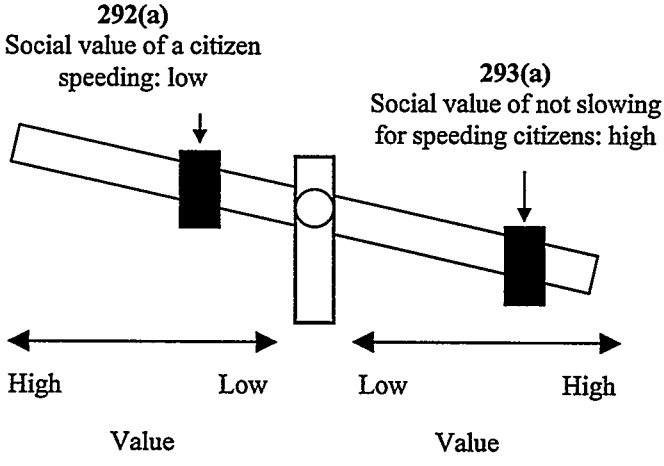

Figure 13

The next set of factors is found in sections 292(b) and 293(b) of the Restatement. Section 292(b) is the chance that the conduct will achieve its goal and be useful.[44] Section 293(b) is the chance that someone will get hurt or an accident will happen.[45]

44. *See supra* note 37 and accompanying text.

45. *See supra* note 38 and accompanying text.

For example, if an ambulance speeds, there is a relatively high chance that it will reach the hospital quickly and perhaps save someone's life. Because everyone learns to let speeding ambulances have the right of way, the chance that a speeding ambulance will get in an accident with another person is relatively low. This could be expressed visually as follows in Figure 14.

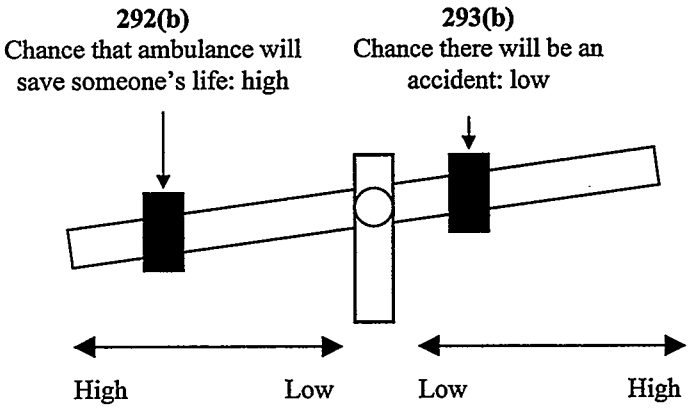

Figure 14

Now comes the interesting part. These two sets of factors are on the same balance; the weight distribution of one set of arms, section 292(a) and section 293(a), affects the other set, section 292(b) and section 293(b), and vice versa. In fact, all four factors affect the entire balancing of the scale. Placing connectors between the arms on either side could represent this inter-connection between the factors. (Figure 15)[46]

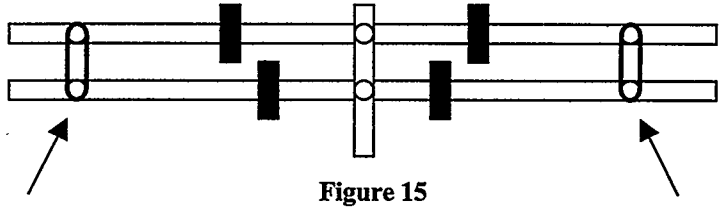

Figure 15

Whenever one set of factors leans a certain way, it also affects the way the other factors lean.

Keeping this inter-connectivity in mind, we can move on to the third set of factors. The factor in Restatement section 292(c) is the chance that the interest of the conduct can be advanced by a less dangerous

46. A keen engineering eye will see many flaws in the mechanics of this design. But remember that it is for conceptual purposes and not intended as a blueprint.

alternative,[47] that is, is there a safer way to do it? For example, are oil tankers the only way to transport oil? Logically, the countervailing consideration to this factor is the need to do it the dangerous way. But, unfortunately for the logical and aesthetic symmetry of the law, no such factor is listed in section 293. Instead, one is left with section 293(c), the extent of the harm possible,[48] and section 293(d), the number of people potentially affected.[49] Neither of these factors is the converse of section 292(c).

Although symmetry would be preferable, it makes little logical difference whether the countervailing considerations are linked to each other as mirror opposites. All that matters is that the factors are balanced against each other.[50] Logically, and legally, there is no reason not to place section 292(c) adjacent to section 293(d) and balance the chance of a less dangerous alternative (section 292(c)) against the number of people potentially injured (section 293(d)). (Figure 16)

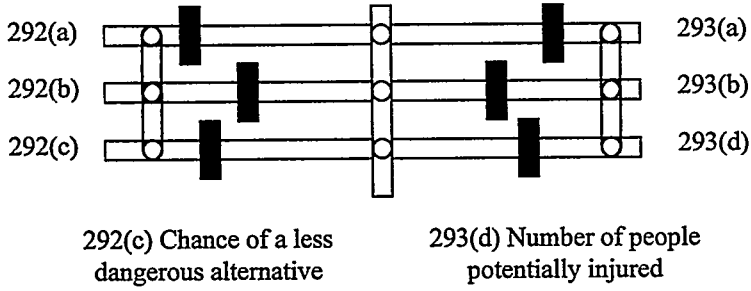

Figure 16

The remaining factor, section 293(c), the extent of harm likely to be caused in the case of an accident,[51] does not have an explicit corollary in section 292. But the extent of harm likely to be caused is an issue of cost in a very general sense; that is, what is the cost of the possible harm? For instance, it is highly probable that some harm will result from the activity of throwing a tennis ball into a crowd. But the physical, financial, emotional, and social costs of this harm would be relatively low.

47. Restatement (Second) of Torts § 292(c).

48. Restatement (Second) of Torts § 293(c).

49. Restatement (Second) of Torts § 293(d).

50. This is not to overlook the importance of asymmetry as a valuable way to see gaps and logical inconsistencies.

51. Restatement (Second) of Torts § 293(c).

Alternatively, the chances that a nuclear reactor will melt down are slim. But if it does, the costs would be astronomical.

The consideration logically corresponding to section 293(c) is the cost of doing things safely instead of dangerously. For instance, how much would it cost to create nuclear power elsewhere, or even not at all?

Taking the prerogative to strive for aesthetic symmetry (which often corresponds to logical coherence) one can create an extra balancing bar to fully incorporate the Restatement of Torts doctrine[52] and visually represent the inherent logical symmetry. Thus, incorporating all four sets of balancing factors, the final legal map of this vision of negligence calculations could look like Figure 17.

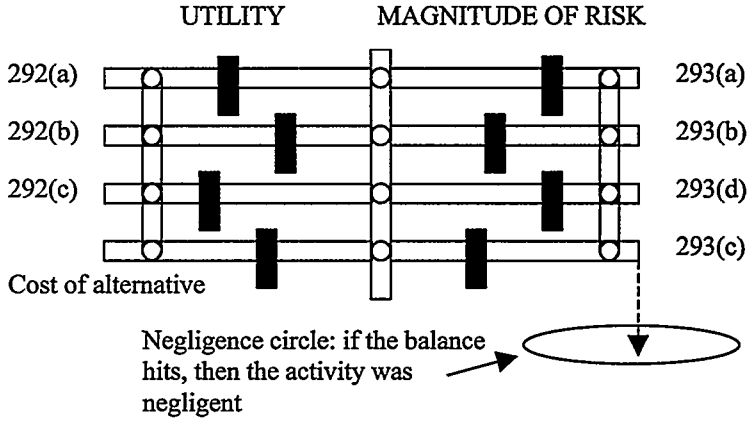

Figure 17

Although this balance may not look like any type of map in the sense of a graphic representation of physical or logical terrain, it ultimately serves the same purpose: helping lawyers understand negligence law and communicate it to their clients.

Visualizing the law by drawing out organizing metaphors like the balancing scale can deepen legal understanding and increase familiarity with legal concepts such as the cost/benefit analysis in negligence law. By visualizing the law, you can *see* the logical coherence of the law and deepen your understanding of it.

52. Restatement (Second) of Torts §§ 291–93.

II. THE TEMPLATE APPROACH TO CASE ANALYSIS

Legal maps provide conceptual clarity. The expression "I see!" often signifies understanding.[53] Expressions such as "seeing the holes in an opponent's argument" or "seeing differences in fact patterns" describe forms of understanding or insight.

This Part presents a second method for making legal maps based on a process of drawing and comparing cases. It differs from the previous two examples, "Evidence as a Bridge" and Learned Hand's "Eight-Armed Balancing Scale," in that instead of a drawn out metaphor or image, it is simply a drawing of the legal elements of cases compared side by side. It is a very useful way to synthesize cases and determine whether a case provides strong precedential support for a legal argument. The U.S. Supreme Court case of *Sony Corp. of America v. Universal City Studios, Inc.*,[54] provides an example of the important role case comparison plays in legal analysis.

A. Sony Corp. of America v. Universal City Studios, Inc.

Popularly known as the "time-shifting" VCR case, *Sony Corp. of America v. Universal City Studios, Inc.* addressed the liability of Sony, a manufacturer and vendor of home videotape recorders, to Universal Studios and Walt Disney Productions (Universal), whose movies and television programs were being recorded by owners of Sony's Betamax VCRs.[55] Universal sued Sony on the theory that by manufacturing, advertising, and selling the VCRs to the public, which then arguably infringed Universal's copyrighted movies and television shows by recording them off the television, Sony was an indirect infringer, vicariously liable for the Betamax-owning public's copyright infringements.[56]

One of Universal's primary arguments was based on a case named *Kalem Co. v. Harper Bros.*[57] In *Kalem,* a film producer made an unauthorized film version of the copyrighted book *Ben Hur*, which he then distributed to wholesalers who arranged for public screenings.[58] The

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53. *See, e.g.*, Samuel H. Solomon, *Playing High-Tech Show-and-Tell in Courtroom: Chalk and Legal Argument Are No Longer Sufficient*, N.Y. L.J., May 22, 1995, at 7, 11 (discussing tests that show how information presented to jurors verbally and visually is six times more effective than purely verbal presentations).

54. 464 U.S. 417 (1984).

55. *Id.* at 419–20.

56. *Id.*

57. *Id.* at 435–38 (citing Kalem Co. v. Harper Bros., 222 U.S. 55 (1911)).

58. *Id.* at 435.

act of showing the film violated the original author's copyright, and, by assisting in the advertising and making the film available for public viewing, the film producer assisted in the copyright violation.[59] Accordingly, the Court in *Kalem* found the producer vicariously liable for the direct infringement by the wholesalers.[60]

Universal characterized *Kalem* as standing for the proposition "that supplying the 'means' to accomplish an infringing activity and encouraging that activity through advertisement [is] sufficient to establish liability for copyright infringement."[61] Universal believed that because Sony distributed the VCRs—the means by which the public was infringing Universal's copyrights—Sony was vicariously liable to Universal for the public's copyright infringements.[62] The *Sony* Court disagreed with Universal's characterization of *Kalem* and considered *Kalem* too factually distinguishable to provide supportive precedent.[63]

By "drawing" *Kalem*, Universal's characterization of *Kalem* as precedent, and *Sony*, and then comparing the three drawings, one can see the differences between the cases and why the Court concluded that *Kalem* did not provide precedential support for Universal's allegations.

B. Drawing Cases

Drawing cases consists of summarizing the essential legal elements of a case and putting the elements on paper in a logical manner, usually in the narrative order of how the case is explained in an opinion. The resulting story is not so much a recounting of what happened factually, but what the judge said happened legally.

As with any case analysis, the first step is to read the case to which other cases will be compared. This could be the first case in a line of cases, the seminal case in a field, or, as in the present demonstration, the case relied upon as precedent. This initial reading should not be too critical; it serves simply to summarize the essential legal elements of both the specific case and all the cases with which it will be compared. This first case provides the template for comparison and synthesis.

59. *Id.* at 435–36.

60. *Kalem*, 222 U.S. at 62–63.

61. *Sony*, 464 U.S. at 436–37.

62. *Id.* at 417.

63. *Id.* at 436.

The essential legal elements of *Kalem* are as follows:

(1) plaintiff/writer of the copyrighted book *Ben Hur*;[64]

(2) defendant/movie producer who made an unauthorized movie version of Ben Hur, based on the book;[65]

(3) copyrighted work: the story of Ben Hur, in whatever form;[66]

(4) act of the producer selling his movie version to wholesalers;[67]

(5) act of the wholesalers directly infringing the plaintiff's copyright by showing the movie to the public.[68]

Placing these elements together in a narrative/visual form yields the simple legal story of *Kalem*. (Figure 18)

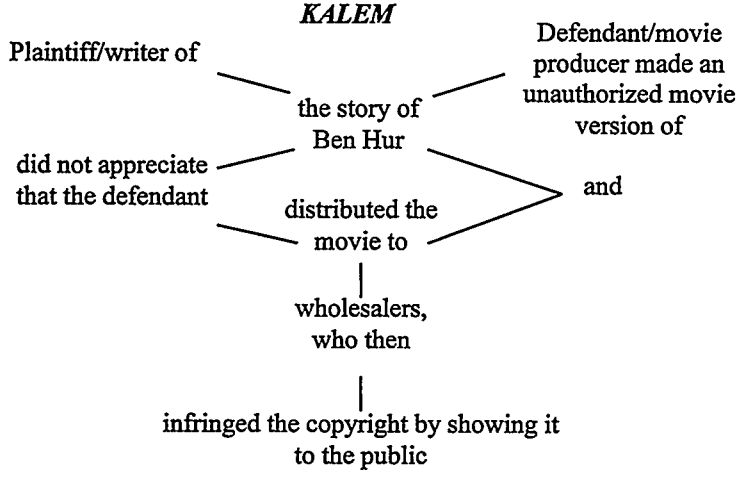

Figure 18

From this first story, a more abstract story can be drawn to serve as a template. The abstracted elements of the template are as follows:

(1) plaintiff/copyright owner;

(2) defendant/alleged infringer;

(3) copyrighted work;

(4) defendant's alleged act of infringement;

64. *Id.* at 435–36.

65. *Id.*

66. *Id.*

67. *Id.*

68. *Id.*

(5) direct infringer;

(6) act of direct infringement.

Replacing the specific elements of *Kalem* with generalized categories yields a simple template. (Figure 19)

TEMPLATE

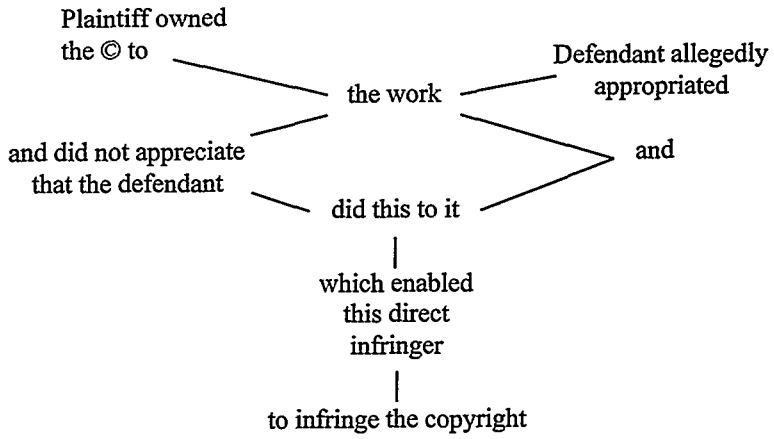

Figure 19

Using this template, more specific pictures of *Kalem* and *Sony* can be drawn.

In describing *Kalem*, the *Sony* Court stressed several key issues that should be included in an accurate picture of the case.[69] First, the Court stressed that the producer directly infringed the work when he made an unauthorized film version, which occurred well before the film was distributed.[70] Second, the producer advertised the commercial showings, indicating that he intended to appropriate the value of exploiting the copyrighted work.[71] Lastly, it was important that what the defendant distributed to the wholesalers—the physical film upon which the producer's version of Ben Hur was recorded—could only be used for an infringing purpose.[72]

These additional elements should be placed in the picture of *Kalem*. The producer's appropriation of the work when he made the film version of Ben Hur is incorporated as a necessary description of the defendant.

69. *Id.* at 435–37.

70. *Id.* at 436.

71. *Id.* at 435–36.

72. *Id.* at 436.

An additional line going from the defendant to the infringing showing of the movie to the public can represent the defendant's incriminating advertising. The final picture of *Kalem* would look like the following. (Figure 20)

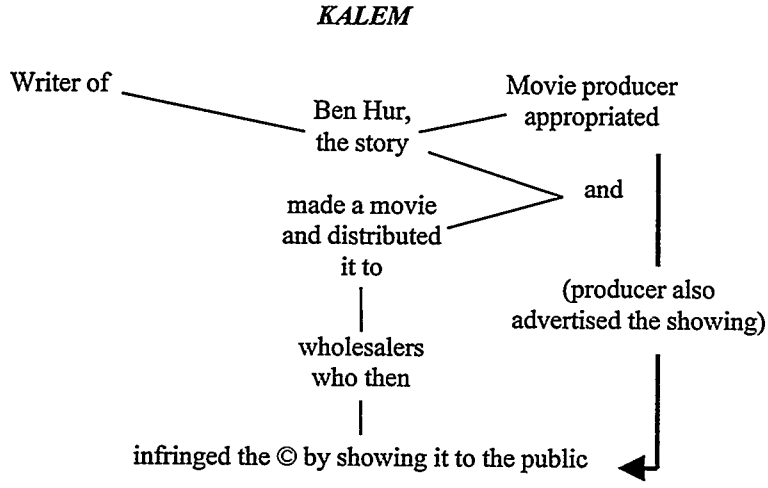

Figure 20

1. *Comparing Case Drawings: Defendant's View of* Kalem

Universal's picture of *Kalem Co. v. Harper Bros.*[73] is more abstract than *Kalem* itself. By characterizing the case at a higher level of abstraction, Universal tried to derive a principle, a rule, from the case; the plaintiff made its own template. Universal abstracted the general structure of the fact pattern in *Kalem*, as well as two specific elements: supplying means for an infringing activity and encouraging infringement through advertising.[74] They contended that these two aspects constituted a complete picture, a new rule against which the facts in *Sony Corp. of America v. Universal City Studios, Inc.* could be compared and judged.[75] Notice that the appropriation of the plaintiff's copyrighted work (the active verb attached to the defendant in *Kalem*) is conspicuously absent in Universal's picture. In fact, there is no plaintiff in Universal's picture, and the defendant need not appropriate a copyrighted work, but only supply a means for infringing. (Figure 21)

73. 222 U.S. 55 (1911).

74. *Id.*

75. 464 U.S. 417.

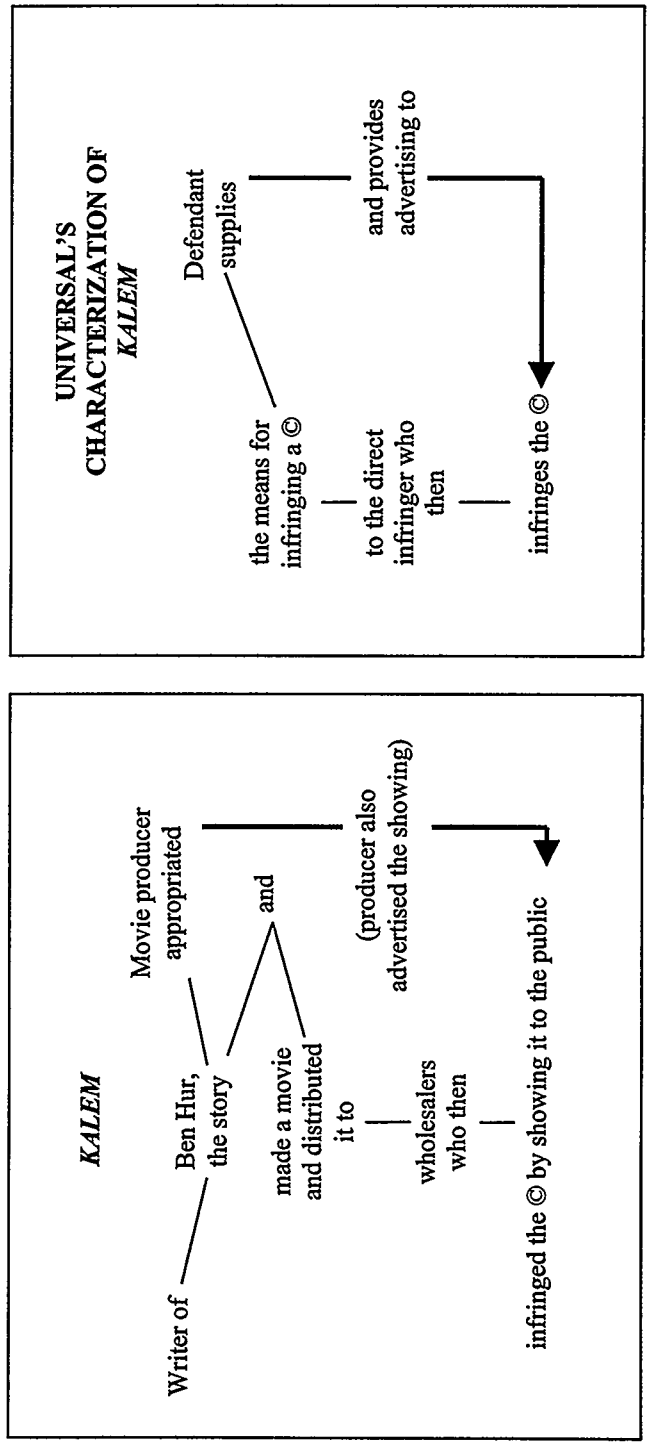
KALEM
Writer of
Ben Hur, the story
Movie producer appropriated
and
made a movie and distributed it to
wholesalers who then
infringed the © by showing it to the public
(producer also advertised the showing)
UNIVERSAL'S CHARACTERIZATION OF KALEM
Defendant supplies
the means for infringing a ©
to the direct infringer who then
infringes the ©
and provides advertising to

Figure 21

2. *The U.S. Supreme Court's Picture of* Kalem

The U.S. Supreme Court critiqued Universal's "picture" of *Kalem* by noting differences in the description of what the defendant supplied to the direct infringer. According to the Court, the producer supplied both the means *and the protected work.*[76] In Figure 20, "made a movie and distributed it to" stands both for the physical film given the wholesalers and the wrongfully appropriated story of *Ben Hur.* In Figure 21, Universal's characterization of *Kalem* is incorrect insofar as it abstracts from "made a movie and distributed it to" to "the means for infringing a copyright." The proper abstraction would have been from "made a movie and distributed it to" to "the copyrighted work." (Figure 22)

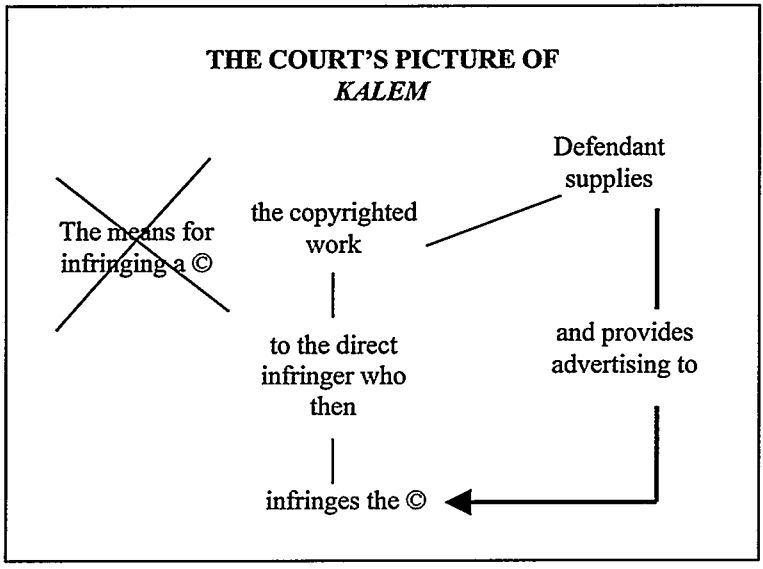

Figure 22

3. Sony: *The Difference Between Ben Hur and a Betamax*

The Court noted that in *Kalem*, the defendant supplied the copyrighted work to the public, whereas in *Sony*, the copyright owner supplied the work to the public themselves. This, combined with the fact that the Betamax recorder could be used for many non-infringing activities, distinguished *Sony* from the Court's picture of *Kalem.* (Figure 23)

76. *Id.* at 436–37.

THE RULE OF KALEM
the appropriated copyrighted work
Defendant supplies
and provides advertising to
to the direct infringer who then
infringes the ©
SONY
Universal supplies the
copyrighted TV shows and movies
to the public who then
infringes the ©s
Sony makes VCRs, but does not supply the © work
VCRs can be used for infringing and non-infringing activities

Figure 23

Besides noticing the difference in the factual subject matter and the parties, one can look at this drawing of the cases and see how different *Kalem* is from *Sony*.

If one were to come across a similar fact pattern in practice and find himself or herself in this area of the legal landscape, drawing out the new picture and laying it down next to these pictures would indicate how similar or dissimilar the new case was from prior precedent. This, in turn, would inform the strategy for navigating the landscape of vicarious liability in copyright law.

III. CONCLUSION

As the twenty-first century approaches, computing technology will continue to simultaneously liberate our imaginations and bury our hopes in an avalanche of information. Lawyers naturally create mental maps of the law to see where to go and to help situate themselves with respect to the landmarks of precedent and past experience. As the pace of the practice of law increases, this process will need to be more explicit. In the not too distant future, the ability to visualize the law and make legal maps may be the quintessential skills of a lawyer.

It is hoped that the methods and examples presented in this Comment will increase awareness of the power and promise of visualization. But the specific processes and methods used in this Comment are by no means exclusive, exhaustive, or ideal. Visualization as a discipline is in its early stages. Visual thinking in practice would likely consist of hastily written, hand-scratched flow charts, doodles, and line drawings. Indeed, quick sketches may be the ideal expression and organizing method for visually thinking about the law.

Visualization is an approach to thinking about the law, not a graphics project. The point is not to be an artist, but a clear-thinking attorney. The clearest thinking attorneys are often those with the most accurate and refined mental maps of the law. They know where they stand legally, and they know what avenues are available. Approaching the law through the mind's eye and learning to create legal maps will without question increase an attorney's ability to think clearly and navigate the legal landscape. And as the legal landscape becomes more and more complex and difficult to predict, the ability to create a map may be the only way to know where you are going.