

Legal Modelling: from Print to Multimedia

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Humans communicate through their senses, at the convergence of heterogeneous codes; each having its specific rules to deliver the messages. The written form, as a reduction of the spoken, fails to codify all of the reality transposed by speech such as prosodic elements, intonation and stress. This mutation impoverishes the quality of natural human communication, which is based on heterogeneous codes, to a homogeneous code, which led Bloomfield to deny that writing may attain the status of language. For him, writing is merely a way of recording speech by means of visible symbols (1). Film accomplishes another step in the evolution of humanity through a much more natural fusion of sound and sight, reproducing the real human communication setting. Today, multimedia proposes another convergence, as it places a greater emphasis on the interaction between speech and the visual art, while preserving some elements from print. This article begins with a discussion of what constitutes the concept of a model by specifying that human communication relies on various models to produce messages. The new medium makes it possible to draw from the diverse repertoires of signs according to different codes in order to select a blend of symbols that correspond to a cognitive task. In the next section, my purpose is to demonstrate that legal writing codifies the visual aspects of human communication as well as speech by promulgating a lineal mode of linkage according to chronological time. In the last section, I will specify that a better understanding of legal reasoning is crucial to transcode from print to the new medium and also to determine a structure of knowledge that is amenable to electronic teaching.

1. The notion of the model

A model is one of the concepts that is loosely used to denote a representation of some aspect of the world, the interactions and relationships between its components. The benefit of the model is to describe, simplify or reproduce the operations that the real world object would undergo. There are many different models reflecting various objects of the world. It is also possible that several models correspond to one aspect of the

world. Generally models are constructed by analogy and can not only be interpreted in a logical manner, but also through the use of metaphor. Theories as models are often interpreted metaphorically.

Metaphorical interpretation does not occur through a rigid correspondence between the structure of the model and the structure of the world, but instead through the reliance on a network of ideas. Accordingly, this method of interpretation is still a rational process, even though one cannot express it in formal logic.

Mental grammar characterizes a model of thought that possesses two facets. The competence model or the grammatical model expresses how elementary unit of signification combines to form a more complex unit. The grammatical model expresses knowledge about the different possible combinations that permit one to move from the simple toward the more complex. These rules of the mind fulfil an important function, that is to predict future performance. They also allow us to predict which sequence will be grammatical and which one will not. The performance model involves the production of a message through a particular combination of signs according to a specific code. To construct the mental model of competence, one has recourse to decomposition at the level of performance. Conversely, to obtain a model of performance, one should know the rules of competence and apply them in a creative manner to communicate a structured idea. By the selection of one particular configuration from the competence model, to express what suits the problem domain according to the modeller views, we obtain a model of performance. The decomposition of the actual performances serves in the construction of the competence model and the application of the model of competence serves to create a particular performance. The creative aspect specific to composing, converges with the interpretative aspect which characterizes the critical aspect. Accordingly, any model which is intended to reason about the world must achieve a task by following certain rules. Usually the model is designed to accomplish only one task in a predictive manner, and knowledge is represented from a particular point of view determined by the problem to be solved.

The competence model does not only represent the linguistic knowledge. The study of the rules that govern facial communication and body gestures is referred to as kinesics (2). Analysis of the communicative function of space in the social relation or proxemics reveals that space between people follows a cultural pattern (3). Similarly, in the search for a visual grammar, Goodman proposes a language theory of pictures (4). The study of myths reveals that they are a valuable source to define a given cultural model (5). Eco discusses chromatic competence; he demonstrates that there is a relation between colors and mental categories, since each language categorizes colors and segments reality according to experience. Chromatic perception is determined by society, and there is cultural meaning to colors. Moreover, the discrimination of colors makes the eyes able to isolate more colours than words can name (6). There is a strong hypothesis that the competence model or the rules to create meaning for a different system of signs can be unified under rhetoric. In this perspective, rhetoric is seen as an instrument of discovery, sound judgement and inquiry (7).

The fluency in the generation of a message depends upon the knowledge of the competence model and what one wants to accomplish or communicate to let the receiver focus its attention on the central idea. The organization of the message depends upon the cognizance of the stimulus and what is to be expected from it. The response is not random, but is planned as a consequence of selecting signs in accordance with their potential to render certain answer. To illustrate, a teacher can zoom a picture drawing upon the photographic code to focus on a certain point in the explanation of a concept. Similarly, the discrimination between modes of sign production is crucial since digital signs are more adapted to the expression of abstract knowledge, and the iconic code accommodates the explanation of abstract ideas. The print model of legal reasoning can be seen as an encoding of several codes in the digital code through the elimination of what can not be reproduced digitally and through the perversion of the other mode of codification qualities.

2. The print model of legal reasoning

The study of legal decision reveals that even legal reasoning has been transformed and reduced by the print medium. The fundamental ability of humans to communicate by image is immune and the oral tradition is still omnipresent in law. What distinguishes the written form of communication is the integration of the visual with the abstract model of thinking. Metaphorical thinking, symbolic interpretation and narrative are the reminders of human communication by visual images. These devices play an important role in legal discourse, and without them, legal discourse would stumble over its own abstraction. Similarly, several aspects that characterize the speech are adapted to the written mode. With respect to the organization of knowledge, the legal treatise displays a linear model that disregards the cognitive capability of the learner.

2.1. Image

Legal discourse relies on images to convey ideas. Usually, these figures are not present to embellish discourse, but to fulfill a necessary function. They are the substance of law, and ideas can not be delivered without them. With an image that is worth a thousand words, one can avoid empty abstraction that is difficult to grasp. Humans cannot progress without verbal figures because language is a process that is in constant formation.

2.1.1. Symbol

To become a symbol, the sign has to be related to a significant event so that people recognize it as symbol and a synthesizer of human experience. Making a distinction between symbol and sign, it has been noted: This distinction between signs and symbols is most interesting and in my judgment most valuable. According to it the sign indicates, the symbol represents: the sign transmits directly, the symbol indirectly or obliquely: the sign announces, the symbol reminds or refers: the sign operates in immediate context of space and time, the symbol extends the frame of reference indefinitely (8).

The term of "symbol" is loosely defined to include different meanings. Human languages as symbolic systems are founded on the conventional arbitrary relation. This means that the association between words and what they represent are motivated only by social convention. The relation between mathematical symbols and their objects of reference is a one-to-one relation, while in human language, the correspondence is one-to-many relations. Interpretation by association of ideas opens up a world where humans have the possibility of access to different realms of reality such as religion, art, philosophy, and science. This interlink between the physical world and the metaphysical is what distinguishes humans from animals. A Symbolic point of view of legal language implies that the meaning of a concept is attained through a unified network of signs rather than through its referential value.

Symbolism by the association of ideas makes the inexplicable become explicable. One aspect of symbolic interpretation is that meaning is not fixed in advance. Statute interpretation could not be reduced to find or discover the one hidden meaning, because there is not a sole meaning in the text, but many. Interpretation creates a relation between interpreter and author, and between interpreters. It is not necessary that the interpreter of the text and the author agree on the interpretation. The separation in time and space between the writer and the reader makes it quite difficult to achieve a coincidence between two mental representations. The text is multidimensional, each places stress on some aspect and persuades the other of what the interpretation of the text should be. Multiple interpretations could lead to a conflict between interpreters.

The relation between a term and the reference can be mediated by analogical correspondence. There is always something that stands for something else. A bundle of knowledge that can take the form of an image is attached to every sign, helping one to map the abstract to the concrete. It is common, for example, to see the concept of justice, which is abstract, linked to the balance schema. In Rodriguez, the symbol of the balance helped to weigh two divergent interests to determine which was more acceptable to society. By using a physical object, the judge discussed things that are very difficult to perceive concretely. He advanced:

Fundamental justice requires that a fair balance be struck between the interests of the state and those of the individual. The respect for human dignity, while one of the underlying principles upon which our society is based, is not a principle of fundamental justice within the meaning of s. 7 (Rodriguez v. British Columbia 1993 3 S.C.R. 521).

Symbolic representation opens up to humans levels of reality which could not otherwise be grasped. It manifests itself through ritual, the architecture of the court, legal iconography and verbal language. It expresses the continuity between the religious and the legal, between the concrete and the abstract, and between past and present. Symbols have pedagogical functions as they transmit moral values. The net as a symbol in the criminal court is used to demonstrate that justice must be flawless. Illustrating how to construct an argument, the judge exports the following image:

An analogy I often used in charging juries, especially in cases where the Crown's case was circumstantial, was that of a fisherman's net. The evidence presented at trial by the Crown seeks to establish factual propositions. Once established, facts may be used to infer other facts. In this way, established factual propositions intertwine to construct a net of such propositions. If a factual proposition is established as a mere probability or likelihood, and not beyond a reasonable doubt, it cannot be used to infer any further facts. The interweaving of facts breaks down and there is a hole in the net. A net with a hole, however small, is no useful net at all, since there remains a critical factual proposition which is not consistent only with the accused's guilt (R. v. Mackenzie 1993 1 S.C.R. 218).

Symbol also has the function of legitimating power and exalting the virtue of judges. In the Ruffo affair, the issue was that in becoming an exclusive symbol of the struggle on behalf of children and their rights, the judge usurped her own judicial function. In making herself the champion of children, Judge Ruffo has become "a case", "an affair: the Ruffo affair", "a public figure", a "star", a "heroine", a "Joan of Arc". Regardless of the merit of the cause she has embraced, this reason puts at issue the objectivity, impartiality and independence that a judge must be seen to demonstrate in all circumstances. She jeopardizes the image of the judge by altering the model of what a judge should be. The system is structured in such a way that if a reasonable apprehension of bias is observed, the requirement of impartiality is not met. The appearance of impartiality is important for public confidence in the system:

Both independence and impartiality are fundamental not only to the capacity to do justice in a particular case but also to individual and public confidence in the administration of justice. Without that confidence the system cannot command the respect and acceptance that are essential to its effective operation. It is, therefore, important that a tribunal should be perceived as independent, as well as impartial (Ruffo v. Conseil de la magistrature 1995 4 S.C.R. 298).

This symbol is one of the most deeply revered in the legal community. Viewed in this way the interpreter is

the true author of the law (9), because the determination of meaning by language is a legal fiction devised to create a sense of security. Accordingly, there is no reason to believe that legal experts express their ideas and feelings outside the realm of symbolism.

2.1.2. Fiction

Fictional thinking is the original form of human thought. It is inscribed in our genes, it is the language of thought, the language of spirit. In narrative, legal concepts are communicated and realized through event or action. This also implies that experience is prior to the abstract principles. It ensures that language functions referentially by mapping an abstract concept to the external world. Fiction implies comparison, Barsch advances:

In comparing [a substantive idea and a concrete idea], we see whether there is a conformity, or, in other words, coexistence between them: whether the concrete idea exists in the substantive idea, is in part of it, is an element of it; and consequently, whether it has to be affirmed or negated (10).

The doctrine of ex turpi causa is an abstract principle that works to prevent abuse and misuse of the judicial process. This concept is well established in contract law and insurance law, where it provokes little controversy. In tort, the proper role of the ex turpi causa is not articulated. To explain, a judge has used the following stories:

Few would quarrel with the proposition that a man who murders his wealthy aunt should not be allowed to receive the proceeds of her life insurance as beneficiary, or that two robbers who disagree over the division of the spoils would not be allowed to settle their dispute in a court of law. It was to deal with flagrant abuses like these that English courts developed the principle expressed in the maxim: ex turpi causa non oritur actio --no right of action arises from a base cause (Hall v. Hebert, [1993] 2 S.C.R. 170).

Legal narrative does not duplicate the events it describes; instead, it teaches us how to think about the event. It is a recounting, by which the teller, often dehumanized, makes present that is distant spatiotemporally. The story told by the magistrate focuses the attention of the listener on a sequence of events that make someone liable. The role of narrative in law is ancient (11). It asserts the authority of the judge and the law in relation to the learner on whom power is exerted.

2.1.3. Model and metaphors

When one attempts to perceive a thing as another thing, looking for similarity in dissimilarity, one is building a model. And when one speaks about contract using biblical language, one is using a model to create metaphors. With model and metaphor, we are seeking a correspondence between two heterogeneous things. The difference is that the primary function of the model is to transfer knowledge while metaphor transfers knowledge for the purpose of creating a new expression. Beyond using models to argue a case, the legal expert uses metaphors.

a. Model

The legal expert cannot limit himself to the perception of isolated facts, but instead must find affinities between fields expressing more cohesion in law. Through association, affinity and juxtaposition of two divergent ideas in an integrative approach, the legal specialist discovers a precedent and thereby creates a

metaphorical link that serves in the argumentation stage, and also later on in the resolution of the case. These metaphors demonstrate that the discovery of precedent may not be reduced to linking cases according to the lexical analogies, but rather, that the generation of a distant analogy or a metaphor depends upon an abstract network of knowledge. Metaphors created by analogy serve as a model for case citation (12).

b. Metaphors

Catachresis is considered to be forced metaphor; this is the reason why its metaphoric origin may be quickly disregarded. As an expression, it is aimed to adapt language to the needs of the world. According to the authors of Antiquity, catachresis is created by analogy. It allows one to extend language and allow it to coincide with reality, which is in continual evolution. When one is confronted with a new reality and the absence of a term, a new term could be invented, or else a known category could be extended to adapt to the new reality. The expression "good faith" is an example of catachresis which is the result of analogical reasoning. As with all metaphoric expression, it is created by relying on similitude and differences. The expression of "good faith" presents a similitude with "good intention", to the point here they can be considered to be synonyms and thus substitutable. It is obvious, however, that strict synonymy leading to an identity does not exist. Therefore, there is a difference between "good intention" and "good faith". In its original meaning, the notion of "bonae fidei" designates a general mode of conduct that refers to a certain state of mind, but does not focus only on intentional action. It is plausible that in the case of imprudence or negligence, one could denote an intention to injure that is constituent of bad faith (13). The notion of "good faith" is a metaphor that takes a different meaning in each branch of law. O'Connor has taken an inventory of the meaning of good faith in administrative law, in criminal law, in responsibility incorporated law (14).

The expression "right to life" is a further example of catachresis that takes its meaning in relation to a hierarchy of rights. Each liberty is measured against social rights, freedom of expression, defamation, right to information and right to private life. The term right to life, which means power over life, is not an absolute power. It is a natural right that people have by virtue of being a member of society, in a special relation one to another. Adapted to features of human nature, personal liberty and rights arise from one's entrance into a relationship with another. Without the interpersonal relationships one does not need the right to life.

Locke considers catachresis as an "abuse" of language because through catachresis becomes possible to invent the most fantastic entities, assembling and disassembling reality in the most capricious ways, pairing man with woman or human being with beast in the most unnatural shapes. Approving Locke, Kittay says:

Catachresis is, literally, a misuse of language. It is sometimes taken to refer to those cases of metaphor which arise out of a need to name some unnamed entity - standard examples include "the leg of a chair" or the "foot of a mountain" - or it is sometimes said to be an abuse of language... "Gaps" in lexical fields are often filled by such metonyms which become catachrestic once they are established in the language (15).

With this view communication by image is scorned by the rational mind. The discursive image as a reminder of the true image is called original language and denotes a primitive mentality. It is also the sign of decadence and imminent death, for it serves only as ornamentation. It is this transition from the figurative to the abstract that denotes man's maturation. One of the consequences of rationality is fragmentation of knowledge and the adoption of a reductionist view of the world. The rational is the comprehensible, the

seen and the irrational is incomprehensible, the unseen. In the above account the verbal image can be seen as a prisoner of the alphabetic code and a liberator for humanity.

2.2 Speech

The relation between speech and writing is a complex subject. Writing encodes speech, by presenting in a linear script some of the articulations that may already have appeared orally. Writing encourages sequential thinking. It suppresses sounds since the print as the medium for writing cannot transport sounds. Yet some aspects of the written code remind us that the written word follows the verbal code which it tries to mimic.

2.2.1. Dialectic

The presence of argumentation reveals the importance of the oral tradition in law. Dialectical thinking promotes unity in transgression, contradiction and disparity. It reverses polarity by viewing the world in gradation instead of in opposition. This mode of argumentation runs against the positivist concept of logical contradiction, which characterizes the method of abstract thinking. In the legal field, argumentation occurs through the dialectical process. Each concept gives rise to its opposite, and in the resolution of the conflict a higher vision or a synthesis arises. The thesis and antithesis converge in a synthesis, which can become a thesis and generate an opposite which may lead to another synthesis. Justice Cardozo, a former justice of the Supreme Court of the United States, stated that the rights lie in the duality of concepts. He wrote:

Here is the great antinomy confronting us at every turn. Rest and motion, unrelieved and unchecked, are equally destructive. The law, like human kind, if life is to continue, must find some path of compromise. Two distinct tendencies pulling in different directions, must be harnessed together and made to work in unison (16).

However, when formal contradiction is used in law, there is a feeling that one is missing the point. Formal logical laws are empty, they are constructed from contradictory negations. In this example, the judge uses formal contradiction in arguing his case:

With the greatest respect, where the trial judge erred was in concluding that because the lot was not used for agricultural purposes it was used for a purpose other than agriculture. Section 101 does not recognize acquired rights when a lot is not used for agricultural purposes, but rather when it is used for a purpose other than agriculture. Unused land is not used for agricultural purposes; however, precisely because it is unused, it is also not used for a purpose other than agriculture, as required by s.101. (Veilleux v. Quebec, 1989, 1 R.C.S; p.852).

This reasoning is not linked to any existing state of affairs; it is a mere abstraction void of truth and content. The flexibility of legal ideas cannot progress without taking into consideration the relatedness in contradiction of one concept to the other. An analysis in terms of dialectical contradiction protects against any tendencies to deviate the law of its principle mission, which is to resolve conflicts.

2.2.2 Deixis

In written discourse, because the speaker and the objects referred to are not present in the situation of utterance, deixis emerges as a way of anchoring language to the spatio-temporal dimension and to the

immediate situation of speaking in relation to the person. Deictic can be non-linguistic (pointing, nodding) or linguistic (demonstratives and other kinds of reference). The role of linguistic deictic is intensified in written language. It compensates for the loss of the spatio-temporal in which human communication takes place. To fill some function of the spoken language, the text is marked with an anchor to circumstantial reality. But there is much that remains to be said about the differences and the similarities between the oral and the written code. The notion of coherence takes on a special meaning in relation to the written code. This difference from the spoken code is of importance because the written message operates at a higher level of rules and grammar.

2.3. Textual relations

In the written language, the rules of coherence or textual grammar present complementary views about relations that convey textual meaning. According to the proponents of the cohesion theory, the notion of coherence is equated with the determination of interphrasic relations (17). The supporters of the narrative view study the text at a deeper level, considering it to be an arena for the confrontation of conflictual views (18). The defender of the argumentative view regards the text as a manifestation of the will of an author to persuade the readers by using discursive techniques (19). This view is used to gain an understanding of the persuasive technique used in the legal argument (20). At another level, unified discourse is held together by a ruling theme, by cross-reference and by certain implications or presuppositions. These theories reflect the fact that the generation of a message is mostly topic-oriented instead of being goal-oriented.

This organization of knowledge that suits the model of the print weakens modular communication and stimulates the rational mind by promoting a uniform model of thinking. Similarly, the replacement of visual art by verbal art, in addition to the predominance of speech, has left the legal community in a state of tension dividing the subjectivist from the objectivist. For the objectivists, there is a direct mapping between reality and the law, and meaning is determined and fixed in advance. What cannot be mapped to reality is pure fantasy and not worth of studying. For the subjectivists, the interpretation lies in the imaginative mapping without any resort to reality. For them, meaning is not fixed, since they adopt a much wider view of reality which encompasses and links the seen to the unseen.

3. Multimedia modelling

The revolution of the print imposed its model of thought and reversed the ancient one in adapting human cognition to the new mode of communication. As a medium, it reflects a reductionist model of thought. In fact, the transcoding of a verbal image into the verbal code involves a transformation from the analogical to the symbolic code which corrupts the original message that is referential by nature. Also, the give-take of dynamic conversation is sacrificed since the speaker is totally separate from the listener. Conversely, multimedia promises to display a whole range of reasoning in the most natural ways. Today, multimedia invites us to question the model of print as a model of human thought and to examine alternative models to codify human knowledge. To create a successful legal multimedia, the developer must combine various types of signs in inclusive ways. Through multimedia, we are no longer constrained by the sensory limitations of the print medium; we can convey our ideas and information through combinations of communication systems. This revolution was developed on the basis of the natural faculty of humans to communicate orally; and also on the capacity to focus on image and text. If the written code converted the heterogeneous code of communication through the amalgam, the multimedia would preserve and determine a novel mode of expression based on an innovative blend of symbols. As a result, the integration of the many

spheres renders the communication process more complex, more dense and more efficient. This enrichment at the level of information transfer requires an amalgam of several heterogeneous codes. Consequently, the shift from a fragmented to a holistic dimension of communication demands an expertise that is based on several fronts.

In an iconoclastic society, analogical representation was chained up in the alphabet, and thus, few question the absence of a link between image and text. Although verbal images constitute virtually the only way to communicate through the written law, the true images remain important not only as decor but mostly to transfer meaning. In fact, verbal art and visual art entertain several kinds of relations. There are three types of relations between image and text. In the case of the pre-eminence of the image over text, the source of inspiration of the writer is the image. Verbal imagery transforms the image into a legal concept or tells a story about a visual concept. The reverse is true when the text precedes the image; the artist translates the verbal art to the visual art. But often, when the text is simultaneous with the image, the relation is not of dependency but of integration and complementarity. The visual code can be combined with the verbal code, thereby preserving the integrity of both. The fusion of the verbal code with the visual code permits the creation of a visual image with the alphabet. According to Barthes, the complementarity between text and image stems from the incapacity of an image to express temporal and causal relation. It emerges from the nature of the image polysemic to the infinite or monosemic to the extreme. Text complements the image by stopping and directing the interpretation (21). Few would bother to argue the auxiliary functions of the image with the text. Considering further the abstract and normative nature of the law beyond its narrative side, no one would dare to consider whether law could lend itself to illustration. Another aspect that has been dissimulated by print is gestural language. With the hands, one can affirm, negate, and interrogate, and moreover, this code is unambiguous (22).

Law can be more readily adapted to multimedia modelling because it is a form of story telling, and the need to explain abstract ideas is central to its mission. Producing a legal multimedia integrates the reasoning process of writing for the print medium and goes beyond it in bringing out elements that must be eliminated by the written code, as they are not easily captured or described in print. The multimedia legal encyclopedia builds on empirical knowledge and signals the growing importance of this form of publication in legal education. A case encyclopedia can connect each case to the transcripts, the pictures from the trial, audio clips of the legal arguments, pieces of evidence, cross-examination, video images from the court proceedings, all following the fluidity of a case hearing. This symbiotic form of communication can also suit the production of a multimedia that links correspondence, legal manuscripts, oral proclamation and legislative discussion which precede the enactment of a statute. Also, the advent of digital law made the convergence between the task domain and organization of knowledge embrace many aspects with different goals. The embodiment of knowledge in a particular fashion induces learning and problem solving. Similarly, the way the task is accomplished influences the way knowledge is presented. If we wish to make this legal knowledge available to a computer we must find a way of representing it in an appropriate form, and have a good perception of what task to accomplish. For data to be useful, they must be organized according to a task model. The data model, geared mainly to capturing the information requirements of an application, should exhibit a certain natural quality. A second requirement is that the model be detailed enough to provide an adequate representation, but not so complex or large that it becomes impossible to operate upon it. There is often a compromise to be made between the accuracy of a model and its utility. The embodiment of the task model is crucial to the creation of an electronic intelligent book for a virtual classroom conducive to learning and discovery.

Through an associative organization of knowledge, the reader is given the possibility to determine its own path of navigation through the textual network. Rather than being passive, the reader generates a new text,

and participate in the act of writing, thereby realizing a very basic form of interactivity. But in a truly interactive system, the virtual world does not only have a ready-made elements, it creates its data "in real time" according to the user's directions. A data base may be queried at the demand of the reader to get information to complete his knowledge and create a new document that will fulfil its needs. In the case of the training video, the author may choose to include an interactive quiz after the video, to determine the level of comprehension by the user. At a higher level of interactivity, the author must construct not only one story, but a complete set of stories to explain a concept engaging the reader in fictional communication. Also, author's prediction of the most probable action according to the user's aims helps to respond adequately to the target audience.

Conclusion

Transcoding without considering the specific role of each symbolic system in the acquisition of knowledge would be a labor spent in vain. Without any adaptation of the text model to the new medium, it is expected that a distortion and depersonalization would affect the comprehension of information conveyed by a multimedia. A serious departure from the way we think about legal publications is needed to produce a publication that mirrors the structure of the legal mind. When a new medium supplants an old medium, it announces the end of one mentality and the adoption of a new one. The medium is a part of the message because it imposes its own qualities on reality. Multimedia emphasizes the role of images in communication and puts a greater value on dialogue and conversation. As a medium, it also commands a goal-oriented organization of knowledge.

The legal modeller interacts with the the legal specialist to organize knowledge in a model suited to a legal task. He also interacts with the software engineer to map the software model with knowledge organization that is suited to the legal task. The software as a very abstract structure of knowledge can predict the full range of possible applications. Confronted with the possibilities that are offered by the software module, one must decide which is the best alternative and be aware of the trade-offs in making a final choice. Finally, the legal modeller will connect with the potential user to map the knowledge organization with different models. The kind of mental models which the legal expert has developed is an intuitive understanding to make qualitative judgements. Usually, expert models do not coincide with novice models of problem resolution. Each solves problems according to its own particular model of thought. Users' needs vary according to different settings, making it important that the design of a functional information system meets these needs.

Both the task model and the grammatical model, designed to organize data, are superposed on the software model which itself is superposed on the hardware model. Hardware relates to software and software connects to infoware which itself relates to userware. The role of the software is to represent the abstract properties of the world data. To serve as a communication medium, however, software should represent information in ways similar to those in which people perceive information. The choice of the software and the organizational scheme greatly affects the usefulness of the schema design for the users.

Considering law to be inclusive of the different spheres of being, its openness opposes meaning fixation and the attachment of the law to strict physical reality. Also, the sense of duty that animates the legal mind is what guarantees law's evasion of pure fantasy. Law continually seeks and strives to move from the abstract to the concrete by mediation. Proof is seen as a balance between the material, the logical, the conscious, the immediate, the seen, the concrete, the explicable, and the provable, or what we call reason; and the unseen, the metaphysical, the unconscious, the inexplicable, the immaterial dimension of human being, or what we

call emotion. We recall Cicero, who believed that persuasion relies upon the proof of allegations and the arousing of feelings in the audience to whatever impulse the case may require.

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