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Copyright

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Contents

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Notifications Concerning Treaties

WIPO Convention

Accession

SINGAPORE

The Government of the Republic of Singapore deposited, on September 10, 1990, its instrument of accession to the Convention Establishing the World Intellectual Property Organization, signed at Stockholm on July 14, 1967.

The Republic of Singapore will belong to Class C for the purpose of establishing its contribution towards the budget of the WIPO Conference.

The said Convention, as amended on October 2, 1979, will enter into force, with respect to the Republic of Singapore, on December 10, 1990.

WIPO Notification No. 149, of September 14, 1990.

Studies

Character Merchandising and French Law

Xavier DESJEUX*

The word "merchandising" has made a timid appearance in France; it refers to a whole set of studies and techniques in the field of marketing. A French merchandising institute has even been set up. Our topic here is a different field of activity; it is the use of human or fictitious characters, of well-known marks or even of international events, exploited commercially for promotional purposes. It is therefore primarily an act and not a new right; indeed, study of substantive law shows that, in France, the legal problems raised by the introduction of character merchandising have been settled by applying existing laws: copyright, personality rights or trademark law. Lawyers have been faced with rather new problems and, in any event, rather special problems when it has been necessary to settle conflicts between differing rules of law. I shall take the types of law applied as a basis for looking into the manner in which character merchandising has made itself felt in France.

I. Copyright

There is no doubt that the creator of a figure born of his imagination enjoys copyright. Such a figure may be a literary work or an "artistic" (graphical) work. A study of case law shows up the most frequent problems of law.

A. Figures from Novels: the Right of Adaptation and Moral Rights

The courts have been called upon to judge the distortion of figures. In one case they refused a penalty and in the other case they accepted it.

1. The writer Leslie Charteris created the figure of the Saint and assigned the cinema adaptation rights in one of his novels. At the time the film came out, the creator of the Saint took action against the film company since he considered that it had altered the nature of the figure and had thus violated his moral rights as an author, on the grounds that:

> The Saint has never possessed a castle in Scotland; he would never have taken the liberty of wearing a kilt, he has never worn a bowler nor carried an umbrella and the names of the major figures in the novel have not been used in the way they are normally used; the adaptation disregarded the spirit in which Leslie Charteris conceived the adventures of the characters he had created...Instead of the romanesque adventures of a d'Artagnan in modern dress, the adaptation has produced a clown and an unattractive boor, etc...

After having described the essential features of the Saint's personality, the court pointed out that the adapter enjoyed a certain degree of freedom, but that he had the duty "to interpret, without betraying it, the spirit, the character and the composition of the original work to discover a new expression of its substance..." Consequently, it rejected the novelist's petition.[1]

2. The two authors of the *Fantomas* novels assigned their cinematographic adaptation rights and were careful to specify in the contract that "the typical features of the main heroes of the *Fantomas* novels may not be changed without informing the author thereof and without him having given his consent." The authors wrote to the company:

> I took care to specify that any adaptation had to respect the features of the characters from which derive the situations in which they are to be found in the 45 volumes so far published...However, I cannot permit the introduction of novelties, of invented situations, that are altogether opposed to the very specific characters of my personages and the themes that underscore the whole work...

In the artistic counterfeiting proceedings, the court did not agree that the contract had been infringed, but pointed to the existence of moral rights, "without respect for which the work, claimed to be adapted for the screen, can but be distorted, and the personality of the author disfigured..."[2]

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[1] First Instance Court, Paris, March 8, 1968, DS 68.742.

[2] First Instance Court, Paris, January 7, 1969, *Revue internationale du droit d'auteur* (RIDA), 1969, 166.

The two examples I have just given illustrate the delicate task of the judge who must draw a line between freedom of expression of the person owning the economic right of adaptation, that has been lawfully assigned, and respect for the work that is an unassignable component of the author's moral rights.

B. Cartoon Figures: Their Nature, Their Imitation and Their Individualization

Court action has frequently concerned fictitious figures with human features, generally animals, but sometimes humans, whose expression has been copied. The copying would appear to center on the borrowing of personality.

The courts have on occasion based themselves on the risk of confusion, a notion that is unknown in the field of counterfeiting but is the "touchstone" of imitation; a notion practically inexistent in the conventional doctrine of copyright (apart from pastiche, parody and caricature).

In respect of the conception of a figure based on a duck (of which it deforms the features) and of a man (from which it takes the stature), known as Donald Duck, the court stated:

> The counterfeiter is ill-inspired to claim that the "expression" that he qualifies as "psychological" of the imaginary figure he created based on the original work is different from that produced by the figure whereas, on the other hand, the original drawing represents a moving humoristic figure that is thus capable of differing its expressions and moreover the original model and the alleged infringing model are so similar to each other that if a purchaser had both of them before him, and even if he were attentive, he would normally confuse them.[3]

This decision is of interest in that it acknowledges copying beyond a purely material form of the work and condemns "imitation" beyond partial copying and in a light other than that of the traditional opposition between the material form and the concept.

In a more straightforward case, the court condemned the copying of Casimir, a dinosaur with human features that had been created for a television program, although it used unfortunate terms in view of the mixing of opposed classical concepts: the firm found guilty of counterfeiting "sold a hollow plastic toy with orange-colored flocking that represented an animal of the prehistoric 'type' that constituted by its 'form' an almost slavish copy of the figure of Casimir."[4]

It was in respect of the drawing of a "young boy" that the judges acknowledged the status of work of mind to the image of "the young boy type" reproduced by a third party without authorization. They took into consideration not only the form of the drawing but also the psychological expression that differentiated the figure from other "young boys."

> Michel Thomas is the creator of drawings and paintings that represent the same "young boy" and the same "young girl"...always displaying the same physical type, characterized principally by a head that is disproportionate to the remainder of the body and, above all, always presenting the same face with enormous round eyes that take up considerable space, with deep black pupils and a broad blue iris, a small fleshy mouth that is "cherry-shaped," with pronounced corners...all of which lends to the face a general appearance that is candid and malicious, happy and likeable...

The court noted that this "young boy" was individualized:

> ...whereas the young boy or young girl created by Michel Thomas in no way resembles, in particular, the Montmartre urchin popularized by Poulbot which is always accompanied by a legend, is simply drawn, only colored and sometimes having a proportioned head and body and a face that is hardly sketched and that plays a far less important part in the scene that is represented than the very detailed face of Michel Thomas' "young boy."[5]

To refuse protection to the author of cartoon figures representing little green men, who had complained that an advertising agency had devised a campaign for pasta using a drawing of little green men, the court based itself on the two criteria of the lack of originality of the little green men "to represent beings that were unknown and were different from human beings" and the absence of possible confusion between the two images compared due to the difference of the "respective situations in which the various figures were placed." It is clear that a creator's figures cannot monopolize a whole area, but it would have been interesting to have greater knowledge of the actual circumstances to determine whether the little green men from outer space would indeed have come to the aid of the pasta if the cartoon had not already had such a success. The simple copyright approach has difficulties in altogether assimilating today's phenomenon of character merchandising.

II. Personality Rights

Personality features are legally protected when they are used by others, particularly for commercial or promotional purposes, without the consent or beyond the consent of the person concerned (usually someone known to the public and to the media). Sometimes it is the *voice* of a person that is used. Thus, the actor, Claude Piéplu, obtained a court judgment against the imitation of his voice in a television spot for a brand of socks that was accompanied by an offstage voice.[6] A *name* may

[3] Paris, October 15, 1964, RIDA 1965, 208.

[4] First Instance Court, Paris, February 8, 1978, RIDA 1978, 92.

[5] Paris, April 24, 1979, RIDA 1979, 138.

[6] First Instance Court, Paris, December 3, 1975, D.77.211; JCP 78 II 19002.

also be used for commercial exploitation held to be abusive. For instance,the Rothschild family obtained prohibition on the use of its family name—which was also that of the defendant—for the sale of cigarettes and perfume. The judges held that there was confusion with the well-known name.[7]

Nevertheless, the great majority of cases concern the right of *likeness*. Substantive law affords personality rights a non-economic component and an economic component and thus lays down the sphere of protection of the right of likeness in a praetorian manner.

A. Non-Economic Rights

In practice, this only concerns use of a likeness that is harmful to the reputation of the person depicted. It is interesting to note that it is the moral prejudice that has been taken over by the courts from the point of view of damage to reputation. For instance, the actress Catherine Deneuve obtained damages following the distribution of an advertising poster carrying her likeness for the promotion of a new newspaper. The court emphasized that the presentation of the poster "necessarily suggested to the public that the actress wished to use her repute, and doubtlessly be paid for it, to support the advertising campaign for the newspaper."[8] The same misadventure also happened to the actor Belmondo.[9]

The situation is more clear-cut in the case of politicians. For instance, a leader of the extreme right wing, Jean-Marie Le Pen, was renamed Frankenpen and presented as a caricature with an apparently Prussian helmet in a television program that made fun of politicians.

The court held that

> ...the combination of the traditional image of an enemy of the French nation and the image of an elected representative of that same nation...is quite clearly not a caricature...but indeed deliberate contempt.[10]

Likewise, President Giscard d'Estaing obtained the withdrawal from trade of a pack of playing cards in which each card bore a caricature of the President wearing different costumes.[11] In the same way, President Pompidou—as a private person—had already prohibited the use of his likeness for commercial purposes related to the sale of outboard motors.[12]

The Court of Lyons, on the other hand, held that there had been no moral prejudice, and therefore no infringement of non-economic rights, in the case of a soccer player whose photograph taken in a public place during a match had been used by an agency for advertising purposes.[13]

B. Economic Rights

Normally, no one may publish or exploit a feature of the personality of another person without the latter's consent nor may exploit that feature beyond the consent given by that person. The considerable case law existing in respect of the right of likeness illustrates this principle.

1. Thus, the courts verify the existence of the consent of a person who has been photographed. The Court of Paris appropriately pointed out that everyone has an exclusive right in his likeness and in the use made of it and may oppose its diffusion. In the case in point, it was not to be deduced from the fact that a tradeswoman generously accepted to appear on the travel souvenirs of private persons that she had consented to a photograph being used to produce postcards or to illustrate the summary of a magazine. The commercial exploitation of the photograph without the express and specific consent of the tradeswoman was therefore an offense and infringed the rights of that person in her likeness[14]; quite apart from any moral prejudice.

Sometimes the right of likeness is mixed up in a way with the right of privacy governed by Article 9(2) of the Civil Code. Such was the case where the publisher of a magazine published photographs of an actress (Isabelle Adjani) without her authorization for them to be used for commercial purposes, together with an article in which the author made the actress speak in the first person and in which were revealed her exact date of birth and particulars of her son.[15]

The courts are careful to point out that the photograph of a person who has accepted to pose for a photographer cannot be exploited without unequivocal consent. Such is the case of a person who is not a professional model or mannequin and who has not been paid for the photo sessions:

> Although the person concerned may have shown interest in the photo sessions, out of a taste for publicity, or wishing to be of service...that does not mean that anyone may be authorized to then use her likeness for any purpose under any conditions.[16]

It has been held that the right of likeness of a deceased person then expires and that after that

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[7] Paris, March 20, 1985, D.85 IR 324.

[8] First Instance Court, Paris, January 20, 1982, DS 85 IR 164.

[9] First Instance Court, Paris, October 17, 1984.

[10] Paris, November 22, 1984, DS 85 IR 164.

[11] First Instance Court, Nancy, October 15, 1976, JCP 77 II 18526.

[12] First Instance Court, Paris, April 4, 1970, JCP 70 II 16328.

[13] December 17, 1980, D.81.202.

[14] First Instance Court, Paris, November 18, 1987, DS 988 Somm. 200.

[15] Paris, October 22, 1987, DS 88 Somm. 198.

[16] Paris, March 10, 1987, DS 87 Somm. 384.

person's death the related economic right does not pass to

...the heirs who may not assign to another the right to reproduce the likeness. The heirs may simply protect the likeness by that author against use made thereof under conditions that are damaging to his memory.[17]

The Court of Paris thus imposed a significant limit on the economic exploitation of the right of likeness, which should raise discussion.

2. The right of likeness cannot be commercially exploited *beyond the consent* that has been given. This is a classic solution and there are many examples, particularly in respect of film stars who have obtained damages from tradesmen who went beyond the extent of authorization to use a photographic image, such as Jean-Claude Brialy in respect of a suit manufacturer[18] or Brigitte Bardot who had *tolerated* trade in African and Martinican "boubous" bearing her symbolized image, but had successfully prosecuted the sellers of deck chairs, bath towels and blinds bearing the likeness of the famous actress, displayed and on sale in several places throughout the French territory without her authorization. In that case, the presiding judge afforded to Brigitte Bardot a right to compensation for the prejudice.[19] Is this fact to be attributed to the firmness of the principles laid down by the courts and generally approved by legal writers? However that may be, court cases concerning the marketing of personality features of the stars of the arts, show business or politics would seem to have become less frequent, unless it is just that our old continent is less fascinated by its idols...

The world of trade sometimes attributes a power of special attraction to certain distinctive signs, such as certain trademarks, that are then exploited within the framework of character merchandising.

III. Trademark Law and the Notoriety of the Personage

It is frequently difficult today to launch a new product and is doubtlessly even more difficult to launch a new trademark. Fiction characters have become famous through the growth of so-called spy novels, the sudden explosion of cartoons and the emergence of the child audience before the small or the large screen within our Western society, characterized even quite recently by its appetite for consumption. In this era of marketing, the creators of such figures, the commercial undertakings and the advertising agencies have realized the commercial value and the attractive power in respect of customers: although copyright indisputably gives a degree of protection, trademark law considerably reinforces that protection; it may, in particular, make up for a lack of originality, it lays down the consistence of the graphical form of a complex trademark (graphics and denomination); protection remains beyond the 50 years *post mortem auctoris* and may be indefinitely renewed by successive deposits of the mark every 10 years.

A. The Problem of Filing a Mark for a Well-Known Fictitious Person

When an undertaking envisages the marketing of a product or of a range of new products it may choose a form of graphics or a name and the notoriety of that mark, if it becomes established with the public, will be the result of an industrial, commercial, promotional and advertising investment incurred on the launching and distribution, more or less extensive, of the product bearing that mark on the international scene.

The situation is a classical one. It is the example of Coca-Cola for the well-known beverage: the notoriety of the mark was originally associated with the notoriety of the product. A further hypothesis sometimes raises discussion in legal writings, or even in case law: a well-known figure such as E.T., Donald Duck or James Bond may be filed as a trademark prior to its conception or fabrication.

In this latter hypothesis, some authors have undertaken a more or less critical examination of the practice—by means of the most traditional of interpretive analysis—considering that a trademark filed in such a way did not concern a given product but was the product itself and that trademark law was therefore deviated from its real purpose; furthermore, the indefinitely repeated renewal of a trademark ran counter to copyright law and to the institution of public domain 50 years after the death of the author.

This type of approach to character merchandising has not enjoyed acceptance, it is not clear how the filing of a trademark of a well-known figure can create a particular legal situation on the grounds that it is the figure that is the product. Indeed, the applicant may first file a figure in all classes, just as any other trademark whether already exploited or not; some undertakings systematically file new distinctive signs which may be used within the five years following the filing for goods which may not even yet exist. Filing can only be made in certain classes; what may raise a problem is the concept of *notoriety*. A figure exploited without authorization

[17] Paris, June 7, 1983, DS 85 Somm. 165, re Claude François.

[18] Civil Court of Cassation, June 20, 1966, JCP 66 II 148980.

[19] First Instance Court, Nanterre, June 14, 1980, DS 85 Somm. 163.

by a third party is generally well known and therefore possesses attractive power in respect of the customers. However, does the assignee of the mark of that figurc also have transferred to him the notoriety in such a way that the mark enjoys the arrangements for well-known marks within the meaning of trademark lcgislation? In other words, can a well-known mark exist in respect of a product that has not been exploited or not much exploited?

The issue may be of theoretical interest, but in practice the stakes are not necessarily high. Indeed, although the notion of well-known trademark is contained in the legislation, it is accepted that the basis of protection is to be found in the general rules of law, in Article 1382 of the Civil Code, since thc contested act, that is to say the borrowing of notoriety, is these days analyzed as an act of "parasitism" an act which is not specific to the issue of trademarks. In view of the use by a third party of a figure (graphics or name) without the authorization of the owner of the mark, the true issue that is raised would seem to be whether it constitutes or not a parasitic activity that is prejudicial to the owner of the mark. At that point in the analysis we are faced with the now classical problem of the sphere of influence of the well-known mark. For some, it should apply "indivisibly" (P. Mathely); more generally, substantive law varies as between three concepts, the first is restrictive: a well-known mark only extends to "similar" products in the strict sense, that is to say those that are closely related. The second is much broader: it accepts that within international trade the vocation of an undertaking is to diversify its activities into sectors that may be different from its present activity. A third formula enables us to say that the trademark is well known once the customers may attribute it to the same origin. In any event, it would seem interesting to try to find out whether there is a risk of weakening the distinctive power of the initial trademark and, possibly, the context within which a second user has chosen for his trade graphics or a well-known name that are already exploited for commercial purposes.

B. The Courts and Business Practices

Certain cases are susceptible to a simple solution. Thus, the author of the figure of the Saint filed "the Saint" as a trademark. He was able to prohibit a cinematographic undertaking that held the right of adaptation for the cinema of his novels (cf. case cited above) from using the mark under any form whatsocver.[20]

[20] First Instance Court, Paris, 1968 D.68.742.

Other cases show us more complex factual or legal situations.

For example, the Court of Chambéry heard a case after the war concerning the figure of "Professor Nimbus" that had been filed as a trademark.[21] A printer had reproduced envelopes and posters bearing a drawing of Professor Nimbus "with his characteristic features, but which differed from the mark in that the lower part was absent, by the attitude of the figure and in the writing of the word 'Nimbus'." The Court rejected the counterfeit proceedings in respect of the mark although it accepted the proceedings in the field of copyright. The judges held, with excessive stringency it would seem, at that time that the attitude chosen for the figure made it a different mark. That point of view is open to criticism. It is true that a long court battle was needed to admit that "Serious Cow" was a counterfeit "by contrast" of the trademark "Laughing Cow" due to the association of ideas[22]; the same Court of Chambéry, 20 years later, was to decide that the name "Mini taille" was a counterfeit of the trademark "Taillefine" due to the association in the mind of the customers.[23] Was it necessary for copyright to fly to the assistance of the trademark composed of a drawing of the famous Professor Nimbus? Furthermore, there was also an act of parasitism that would have warranted a sanction on the basis of Article 1382 of the Civil Code.

A further example again reveals how a certain juridical logic has difficulty in seizing the realities of the business world and the true place of character merchandising: the ease goes back somewhat more than 20 years; this observation is not without significance since it is probable that the Court of Paris would now have looked more closely at the facts of the case as it currently does more and more systematically with the aim of repressing acts of parasitism; the facts were as follows: two foreign companies were owners of the trademark James Bond for France. They assigned the mark to two shoe dealers and to a cloth dealer. The competing shoe manufacturer had the idea, not of placing the James Bond 007 mark on his shoes, but of decorating the display windows with James Bond 007 material from the properly licensed manufacturer and to place his own mark with each shoe. The First Instance Court condemned this act, but its decision was overthrown by the Court of Paris on the grounds that "the cloth X..., bearing the contested inscription had not been used by the firm M... as a trademark and a purchaser of average acuity would not be deceived." The Supreme Court overthrew the decision in the field of unfair compe-

[21] December 10, 1951, Gaz. Pal., 1952 I.116.
[22] Court of Cassation, January 5, 1966, Ann. 67.83.
[23] January 3, 1972, RIDA 1972, 87.

tition, noting, in substance, that the plea by the plaintiffs referred to the risk of confusion whereas the Court of Appeal had stated that the plaintiffs "did not claim, moreover, any confusion whatsoever that could have been raised in the minds of the merchants or between shops, nor between the articles respectively displayed for sale."[24] The impression generated by the outcome of the dispute concerns the existence or absence of a risk of confusion. The eminent Professor Chavanne, who commented the decision, indeed notes:

> The fact on which the owners of the mark for the shoes may complain is that the putting together of the marked material and a shoe-shop window would be likely to lead to confusion. Only such a constellation could constitute an offense...

To remove the risk of confusion, he follows the analysis made by the Court of Appeal that noted the existence of a label belonging to the defendant on the shoes displayed in the James Bond material decoration, adding—also as the Court of Appeal:

> Nevertheless, the shoes M... will indirectly benefit from the reputation of Ian Fleming's well-known hero. But they will not benefit from the repute of the trademark of their competitor's shoes. It is indeed the same James Bond, but he is lawfully alluded to by M... for a purpose of decoration and not to designate the products.

That analysis of the situation is not convincing. If we are to look for the "aim" pursued by the defendant, should we not—beyond any decorative purpose—attempt to look for the reality of parasitism? Would the defendant have used the James Bond denomination in his shoe shop—even if only by means of material in the shop window—if his competitors had not themselves used that well-known denomination a first time in the field of shoe trade? Furthermore, the argument based on the existence of a label on a shoe is inoperative. It would be to ignore the unbelievable multitude of copying of models of all kinds regularly condemned by the courts despite the placing of a mark of some kind on the copy. Finally, beyond the risk of confusion, a well-known mark—whatever the origin of its repute—does not authorize a third party to abuse of the rights and to weaken the distinctive power of such a mark. It is sufficient for them to respect the elementary rules of prudence and to avoid placing themselves within the sphere of the distinctive sign whose scope remains to be assessed by the courts depending on the circumstances of the case.

(WIPO translation)

[24] Commercial Court of Cassation, October 27, 1970, JCP 71 II 16669.

Expert Systems and the Law—An Outline

Jaap H. SPOOR*

1. Introduction

Expert system development is a highly innovative, rapidly expanding and evolving field of research, which increasingly yields practical commercial results. Sales of products and services in the United States of America and Europe were estimated at almost $800 million in 1989 and it is expected that they will have more than doubled in the magic year 1992.[1] Expert systems have now found their way to many different applications, ranging from routing of international payments and credit assessing to real-time flight support for the Space Shuttle program.[2] The computer industry itself profits from expert systems which support help-desk functions in mainframe trouble-shooting.

As a result of this development, lawyers have to brace themselves for a number of questions, such as

—how to protect expert systems shells and knowledge;

—how to draft expert systems development contracts;

—what liability the use of expert systems may eventually entail; and perhaps even

—whether legal expert systems can be of any use to lawyers and others.

Artificial intelligence

Expert systems belong to the domain of artificial intelligence (AI). AI applications try to simulate intelligent human activities, such as reasoning (in the case of expert systems), but also pattern recognition (vision, hearing), artificial speech, controlled motion (to be used in robots) and learning. AI is a topic by itself, which cannot as such be discussed here.[3]

2. What Are Expert Systems?[4]

Definitions

Definitions of expert systems differ in scope and size.

According to Oskamp, an expert system has explicit knowledge (expertise) of a given (complex) field as well as a mechanism to solve complex problems in this field in a "seemingly intelligent" way. It uses AI techniques. It can also explain how the solution was obtained.

A very short definition is given by Reed: "An expert system can be defined as a computer system which emulates the behavior of a human expert within a limited...domain."[5]

Characteristics

Expert systems are not so much characterized by the fact that they use knowledge (after all that will be true for many if not all other information systems as well), but by the way in which this knowledge can be used. One of the most characteristic features of expert systems (and of AI generally) is that they can process vague or uncertain information. A system for medical diagnosis can ask for symptoms. Although some of its questions may remain unanswered, it can still come to a working hypothesis, e.g. "it is probably measles"; yet if further questioning should exclude this possibility after all, the system can go back and further explore the eventuality, which it earlier considered unlikely, that it might also be a case of mumps.

Another remarkable aspect concerns the fact that the rules can to some extent be stored at random; this rather facilitates the updating of the knowledge base, but may also affect its protection under copyright law. We will come back to this aspect later.

Knowledge

For the purpose of this article, the knowledge contained in expert systems can be defined as a body of facts and rules which are specific to a cer-

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Note: This is the revised text of a paper, presented at the Computer Law Association/International Federation of Computer Law Associations Congress, Munich, May 31 and June 1, 1990. I am obliged to my colleague Mr. Cornelis Stuurman for his useful comments with respect to the original manuscript.

Editor's Note: Full references relating to authors of works quoted in the course of this article can be found below under "Bibliography."

[1] "Knowledge-based Systems: Markets, Suppliers and Products," Ovum Report, London, 1990.

[2] *Computable* (Dutch edition), January 12, 1990.

[3] For an outline of some of the issues presented by AI, see the overview given by Nycum and Fong; cf. also the articles by Johnson-Laird and Robinson with respect to neural networks.

[4] Parts of this paragraph have been taken from my article "Expert Systems and Copyright," (in G. Vandenberghe (ed.), *Advanced Topics of Law and Information Technology*, Deventer/Boston (Kluwer Law and Taxation) 1989, pp. 93–104). Reference is made to that article for further details.

[5] Reed, p. 219 (see bibliography below).

tain application; of course they may be accompanied by information of a more general nature.

Notwithstanding the suggestion carried by the expression *expert* system, the facts and rules need not necessarily be very sophisticated or exclusive. The computer world has always been famous for its imaginative expressions. Expert systems (and artificial intelligence) are no exception; these words carry a promise which the computer industry cannot yet fulfill. Koch and Schnupp[6] have pointed out that it would perhaps be more realistic to speak simply of *rule-based* or *knowledge-based* instead of *expert* systems.

As d'Agapeyeff puts it, veterans in a job probably take the overwhelming majority of their decisions from rules of thumb derived from the experience of doing that job. Many, if not most expert systems implement such rules of thumb.

Composing elements

Expert systems usually consist of the following elements:

(a) A *knowledge base*, containing the facts and rules which the system is to work with.

(b) An *inference engine*, the "tool" which will apply the knowledge to a given problem.

Together, these two form the core of the system. They may however be accompanied by one or two other elements:

(c) A *knowledge editor*, that assists the loading of the knowledge base with the expert information. Storing knowledge is not an easy job, even with the aid of a knowledge editor. As a rule, the assistance of a specialized engineer, a so-called *knowledge engineer*, is required. His task is not only to fill the knowledge base with information, but also and in the first place to squeeze the information out of the expert, a far from easy task as the true expert is said not to *think*; he just *knows*.

In this respect, an interesting approach is described by Finkelstein and Fischer, whose experiments lead to the conclusion that interviewing experts has much in common with ethnographic and anthropological research. Accordingly, they suggest that

> ...the ethnographic method, with its judicious mixture of directed interview, survey, participant observation and analysis, has been developed over many years and seems to offer some well-validated techniques for knowledge acquisition which the expert system builder could hijack.[7]

(d) Finally, once the system is completed, its use can be facilitated by an *explanation facility* which on demand will show how the system arrived at its answer to a given problem. Among other things, this may enhance the acceptability, and therewith the value of the answers.

Shell + knowledge base = expert system

Together, the inference engine, knowledge editor and explanation facility form a software *shell*. Hereunder, distinction will repeatedly be made between the shell on the one hand and the knowledge base on the other.

Custom or standard shells. Expert system software may be custom made. However, just as is the case with other software, standard products are becoming more and more important. Such standard shells can be loaded with expert knowledge concerning the field which they are to deal with.[8]

The software house which has developed the shell may or may not itself implement the knowledge which turns it into an expert system. Some shell developers just license their shells to others who turn them into expert systems by implementing the necessary information. A rapidly increasing number of shells, such as Knowledge Craft, Leonardo, Personal Consultant Plus, Acquaint and Goldworks, are now commercially available.

Custom or standard expert systems. Like shells, expert systems, whether based on a standard shell or not, may themselves be custom made, and serve the needs of one customer only (e.g. a credit-assessing system developed for a bank, the features of which will probably depend largely on the bank's own rules and needs), or they can be standard expert systems which are as such marketed and licensed to third parties (e.g. a system devised to answer income tax questions). American Express' Authorizer's Assistent comes in the first category, while Palladian's Financial Adviser, a help for financial managers, or Guru, which assists non-expert users of large databases with their queries, are examples of standard expert systems. Other systems, such as Shell's Mendel, which can evaluate physical data concerning crude wells, have been developed for the company's own purposes, but can no doubt be potentially useful to other oil companies; whether they are indeed licensed to them is mainly a matter of policy.

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[6] Koch and Schnupp, p. 777; cf. also Duffin, p. 9 (see bibliography below).

[7] Finkelstein and Fischer, p. 12 (see bibliography below).

[8] A mixed form are so-called *vertical shells*. Their knowledge bases have already partly been stocked with information which can serve for different applications, e.g. troubleshooting in various areas. Further knowledge is implemented according to the specific field in which the expert system will be used. Thus, the basic troubleshooting knowledge might be identical for such different areas as computer maintenance, car repairs or the chemical industry, while the details will of course vary greatly.

Taking into consideration the complexity and variety of expert system development, the foregoing is evidently a simplification. For instance, it will not always be possible to make a clear distinction between the knowledge base and the inference engine. The implementation of the expert knowledge may even lead to changes in the structure of the inference engine, at least in those cases where shell development and expert system implementation are taking place at the same time. Nevertheless, it remains necessary to distinguish between the shell on the one hand and the knowledge base on the other when considering the legal protection of expert systems, since from a legal point of view these system components have different characteristics which may well affect development and licensing contracts, protection against copying or adaptation or liability in the event of malfunctions.

3. Legal Expert Systems

If expert systems are at all possible, why not devise legal expert systems as well? Although not everybody will agree that there is a shortage of lawyers, it can at least be admitted that legal knowledge is often in demand. Indeed, several projects are under way or have already been completed. D'Agapeyeff reports about a working system on employment law, intended to brief business executives about the essential (im)possibilities in a situation which they have to deal with, so that they are at least informed about the basic facts before discussing things with a lawyer, thus saving the latter's time and thereby costs.[9]

This system, which it took about 12 man-months to develop, and which runs on a simple PC, is a good example of the modest but nevertheless valuable tasks that legal expert systems may be able to fulfill in the near future.[10] Another interesting example is the UK Department of Social Security (DSS) Retirement Pension Forecast Adviser as described by Duffin, which enables 36 staff to handle 99.5% of 350,000 forecasts annually.[11]

However, more elaborate systems prove considerably more difficult to develop, even though they still deal with quite limited fields. Thus, a research group in my own law faculty is presently developing the Prolexs expert system which deals with the law of tenancy.[12] The project, which is primarily aimed at studying the question to what extent expert systems can be applied to the law, produces good results, but the investment is considerable, and the practical possibilities may well remain limited. Duffin mentions a more ambitious DSS demonstration project, in which 150 man-years are being invested, and which is mainly intended to find out in how far the 10,000 social security adjudication officers could be assisted by knowledge systems.[13]

One of the most problematic features of the law is that the interpretation of legal notions and rules is rather more subjective than is the case with most other application fields. Another is that the law may and indeed often does change at any moment, so that almost permanent updating will be needed (until governments decide to leave the law unchanged if at all possible, or to make only such changes as can easily be implemented, in order to prevent their expert systems from becoming obsolete. Then, expert systems will no longer serve, but rather force the law).

But as yet it is hard to foresee to what extent expert systems will penetrate into the legal area. Recently, Oskamp has extensively investigated and described the methodological and other problems which will have to be solved before it can even be said whether it will at all be possible to develop legal expert systems for more than quite limited tasks and with truly reliable results. The obstacles, even if perhaps not insurmountable, certainly are considerable. As Reed puts it in the conclusion of his succinct overview and analysis of the subject, "legal expert systems are still in their infancy."[14]

For the time being, we need not yet worry that we might lose our jobs to a computer.

4. Protection

Shell protection

Shells consist of software. They may be quite sophisticated, but their protection follows the now established software protection lines.

Copyright. Probably the most important form of protection is offered by copyright. Given sufficient originality, the shell will be protected. The required standards may vary from one country to another. These standards are understood to be rather mild in most countries (with the marked exception of the Federal Republic of Germany). Moreover, since expert system development is still the subject of much research and experimenting, developers will often have ample room for making original choices. As often as not, they will prefer to

[9] D'Agapeyeff, p. 21 (see bibliography below).

[10] Incidentally, d'Agapeyeff adds that, unexpectedly, "a considerable use of the system is by staff seeking to protect their own positions."

[11] Duffin, *ibid.* footnote 6, p. 10.

[12] Cf. Oskamp, Walker, Schrick and van den Berg (see bibliography below).

[13] Duffin, *ibid.* footnote 6, p. 9.

[14] Reed, *ibid.* footnote 5, p. 239.

write a new code rather than to use existing shells, modules or even routines.

Patents. Another effect of this comparative novelty of the field is that expert system shell development may well lead to patentable inventions being made, as new horizons offer ample room for inventiveness. These will essentially be software inventions, which in most countries cannot as such be patented, a restriction however which can often be overcome by patenting a hard- and software combination, if feasible, even though the actual invention merely concerns the software.

In some countries, especially the United States of America and the Netherlands, software can be patented as such. Thus, several expert system software patents have been granted in the United States to Teknowledge Inc. One of them, reported to be the first expert system software patent ever granted, was for a flexible manufacturing expert system intended to prepare orders for computer-integrated manufacturing[15]; another was granted in 1987 for certain AI shells.

Semiconductor chip shells

Like all software, expert system shells can be fixed on any media, such as disks or ROM (read-only memory) chips. Shells may also be implemented in semiconductor chip form, especially if large numbers can be produced or if performance requires it. In such cases, Semiconductor Chips Acts, which are now in force in a number of countries, will apply. Usually, these Acts exclude these "mask works" from copyright protection. However, as chips permit no changes after they have been produced, or even designed, the expert system developers may prefer to implement part of the system in chip form only, while the rest is stored in ROM form. Protection of this latter part will then remain subject to copyright.

The knowledge base

Knowledge bases may also be subject to copyright, but there are several differences in comparison to shell protection. The facts and rules which together represent the knowledge cannot as such be protected by copyright, nor by patents for that matter, as they essentially consist of unprotectable ideas and data. Protection, if any, can sometimes be secured by trade secrets law and contracts.

On the other hand, a whole body of facts and rules as contained in the knowledge base may well be a copyrightable data collection. This will depend on whether it is original by its selection, structure and wording. As mentioned earlier, expert systems tend to be characterized by the fact that the knowledge can be implemented more or less at random; when in operation the system itself will decide which rules must take precedence over others. This makes it unlikely that the structure will be original. The wording on the other hand will usually be highly formalized and follow accepted standards, leaving little or no room for originality either.

Remains the selection only. Although expert knowledge is probably to a large extent of an objective nature, i.e., experts are likely to hold identical views about major parts of it, they nevertheless tend to differ in opinion with respect to many other, perhaps mainly minor points. When asked to give the relative value of a certain rule, e.g. whether it applies in 70 or in 80% of all cases—the kind of rule which expert systems often need—they will probably also come to different results. Therefore, no two knowledge bases incorporating the knowledge of different experts will be identical; probably not even two knowledge bases made by different knowledge engineers who interview the same expert. In many countries, including the United States and the Netherlands, this is enough to make them copyrightable.

Ownership

Ownership of the copyright to the shell follows the general lines of software copyright ownership. More interesting is the question, who has title to the copyright in the contents of the knowledge base, the facts and rules: the expert or the knowledge engineer. The expert provides the knowledge, but the knowledge engineer is probably to a large extent responsible for the form, and perhaps even for the selection of what finds its way to the knowledge base. Therefore, the latter is usually seen as the author. Still, I wonder whether the expert really cannot at least claim coauthorship. After all, he is likely to share the responsibility for the knowledge selection, he will provide the percentages of probability where applicable, and he will probably also suggest or correct the wording of such statements as need not fully be formalized. However, definite answers can only be given by analyzing either's contribution to a specific knowledge base.

Of course, this is typically a matter which should be dealt with by contract. It may be practical if the parties just state in the contract and on the product whom they consider to be the author. According to Article 15 of the Berne Convention, which has been implemented in most, if not all national copyright laws, such mention carries a presumption of authorship which will probably be difficult to challenge.

[15] Report in *MIS Week*, May 12, 1986.

Infringement

Again, shell protection probably differs little or not at all from software protection in general.

Several infringement cases have been reported, but they are either still pending or they have been settled, as no decisions seem to have been reported. In one of these, a copyright case, Gigamos Systems Inc. sued Gensym Corp. and its six founders, former employees of Lisp Machine, a firm which had earlier been taken over by Gigamos. It was alleged *inter alia* that code of Lisp's Picon program was found in the Gensym G2 expert system.[16] Another case concerned alleged infringement of Teknowledge's patent in AI shells by Paperback Software International's VP Expert shell.[17]

A more interesting question would seem to be, under what conditions the copyright in the knowledge base must be deemed to have been infringed, and especially whether there is infringement if the knowledge from one system should be used to build the knowledge base for another shell. As said before, the facts and rules as such are not protectable. Their implementation in a different shell will certainly require adaptation, so that it remains to be seen whether sufficient identity of protectable form can still be found to justify a finding of infringement. However, as yet it is probably too early to try and discuss this kind of problem in detail.

5. Liability

Expert systems generate output which, together with information from additional sources, is meant to be acted upon. If the data is wrong, that can easily cause damage. Who is liable if the output turns out to be unreliable?

The question is in itself far from new. Software (un)reliability is a much discussed topic. It must be remembered that most software is unreliable, at least from a fundamental point of view: one should remain aware that it is impossible to test all but the most elementary (or the most formalized) software in such a way that it will cover all possible combinations and occurrences. However, this is even more true for expert systems than for traditional software. It is not possible to guarantee a knowledge base to be both fully comprehensive and exact, as its contents will reflect an expert's view of the relevant rules rather than the rules themselves. The way in which the inference engine processes the facts and rules is probably even harder to test.

This cannot but influence the liability issue. Present-day expert systems can support decision-making, but they are not ready to replace it, and users should remain aware of that fact. Unfortunately, this is likely to conflict with the commercial need to advertise the system as an utterly indispensable and reliable tool. Although probably no vendor of expert systems will forget to exclude all liability to the fullest possible extent in the terms of license, he may at the same time try to promote the system capabilities rather than give fair warning for its limitations. Thus, he may cause some ill-founded expectations among prospective users. Under certain circumstances this may lead to liability, especially if the product is sold without a valid contract, e.g. a shrink-wrap license which turns out to be unenforceable. After all, notwithstanding the differences between national legal systems, liability largely depends on the question as to what one may reasonably expect, and representations may cause such expectations.

Strict liability?

The question is also bound to arise, whether liability for damage caused by malfunctioning expert systems is based on negligence—to be proved by the damaged party—or whether strict liability applies. Nycum and Fong point out that

> ...traditional policy rationales for strict liability apply to expert systems: the manufacturer is usually better able to bear and spread the cost of accidents than individual victims, and systems developers and distributors have better access to quality control to ensure accident reduction.

The first of these arguments seems debatable for most of present-day expert systems, which are mainly intended for use in large companies and institutions, but the second is certainly true.

Furthermore, there is a growing tendency to view software as a *product* instead of a *service*. While liability for services tends to be negligence-based, strict liability prevails for products. Thus, the EC Directive of July 25, 1985 is usually considered to apply to software (or at least to software packages),[18] and the same will apply to expert system software. So far, no court decisions have been reported which deal with software liability under the Directive. Recently however, the EC Commission itself has expressed the view that under the Directive software should be considered as a product.[19]

On the other hand, to provide facts or knowledge to third parties is more generally seen as a *service*, although it is difficult (or even impossible according to some authors) to draw a clear borderline between software and information. But to the

[16] S. Gibson, *Computerworld*, September 14, 1987, p. 126.
[17] D. Churchbuck, *PC Week*, March 31, 1987, p. 126.
[18] Cf. e.g. Stuurman, pp. 129 *et seq.* and 139 (see bibliography below).
[19] *Official Journal*, May 8, 1989, C 114/42.

extent that facts and rules, together with expert system software, will be implemented in semiconductor chips or other hardware, they too might well be considered as products.

It should be remembered that the EC Directive only applies to defective products if they cause personal injury or damage to consumer goods, while it does not cover purely financial or economic losses. This clearly limits its impact, not in the last place where expert systems are concerned.

An essential question is whether an expert system can be labeled as *defective* if it happens to produce erroneous results on rare occasions.[20] Under Article 6 of the Directive, an expert system will be considered to be defective if it does not provide the safety which one may reasonably expect, taking into account all circumstances, including the presentation of the product, the use which could reasonably be expected to be made thereof, and the situation at the time when it was put into circulation. System developers will therefore be well advised not only to exclude all liability to the fullest possible extent, but also to provide the system users with "foolproof" documentation, and to explain both in the contract and the documentation that even state-of-the-art expert systems simply cannot be guaranteed to produce correct output at all times, if they wish to prevent their products to be found defective under Article 6.

Who will be liable?

It may be difficult to trace the exact cause for expert system malfunctions: is a failure due to the shell or to the knowledge base? This may be of particular importance if a system is based on a standard shell; both the shell and the system developers will probably decline all responsibility if it cannot be proved that the problem occurred in those parts of the system for which they were responsible. In such cases, the system developer may be more likely to be considered liable anyway, as he supplied the whole system to the customer.

Liability for not using an expert system

Expert systems can make mistakes, but so can human beings. Expert systems certainly are not merely developed to replace human experts, but also to improve on performance and effectiveness. Once this objective has been reached in certain systems, that may well entail a professional obligation to use them.[21] Thus, as soon as X-ray diagnostic interpretation expert systems will permit a better score in tracing cancers, a medical center which sticks to human interpretation only might well be liable in case of incorrect interpretation.

6. Future Developments

The foregoing is no more than an outline of the main issues; moreover, the picture is likely to be subject to rapid changes, some of them fundamental.

One of these will no doubt come along with the introduction of so-called *neural networks*, hard- or software which simulates human brain functions on a computer. (It is often believed that traditional computers also simulate the brain—after all they used to be called *electronic brains* not so long ago—but this is not the case.)

The architecture of neural networks as well as the way in which they function differ very much from existing systems. In neural networks, the information is not reproduced but irretrievably processed during storage; the data is fed into the system over and again many times. Instead of reproducing it, the system "learns," i.e. it adjusts itself to the information. Repeated training of identical systems (or even the same system) will produce non-identical results, i.e. the contents of the system "memory" will show no likeness; yet the systems, when applied to perform a task, will produce similar, if not identical output.

As is powerfully argued by Johnson-Laird and Robinson, neural networks will force us to reconsider the present intellectual property and liability issues, and to contemplate new ones; for instance, copyright notions such as originality, authorship, reproduction and infringement will probably no longer apply, at least not in their present form. We certainly are likely to meet again at future computer law conferences!

[20] Stuurman, *ibid.* footnote 18, pp. 141 *et seq.*

[21] Cf. Zoppini, p. 58 (see bibliography below).

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Calendar of Meetings

WIPO Meetings*

(Not all WIPO meetings are listed. Dates are subject to possible change.)

1990

October 29 to November 9 (Geneva)

Committee of Experts on the Harmonization of Certain Provisions in Laws for the Protection of Inventions (Eighth Session; Second Part)

The Committee will continue to examine a draft treaty supplementing the Paris Convention as far as patents are concerned (patent law treaty).
Invitations: States members of the Paris Union and, as observers, States members of WIPO not members of the Paris Union and certain organizations.

November 7 to 9 (Geneva)

Preparatory Meeting for the Diplomatic Conference for the Conclusion of a Treaty Supplementing the Paris Convention as Far as Patents Are Concerned (Second Part)

The Meeting will complete the preparation of the organization of the diplomatic conference (June 1991).
Invitations: States members of the Paris Union, EPO and OAPI.

November 26 to 30 (Geneva)

Working Group on the Application of the Madrid Protocol of 1989 (Second Session)

The working group will continue to study Regulations for the implementation of the Madrid Protocol of 1989.
Invitations: States members of the Madrid Union, States having signed or acceded to the Protocol, the European Communities and, as observers, other States members of the Paris Union expressing their interest in participating in the Working Group in such capacity and certain non-governmental organizations.

December 10 to 14 (Geneva)

PCT Committee for Administrative and Legal Matters (Fourth Session)

The Committee will continue the work started during its third session (July 2 to 6 and September 17 to 21, 1990).
Invitations: States members of the PCT Union and, as observers, States members of the Paris Union not members of the PCT Union and certain organizations.

1991

January 28 to 30 (Geneva)

Information Meeting(s) on the Revision of the Paris Convention

An information meeting of developing countries members of the Paris Union and China and, if it is so desired, information meetings of any other group of countries members of the Paris Union will take place for an exchange of views on the new proposals which will have been prepared by the Director General of WIPO for amending the articles of the Paris Convention for the Protection of Industrial Property which are under consideration for revision.
Invitations: See the preceding paragraph.

January 31 and February 1 (Geneva)

Assembly of the Paris Union (Fifteenth Session)

The Assembly will fix the further procedural steps concerning the revision of the Paris Convention and will take cognizance of the aforementioned proposals of the Director General of WIPO. It will also decide the composition of a preparatory meeting which will take place in the first half of 1991.
Invitations: States members of the Paris Union and, as observers, States members of WIPO not members of the Paris Union and certain organizations.

* The first session of the Committee of Experts on a Possible Protocol to the Berne Convention, which was previously announced in this calendar for October 29 to November 2, 1990, has been postponed.

June 3 to 28 (The Hague)

Diplomatic Conference for the Conclusion of a Treaty Supplementing the Paris Convention as Far as Patents Are Concerned

This diplomatic conference will negotiate and adopt a treaty supplementing the Paris Convention as far as patents are concerned (patent law treaty).
Invitations: States members of the Paris Union and, as observers, States members of WIPO not members of the Paris Union and certain organizations.

September 23 to October 2 (Geneva)

Governing Bodies of WIPO and the Unions Administered by WIPO (Twenty-Second Series of Meetings)

All the Governing Bodies of WIPO and the Unions administered by WIPO meet in ordinary sessions every two years in odd-numbered years. In the sessions in 1991, the Governing Bodies will, *inter alia*, review and evaluate activities undertaken since July 1990, and consider and adopt the draft program and budget for the 1992–93 biennium.
Invitations: States members of WIPO or the Unions and, as observers, other States members of the United Nations and certain organizations.

November 18 to December 6 (dates and place to be confirmed)

Diplomatic Conference on the Revision of the Paris Convention for the Protection of Industrial Property (Fifth Session)

The Diplomatic Conference is to negotiate and adopt a new Act of the Paris Convention.
Invitations: States members of the Paris Union and, without the right to vote, States members of WIPO or the United Nations not members of the Paris Union as well as, as observers, certain organizations.

UPOV Meetings

(Not all UPOV meetings are listed. Dates are subject to possible change.)

1991

March 4 to 19 (dates and place to be confirmed)

Diplomatic Conference for the Revision of the UPOV Convention

Invitations: Member States of UPOV and, without the right to vote, States members of the United Nations not members of UPOV as well as, as observers, certain organizations.

Other Meetings in the Field of Copyright and/or Neighboring Rights

Non-Governmental Organizations

1991

January 20 and 21 (Cannes) — International Association of Entertainment Lawyers (IAEL): International Lawyers Meeting

April 22 to 29 (Aegean Sea) — International Literary and Artistic Association (ALAI): Congress

May 12 to 16 (Dunkeld, United Kingdom) — International Confederation of Societies of Authors and Composers (CISAC): Legal and Legislation Committee