

## THE OVERLAP BETWEEN LITERARY COPYRIGHT AND ARTISTIC COPYRIGHT IN ENGINEERING DRAWINGS

The dichotomy traditionally drawn in copyright law between literary works and artistic works has to be reviewed in the light of recent cases, from England and Singapore, holding that circuit diagrams and the like qualify as a literary work *and* as an artistic work. This article examines the implications arising from the overlap between literary copyright and artistic copyright in this area.

### I. INTRODUCTION

THE Singapore Copyright Act 1987<sup>1</sup> maintains a distinction between the various types of subject-matter in which copyright may subsist, the most general distinction being the division between “works” and “subject-matter other than works”.<sup>2</sup> Within the category of “works” is a further distinction between “literary works”, “dramatic works”, “musical works” and “artistic works”.<sup>3</sup> The significance of such distinction lies in the differing scope of

<sup>1</sup> Cap 63, 1988 Ed.

<sup>2</sup> “Works” are dealt with in Pt III of the Copyright Act 1987, while “subject-matter other than works” are dealt with in Pt IV. This general distinction owes its origins to the historical development of copyright. Copyright started off as a right granted to “authors” of “books” (see the Statute of Anne 1709, the first Copyright Act in the world), and later to authors of engravings, prints, lithographs, sculptures, dramatic works, musical compositions, all of which are now subsumed under the term “works” or “authors’ works”. The copyright in such “works” was also protected in Continental Europe, as *droits d’auteur* or authors’ rights, where the justification for protection stemmed from the belief that the “work” was an extension of its author’s personality. As technology progressed introducing new methods of dissemination of “works”, new subject-matter (*eg*, sound recordings, films, broadcasts, cable programmes) were created by organisations, which creations for most part were based on pre-existing “works”. While it was accepted that these new subject-matter merit legal protection, the difficulty of designating a natural person as the “author” of the new subject-matter made it conceptually impossible for such creations to be protected within the *droits d’auteur* regime. This led to the creation of new rights for these new subject-matters: *droits voisins* or “neighbouring rights”, so called because the new rights are close to, connected with, or neighbouring on, the *droits d’auteur*. These “neighbouring rights” are those subsisting in what is known in Singapore as “subject-matter other than works”.

<sup>3</sup> See s 26 of the Copyright Act 1987. For the statutory definitions of each of these terms, see s 7(1).

protection accorded to each type of copyright subject-matter. With regard to “works”, the scope of protection for the first three enumerated types of “works” are similar, but they differ materially from the scope of protection for “artistic works”.<sup>4</sup> Hence the importance of assigning a “work” into the appropriate group: is it a “literary/dramatic/musical work”, or is it an “artistic work”? In most cases, little difficulty is encountered in this task, although the boundary demarcating “literary works” from “artistic works” is not all that clear.<sup>5</sup> Nevertheless, a line has to be drawn, or so it was presumed, in each case; a “work” can be either a literary work *or* an artistic work, attracting the corresponding scope of protection.

In recent times, however, this presumption has been displaced. In *Anacon Corp Ltd v Environmental Research Technology Ltd* (‘*Anacon*’),<sup>6</sup> the English High Court held that an electrical circuit diagram, which contained

<sup>4</sup> The exclusive rights in literary, dramatic and musical works are set out in the same subsection, *ie*, s 26(a), while the exclusive rights in artistic works are found in s 26(b). In Laddie, Prescott and Vitoria, *The Modern Law Of Copyright And Designs* (2nd Ed, 1995), the scope of protection for literary, dramatic and musical works is discussed in one same chapter (Ch 2), whereas that for artistic works is dealt with quite separately, in a chapter on its own (Ch 3).

<sup>5</sup> The status of maps, for example, is slightly complicated because of its historical genesis. Under the UK Copyright Act 1842, maps enjoyed copyright protection as “books” (see s 2) At the same time, maps were already receiving protection under the Engraving Copyright Acts 1734 and 1766. Whether a map would be protected under the 1842 Act or the 1734/1766 Acts depended on which statute the copyright owner chose to rely upon: see *Stannard v Lee* (1871) 19 WR 615 and *Stannard v Harrison* (1871) 19 WR 811. Under the UK Copyright Act 1911 (which is the predecessor of the Singapore Copyright Act 1987), maps were also specified to be within the statutory definition of “literary works” [see s 35(1)]. Under the UK Copyright Act 1956, however, maps were then re-classified as “drawings” and therefore put within the definition of “artistic works” [see ss 3(1) and 48(1)]. This remains the position today in the UK (see s 4 of the UK Copyright, Designs & Patents Act 1988) and in Singapore (see s 7(1) of the Copyright Act 1987). In spite of the re-classification, some cases have held that maps could be either “artistic works” or “literary works”: see *Geographia Limited v Penguin Books Limited* [1985] FSR 208 at 209; *Universal Press Pty Ltd v Provest Ltd* (1989) AIPC 39,164 at 39,167-39,168. For another example of how the boundary between “literary works” and “artistic works” has shifted, see the status of charts and plans: they were included in the definition of “literary works” under the UK Copyright Act 1911, but are now re-classified as “drawings”, and hence as “artistic works”, under the Copyright Act 1987. See *Lau Foo Sun v Government of Malaysia* (1974) 2 MLJ 28 where the Federal Court of Malaysia held that engineering drawings and designs made for the construction of a school (*ie*, architectural plans) were “literary works” for the purposes of the Copyright Enactment (FMS Cap 73) which is a reproduction of the UK Copyright Act 1911. Note also that the boundary demarcating “literary works” from “dramatic works” is also less than clear, *eg*, a play can be both a “literary work” as well as a “dramatic work”. This overlap, however, does not really matter because the scope of protection is basically the same for these two types of works.

<sup>6</sup> [1994] FSR 659.

information as to how and what components were connected together, was an “artistic work” and a “literary work” at the same time. This decision was recently endorsed and applied by the Singapore High Court in *Real Electronics Industries Singapore (Pte) Ltd v Environmental Research Technology Ltd* (‘*Real Electronics*’).<sup>7</sup> Can a “work” fall into more than one category? If so, what is the appropriate scope of copyright protection for a “work” of such dual-nature? In particular, can a right subsisting only in “artistic works” be infringed in relation to the literary part of such a “work”? This article examines these recent decisions, including *Autospin (Oil Seals) Ltd v Beehive Spinning* (‘*Autospin*’),<sup>8</sup> to investigate the implications arising from the overlap between literary copyright and artistic copyright in engineering drawings.

## II. ENGINEERING DRAWINGS AS ARTISTIC WORKS AND AS LITERARY WORKS

It is well established that non-aesthetic engineering drawings of functional articles fall within the definition of “artistic works”.<sup>9</sup> For example, in *British Leyland Motor Corporation & Anor v Armstrong Patent Co Ltd & Anor*,<sup>10</sup> it was not in dispute that engineering drawings of motor car exhaust pipes were the subject of artistic copyright.<sup>11</sup> Typically, engineering drawings would also feature figures and words which conveyed the precise angles, dimensions or description necessary to enable the article in three dimensions to be manufactured. Until *Anacon*,<sup>12</sup> the significance of such figures and words in engineering drawings lay only in the help it provided the court when interpreting the drawings to determine if a three-dimensional article was a reproduction of what was depicted in the two-dimensional drawings.<sup>13</sup>

<sup>7</sup> [1996] 1 SLR 336.

<sup>8</sup> [1995] RPC 683.

<sup>9</sup> This term is defined in s 7(1) of the Copyright Act 1987 to include “drawing...whether the work is of artistic quality or not”. The term “drawing” is in turn defined in the same subsection to include “any diagram, map, chart or plan”. In the current UK copyright legislation, *ie*, the Copyright, Designs & Patents Act 1988, “drawings” is included in the term “artistic works” as a type of “graphic works” (s 4).

<sup>10</sup> [1986] 2 WLR 400 (HL); [1984] FSR 591(CA).

<sup>11</sup> Although before the trial judge (whose judgment is reported in [1982] FSR 481), the defendants raised the point that the engineering drawings were insufficiently original or artistic to give rise to copyright. This point was not fully argued by the defendants who asked the trial judge for a finding on the facts in order to reserve their position on appeal. Before the Court of Appeal and the House of Lords, however, the defendants conceded that the drawings enjoyed artistic copyright.

<sup>12</sup> *Supra*, note 6.

<sup>13</sup> See *Temple Instruments Ltd v Hollis Heels Ltd* [1973] RPC; *LB (Plastics) Ltd v Swiss*

### 1. *The Anacon case*

In *Anacon*, the engineering drawing involved was a circuit diagram of an electronic dust meter analyser. The components, resistors, transistors, capacitors and so on, were shown on the circuit diagram by the conventional symbols for these components, and against each, was written a piece of information indicating the appropriate rating or information on that particular component. From this circuit diagram, the plaintiffs manufactured their circuit boards. These three-dimensional circuit boards, however, looked nothing like the two-dimensional topological circuit diagram. What the defendants had done was to use one of the plaintiffs' circuit boards to make a "net list", that is a list of all the components in the circuit board, and in relation to each component, what other components it was connected to, and if necessary, where. When this "net list" was fed into a computer, it would produce a circuit diagram and probably a scheme for making a printed circuit board, which the defendants then used to manufacture their circuit board. The plaintiffs alleged that both the defendants' "net list" and the circuit board made from information contained in the "net list" infringed the copyright in their circuit diagram. The plaintiffs' first submission, which Jacob J accepted, was that their circuit diagram was an original "artistic work". Jacob J found, however, that what the defendants had done did not infringe the copyright in the plaintiffs' circuit diagram because, visually, the defendants' circuit board and the "net list" looked quite different from the plaintiffs' circuit diagram.

The plaintiffs then tried a novel argument: because the circuit diagram contained technical information in the form of writing, it was not only an "artistic work", it *also* fell within the definition of "literary work" provided in the Copyright, Designs & Patents Act 1988, namely, "any work, other than a dramatic or musical work, which is written, spoken or sung", including "a table or compilation".<sup>14</sup> The fact that some of the information in the circuit diagram was written in code or symbol did not matter since "writing"

*Products Ltd* [1979] RPC 551; the *British Leyland* case (CA), *supra*, note 10, and *infra*, note 29.

<sup>14</sup> See s 3(1). The definition of "literary works" relevant in the *Anacon* case should be that provided in the UK Copyright Act 1956. This is because the plaintiffs' circuit diagram was made before the Copyright, Designs & Patents Act 1988 came into force, and it is provided in paragraph 5(1) in Schedule 1 of the 1988 Act that copyright will subsist in the circuit diagram under the 1988 Act if copyright subsisted in the circuit diagram by virtue of the provisions of the 1956 Act. Under the latter Act, s 48(1) defined "literary work" as including "any written table or compilation". According to Jacob J, the definition of "literary work" in the 1988 Act is no different than that found in the 1956 Act.

is defined as including “any form of notation or code, whether by hand or otherwise and regardless of the method by which or medium in or on what it is recorded and ‘written’ shall be construed accordingly”.<sup>15</sup> The response of Jacob J to this argument was as follows:<sup>16</sup>

My first thought was that it would be absurd to regard a circuit diagram as a literary work, but the more one thinks about the ambit of that expression, as used in the [Copyright, Designs & Patents] Act, the more one is driven to the conclusion that provided it is all written down and contains information which can be read by somebody, as opposed to [being] appreciated simply with the eye, the more one sees that that is just what it is. Similarly musical notation is written down, but needs expressly to be taken out of the definition of “literary work”. But that which is not expressly taken out remains within it. What one has here is electrical engineer’s notation.

The judge concluded that the circuit diagram was a “literary work”. It ought to be noted, however, that this conclusion was reached without the benefit of any arguments from the defendants.<sup>17</sup> Are there any valid arguments to the contrary?

The initial reaction to reject the proposition that the presence of technical information in an “artistic work” gives it another character, namely that of a “literary work”, may be explained on the basis that, if a different scope of protection is given to different categories of “works”, the legislators must have intended “literary works” and “artistic works” to be mutually exclusive. Yet, the definition of “literary works”, as provided in the copyright statutes and interpreted by courts, does not bear out this intention. As mentioned, “literary work” is statutorily defined as any work (other than a dramatic work or musical work) which is written, *ie*, in any form of notation or code.<sup>18</sup> This definition is hardly any more enlightening than the non-exhaustive definitions of “literary works” found in the earlier English

<sup>15</sup> See s 178 of the Copyright, Designs & Patents Act 1988. A similar definition of ‘writing’ is found in the Copyright Act 1956 (“any form of notation, whether by hand or by printing, typewriting or any similar process”).

<sup>16</sup> *Supra*, note 6, at 663.

<sup>17</sup> This was because the defendants were a company currently in liquidation. Even though the liquidator had given consent to an order permitting this action to be pursued, the defendants did not appear at the hearing before Jacob J. In fact, the judge expressed his reluctance to have to decide this circuit diagram point in any way, and he admitted of the possibility that in some subsequent case where the matter was fully argued, a different view on this issue might be taken: *supra*, note 6, at 663.

<sup>18</sup> *Supra*, note 15.

copyright statutes.<sup>19</sup> The courts have only been slightly more helpful, proposing as the ordinary meaning of a “literary work” something which is “intended to afford either information or instruction, or pleasure in the form of literary pleasure”.<sup>20</sup> It is this vagueness in the ambit of the term “literary works” that gives rise to the possibility that a work can be both a “literary work” and an “artistic work”. For example, since a drawing of a car exhaust pipe affords information on the exhaust pipe as much as text which describes the exhaust pipe, the drawing should qualify as a “literary work”; at the same time, such drawings are expressly provided for in the copyright legislation as a type of “artistic work”.<sup>21</sup>

It can be argued, however, that not all artistic works which convey information qualify as “literary works”. Following a distinction highlighted by Jacob J, a line can be drawn between artistic works which afford information, and other literary works: the information in the latter is principally conveyed through *reading*, *ie*, through written characters,<sup>22</sup> whereas information in the former is conveyed *through appreciation with the eye*, *ie*, visual impact.<sup>23</sup> Under this distinction,<sup>24</sup> works which convey information through visual impact would be treated as “artistic works” only. In this way, “artistic works” are kept separate from, and do not overlap with, “literary works”.

The difficulty in classifying the circuit diagram in the *Anacon* case arises because the work contained both artistic elements and written characters, conveying information through visual impact and through reading. This difficulty, however, is not peculiar to circuit diagrams and engineering drawings. Many other works, such as the encyclopaedia, are an assembly

<sup>19</sup> *Supra*, note 14.

<sup>20</sup> *Per* Davey LJ in *Hollinrake v Truswell* (1894) 3 Ch D 420 at 427-8, a formulation which was accepted to be the ordinary meaning of the words “literary works” in *Exxon Corp v Exxon Insurance Consultants International Ltd* [1982] RPC 69.

<sup>21</sup> See s 4 of the Copyright, Designs & Patents Act 1988, and *supra*, note 9. Similarly, a word logo represented or embellished in a fanciful manner could qualify as an “artistic work”: see, *eg*, *Re Auvi Trademark* [1992] 1 SLR 639 where Chao J in the High Court of Singapore held that a specially designed logo consisting of the word “Auvi” was an “artistic work”. In the case, there was no attempt to argue that the word logo was also a “literary work”, presumably because the word ‘Auvi’ alone would not qualify as a “literary work”: see the “*de minimis*” principle set out in *Exxon Corp v Exxon Insurance Consultants International Ltd*, *ibid* (where a single word ‘Exxon’ invented by a company as its corporate name was held not to be a “literary work”). But could not a poem represented in Chinese calligraphy qualify as a “literary work” *and* as an “artistic work”?

<sup>22</sup> But note that a “literary work” may exist in the form of a sound recording (see s 16(2) of the Copyright Act 1987); such a “literary work” can be heard but not read.

<sup>23</sup> *Supra*, note 16.

<sup>24</sup> This distinction is an echo of the point made by Lord Oliver in *Interlego AG v Tyco Industries Inc* [1988] 3 WLR 678 at 706, that “essentially artistic copyright is concerned with visual image”. This point was adopted by Rubin J in *Real Electronics*, *supra*, note 7, at 348.

of artistic and literary works where the visual impact is usually studied in conjunction with the literary component if the work is to be appreciated fully.<sup>25</sup> The same can be said of many engineering diagrams. In the *Anacon* case, in particular, the vital information in the circuit diagram is found not only in the drawings showing the relative position of each component as drawn, but also in the codes and symbols describing the nature of each of the components. Works like encyclopaedia and engineering diagrams should therefore be viewed as a whole. The status of such works has in fact been provided for in the copyright legislation: as a type of “literary work”, namely, a “compilation”.<sup>26</sup> In this sense, works which contain artistic material can be protected within the ambit of “literary works”.<sup>27</sup> At the same time, the artistic component in such works enjoy a separate copyright as “artistic works”. Therefore, works like the circuit diagram in the *Anacon* case can enjoy copyright protection as “artistic work” and as “literary work”. Further, just as the artistic component in the circuit diagram can enjoy a separate copyright as “artistic works”, so can the literary component as “literary works”.<sup>28</sup> In effect, there were really three types of “works” to be found in the circuit diagram:

- (i) the drawings and codes and symbols collectively as a compilation and therefore a “literary work”;
- (ii) the drawings as “artistic works”; and
- (iii) the codes and symbols collectively as “literary works”.

On this analysis, the decision in *Anacon* has not broken new ground.

<sup>25</sup> Similarly, in multimedia works, information may be presented to the reader or viewer or listener, in ever increasingly complex inter-related methods.

<sup>26</sup> *Supra*, note 14.

<sup>27</sup> See, eg, *Purefoy Engineering Co Ltd v Sykes Boxall & Co Ltd* [1955] 72 RPC 89 (involving a trade catalogue comprising text as well as photographs and drawings).

<sup>28</sup> See, eg, *Interlego AG v Tyco Industries Inc*, *supra*, note 24. It was argued that drawings of toy bricks, which had been substantially copied from earlier drawings, were original because of new figures (which denoted the measurements of the bricks) and manufacturing instructions appearing on the drawings. Lord Oliver rejected this argument. He acknowledged that explanatory material, in the form of words or figures, were “clearly the subject of literary copyright”, but he held that they could not confer on an artistic work an originality which it did not possess in its own right (at 707). See also the Court of Appeal decision in *British Leyland*, *supra*, note 10, where the defendants argued that the figures and words appearing on the drawing of the car exhaust pipe enjoyed literary copyright, an argument which Oliver LJ found “unassailable” (at 602). Note, however, that there may be engineering drawings where the technical information is so insubstantial that they would not qualify as “literary works”: see *Exxon Corp v Exxon Insurance Consultants International Ltd*, *supra*, notes 20 and 21.

There is another way of looking at Jacob J’s conclusion. In this alternative analysis, the status of a dual-nature work as a whole, if not as a compilation, would be determined by whether the information relating to the subject-matter concerned is conveyed primarily by the visual depiction of that subject-matter, or by the written characters describing that subject-matter. In the case of engineering drawings, the primary impact of these works arguably lies in the visual impact of the drawings. Even though the person skilled in the art would have to refer to the figures and directions for a complete understanding of the information relating to the article, the role of these figures and directions in engineering drawings is really to explain what was drawn and therefore secondary to that of the drawings. Hence, engineering drawings as a whole could be treated as “artistic works”. In the *Anacon* case, however, the circuit diagram was basically a drawing of lines joining up codes and symbols (which represented the components making up the circuit board). By studying the codes and symbols to determine the components and how they are connected to each other, the defendants built a circuit board which visually did not look anything like the circuit diagram but would function like the plaintiffs’ circuit board. A hypothetical and very simplistic drawing of the circuit diagram is shown in Figure 1, whereas the layout of the defendants’ circuit board might look like that in Figure 2.

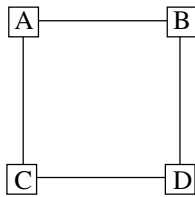


Figure 1

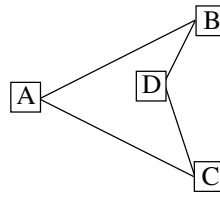


Figure 2

This suggests that the information relating to the plaintiffs’ circuit board is conveyed as much by a reading of the circuit diagram as by a visual appreciation of the circuit diagram. In such a case, where the impact of work lies in the literary component and in the artistic component at the same time, primacy need not be given to either. Instead, the work can be regarded as an “artistic work” and as a “literary work” (other than a compilation). Such a work straddles the boundary between “literary works” and “artistic works”, creating an overlap between the two.<sup>29</sup>

<sup>29</sup> This alternative analysis of the decision in the *Anacon* case admittedly runs into difficulties when it is compared with the *British Leyland* case, *supra*, note 10. In *British Leyland*, the



## 2. The *Real Electronics* case<sup>30</sup>

The plaintiffs were claiming copyright in the design appearing on the printed circuit board of their fax-modem.<sup>31</sup> This design, which was derived from a set of schematic diagrams,<sup>32</sup> contained much technical information by way of a multitude of markings, lines, circles, holes, printed figures, abbreviations and codes with a view to placing thereon the various resistors, capacitors, transistors, transformers, inductors and the requisite switches.

pictorial shape of the exhaust pipes was drawn by intersection points shown on a series of horizontal and vertical lines, described as “x, y and z co-ordinates”. Evidence showed that, by feeding these co-ordinates into the microprocessor which produced the bend programme, the engineer could produce the shape of the exhaust pipes without even looking at the shape of the exhaust pipe as it appeared in the drawing. The defendants had obtained these co-ordinates by measuring them off a copy of the plaintiffs’ exhaust pipe. Using these co-ordinates, and with the aid of a computer, the defendants reproduced a three-dimensional version of the exhaust pipe. This reproduction, the plaintiffs alleged, infringed their artistic copyright in the engineering drawings. Before the Court of Appeal, the defendants made a point that the drawing was immaterial and an unnecessary addition in the engineering drawings, which point was used as a springboard for one of their defences, namely, that since the defendants produced their exhaust pipe making use of the co-ordinates, they were reproducing only the literary component in three dimensions (which reproduction did not amount to an infringement of the literary copyright: see *infra*, notes 42-44, and the accompanying main text), and not reproducing the artistic component. This defence failed. According to the Court of Appeal, the straight lines and the accompanying “x, y and z co-ordinates” in the drawings were part and parcel of the drawings of the exhaust pipe which were “artistic works”. The distinction sought to be drawn by the defendants was too “philosophical” (at 605, *per* Oliver LJ) and “over-subtle” (at 606, *per* Oliver LJ). As such, by reproducing these co-ordinates, the defendants were really reproducing the drawings. It can be said that, in an indirect way, the defendants were arguing that, since the literary component in the engineering drawings was more important than the pictorial representation of the exhaust pipe in that the information relating to the exhaust pipes was conveyed primarily by the literary component, the engineering drawings as a whole were “literary works” rather than as “artistic works”. Yet the Court of Appeal held that the engineering drawings were “artistic works”. In this sense, the decision in *Anacon* does not sit well with the *British Leyland* case. It must be noted, however, that the defendants in *British Leyland* did not deny that the engineering drawings were “artistic works”. Perhaps they could not because, according to an expert witness (one Mr Keik) who agreed that the relevant information was contained in the co-ordinates, the pictorial information could not be said to be superfluous because “pictures can be worth a thousand words” (at 601). This could be taken to mean that, to the engineer studying the engineering drawings, its visual impact was as important as the “x, y and z co-ordinates”. As such, the Court of Appeal might have held that the engineering drawings as a whole were both “artistic works” and “literary works”, if the issue relating to the classification of the engineering drawings had been expressly put before it.

<sup>30</sup> *Supra*, note 7.

<sup>31</sup> “Fax” is an acronym for facsimile and “modem” is an abbreviation for modulator-demodulator.

<sup>32</sup> These schematic designs belonged to an American modem manufacturer who had made

The plaintiffs alleged that the layout of the defendants' circuit board was copied from the plaintiffs' design, thereby infringing their copyright in the design. When dealing with the proper classification of this design under the Copyright Act 1987, Rubin J noted that there was little dispute between the parties that this design was an "artistic work", and in fact the rest of his judgment proceeded on this basis. Because the plaintiffs' and the defendants' boards were visually almost identical in layout, he held that the plaintiffs' copyright in the design as an "artistic work" had been infringed.<sup>33</sup>

By way of *obiter*, the judge considered the plaintiffs' argument that this design was a "literary work" as well. He was impressed with the reasoning in the *Anacon* case, concluding that the design was a "literary work" since the design contained "a considerable body of technical details as would clearly qualify it to be grouped with the family of circuit diagrams".<sup>34</sup> But the design, according to the judge, "*prima facie*, [was] neither a table or a compilation in the sense it is commonly understood".<sup>35</sup> At first glance, it may not be obvious that a work like the design is a compilation. However, as argued above, an analogy can be drawn between works such as the design and the circuit diagram in the *Anacon* case, and works such as the encyclopaedia which conventionally come to mind when the term "compilations" is used. There did not appear to be any arguments presented to the court on this issue, the absence of which may have prevented Rubin J from exploring further the possibility of classifying the design as a "compilation".

It should be noted, however, that it is not entirely clear that a work comprising artistic works and literary works would qualify as a compilation in Singapore.<sup>36</sup> The Copyright Act 1987 (which is modelled on the Australian Copyright Act 1968 as amended by the Copyright (Amendment) Act 1984) defines "literary work" as including a compilation, but it requires that the compilation be "expressed in words, figures or symbols (whether or not in a visible form)".<sup>37</sup> It has been argued that the range of compilations in which copyright subsists is limited to those "expressed in words, figures

available the schematic designs to the plaintiffs.

<sup>33</sup> The "non-expert" defence under s 69 raised by the defendants failed: see *infra*, note 63.

<sup>34</sup> *Supra*, note 7, at 345.

<sup>35</sup> *Ibid*, at 344.

<sup>36</sup> In the UK, this does not appear to be an issue: see *Copinger and Skone James on Copyright* (13th ed, 1991) at 20, where the authors opined that "[n]otwithstanding the inclusion in the definition of "literary work" of compilations, it is assumed this relates not only to compilations of literary material, but also to compilations of literary and artistic material and even of artistic material alone"; Laddie, Prescott and Vitoria, *The Modern Law Of Copyright And Designs* (2nd Ed, 1995) at 32, where the authors submitted that strip cartoons should be regarded as "compilations".

<sup>37</sup> See s 7(1): "literary works" include (a) a table or compilation, expressed in words, figures or symbols (whether or not in a visible form)..." The equivalent in the Australian Copyright

or symbols”.<sup>38</sup> Thus, a compilation of certain artistic material such as photographs may not qualify as a “literary work” since it is questionable whether photographs can be regarded as expression in “words, figures or symbols”.<sup>39</sup> On the other hand, the lines and planes constituting the drawings in engineering drawings fall within the dictionary meaning of the word “figures”, which includes “the form of anything as determined by the outline”.<sup>40</sup> Hence, it may be argued that, even if the Copyright Act 1987 protects a limited range of compilations, the design in the *Real Electronics* case can nevertheless qualify for protection in Singapore, being a compilation of drawings and technical details, all of which can be said to be “expressed in words, figures or symbols”.<sup>41</sup>

In any event, Rubin J was satisfied that the design fell within the general meaning of “literary works”, even if it was not a compilation. At the same time, the design was an “artistic work”. The judge could have meant that the technical information in the design as a component was a “literary work” and the artistic component was “artistic work”. Alternatively, this was a case where the information relating to the printed circuit board could be

Act 1968 is s 3(f).

<sup>38</sup> Monotti, “The Extent of Copyright Protection for Compilations of Artistic Works” [1993] 5 EIPR 156. Note, however, that in *Kalamazoo (Aust) Pty Ltd v Compact Business Systems Pty Ltd* (1985) 5 IPR 213, it was held by the Supreme Court of Queensland that accounting forms, which consisted of a few lines, columns, boxes and a few words were “an integrated compilation of words and drawings [and] is a compilation for the purposes of the Copyright Act [1968], and as such is within the definition of “literary work” under that Act” (at 232). Monotti explained this case on the basis that it was decided under the old definition of “literary work” in the Australian Copyright Act 1968 before the Copyright (Amendment) Act 1984 took effect. Under the old definition, “literary work” included “written table or compilation” and “writing” was defined as “meaning a mode of representing or reproducing words, figures or symbols in a visible form and written has a corresponding meaning”. Since the adjective “written” qualified only “tables” and not “compilations”, it was argued that, for the purposes of the new definition of “literary works”, the *Kalamazoo* case was not authority that compilations need not be “expressed in words, figures or symbols” to enjoy copyright protection.

<sup>39</sup> For the same reason, there is concern that multimedia products, which are in essence compilations of text, sound, film clips, photographs *etc.*, are not protected under the Copyright Act 1987: see Wei, “Multimedia and Intellectual and Industrial Property Rights in Singapore” (1996) 3 International Journal of Law and Information Technology 214 at 243.

<sup>40</sup> *The Oxford English Dictionary*. See also *The New Collins International Dictionary of the English Language* which defines “figures” as including “any combination of points, lines, curves or planes”. The word “figures” is not defined in the Copyright Act 1987. Note, however, the counter-argument that the word “figures” used in the context of the phrase “compilation, expressed in words, figures or symbols” may have a more restricted meaning, namely, numerical symbols.

<sup>41</sup> See Monotti, *supra*, note 38, at 158, where the author submitted that, in the *Kalamazoo* case, *supra*, note 38, the accounting forms in question would qualify as a “compilation” because the artistic elements of the accounting forms, namely, the lines, boxes and columns,

revealed through reading the technical details, and equally through the visual impact created by the drawings, so that the design as a whole was as much a “literary work” as an “artistic work”.

### III. SCOPE OF PROTECTION FOR ENGINEERING DRAWINGS

What is the appropriate scope of protection for works of dual-nature like the design and the circuit diagram? This question arises mainly because of the differing ambit of the reproduction right which is available in both literary copyright and artistic copyright.<sup>42</sup>

In the Singapore and UK copyright legislation, it is expressly provided that a 3-dimensional version of an “artistic work” in two dimensions constitutes a reproduction of the “artistic work”,<sup>43</sup> so that a reproduction of the 3-dimensional version of a 2-dimensional artistic work, if done without authorisation, is an infringement of the artistic copyright in the 2-dimensional artistic work. Since the statutory provision is specifically restricted to “artistic works”, it should follow that reproducing a 3-dimensional version of a “literary work” would not amount to an infringement of the literary copyright.<sup>44</sup> An explanation as to why the draughtsmen have not provided for such a right for literary copyright may lie in the application of the axiomatic principle in copyright law that copyright protects expression and not ideas, facts or information, *ie*, the idea/expression dichotomy:<sup>45</sup>

can be regarded as “symbols”.

<sup>42</sup> The other differences in the scope of protection for “literary works” and “artistic works” are not significant for the purposes of engineering drawings like the circuit diagram in *Anacon* and the design in *Real Electronics*. In Singapore, a comparison between ss 26(a) and 26(b) of the Copyright Act 1987 shows that “literary works” are accorded three more exclusive rights than “artistic works”: the public performance right, the adaptation right and the right to do certain restricted acts in relation to an adaptation of a “literary work”. The absence of the last two mentioned rights for “artistic works” is not material because the adaptation right subsisting in a “literary work”, as statutorily defined, has a very narrow application: see s 7(1) where the adaptation right in a “literary work” is confined to (a) the making of a “literary work” in a non-dramatic version into a version (whether in its original language or not) in a dramatic version, and *vice versa*; (b) the making of a version of the “literary work” being a computer program (whether or not in the language, code or notation in which the computer program was originally expressed) not being a reproduction of the work; (c) translating the “literary work”; and (d) making a version of the “literary work” in which the story or action is conveyed solely or principally by means of pictures. Similarly, “performance” being defined in s 22 as including “any mode of visual or aural presentation”, the value of the public performance right to the circuit diagram/design is limited.

<sup>43</sup> See s 15(3) of the Singapore Copyright Act 1987; s 17(3) of the UK Copyright, Designs & Patents Act 1988.

<sup>44</sup> This would be in accordance with the maxim used in interpreting statutes “*expressio unius est exclusio alterius*” (that which is expressed puts an end to that which is silent).

<sup>45</sup> This idea/expression dichotomy has no statutory basis in England and in Singapore. It is,

underlying every “literary work” (eg, a recipe for a cake) is information (eg, what goes into the cake) expressed in a certain manner, and to reproduce a three-dimensional version thereof is in fact to reproduce this information, so that a right to control such a reproduction amounts to a right to control this information. In any event, an interpretation which restricts such a right to “artistic works” only would be consistent with a line of cases where the general consensus was that a person making a rabbit pie in accordance with the recipe in *Mrs Beeton’s Cookery Book* does not infringe the literary copyright in that book.<sup>46</sup>

But when there is an overlap between artistic copyright and literary copyright, as in the circuit diagram/design, it might be argued that this “extra” aspect of the reproduction right in the artistic copyright also crosses over the boundary such that a circuit board reproduced from the circuit diagram/design can amount to an infringement of the literary copyright in the circuit diagram/design. This argument is nowhere better expressed than in the following passage of Laddie J’s judgment given in *Autospin*:<sup>47</sup>

The [plaintiffs’] argument ... [amounts to this:] copyright in a drawing can be infringed by reproducing it in a three dimensional form. It is possible to define any shape in words and letters. Therefore a design in a drawing can be defined equally accurately in non-graphic notation. In fact, many three dimensional articles are now designed on computers. A literary work consisting of computer code therefore represents the three dimensional article. Surely if it is an infringement of copyright in a two dimensional drawing to make a three dimensional article from it, it must follow that it should also be an infringement to produce the article from the equivalent literary work which contains the same design information and is as much a product of the author’s design skill.

however, considered “trite law” in England (*per* Lord Hailsham of St Marylebone in *LB (Plastics) Ltd v Swish Products Ltd* [1979] FSR 145 at 160). This principle has been accepted as part of Singapore’s copyright laws: see *Robert John Powers School Inc v Tessensohn* [1993] 3 SLR 728. See also Art 9(2) of the TRIPs Agreement, *infra*, note 70.

<sup>46</sup> See, eg, *Cuisenaire v Reed* [1963] VR 719 (making coloured rods in accordance with a method of teaching mathematics); *Brigid Foley Ltd v Elliott* [1982] RPC 433 (making garments in accordance with the instructions in knitting guides); *Interlego AG v Tyco Industries Inc*, *supra*, note 23, at 707 (*per* Lord Oliver: “It has always to be borne in mind that infringement of copyright by three-dimensional copying is restricted to artistic copyright ... To produce an article by following written instructions ... does not infringe the author’s copyright in his instructions.”); *Davis (J & S) (Holdings) Ltd v Wright Health Gp Ltd* [1988] RPC 403 at 414 (*per* Whitford J: “It may, no doubt, be true that you do not infringe copyright in a recipe by making a cake.”).

Although the copyright subject-matter in *Autospin* was not one which was both an “artistic work” and a “literary work”, the logic behind the argument for extending the ambit of the reproduction right in literary copyright applies equally, if not even more so, to a work like the circuit diagram in *Anacon* and the design in *Real Electronics* where the written technical details are almost inextricably linked to the drawings.

In *Autospin*, the plaintiffs had developed a design for an oil seal which was primarily in the form of drawings. They claimed artistic copyright only in this design.<sup>48</sup> They also claimed a separate literary copyright in charts containing critical dimensions for making the oil seals. It is this latter claim which is relevant for the discussion here. The plaintiffs alleged that the defendants had access to these dimensions,<sup>49</sup> and that they used these dimensions to make copies of oil seals. The plaintiffs argued that these oil seals were reproductions in three dimensions of the critical information from the charts and were infringements of the literary copyright in the charts as “compilations”. The plaintiffs referred to section 51 of the UK Copyright, Designs & Patents Act 1988, the material parts of which are as follows:

- (1) It is not an infringement of any copyright in a design document...recording or embodying a design for anything other than an artistic work or a typeface to make an article to the design...
  
- (3) “design” means the design of any aspect of the shape or configuration (whether internal or external) of the whole or part of an article, other than surface decoration; and

“design document” means any record of a design, whether in the form of a drawing, *a written description*,... data stored in a computer or otherwise. [emphasis added]

This provision was introduced into the 1988 Act to cut back on the scope of protection enjoyed in the shape or configuration of articles in certain

<sup>47</sup> *Supra*, note 8, at 698.

<sup>48</sup> As is normal in industrial copyright cases, the plaintiffs alleged that the defendants’ oil seal had been copied from plaintiffs’ oil seal which in turn was derived from the plaintiffs’ drawings. Thus, it was argued that the defendants’ oil seal indirectly reproduced the artistic copyright in the drawings. (Such indirect copying can amount to copyright infringement: see *King Features Syndicate Inc v O & M Kleeman Inc* [1941] AC 417). However, this claim failed because evidence showed that the plaintiffs’ oil seals were not manufactured from, and did not reproduce, these drawings. Therefore, the defendants, when they copied the plaintiffs’ oil seals, did not reproduce the drawings.

<sup>49</sup> The defendants were ex-employees of the plaintiffs. The plaintiffs claimed that the defendants had copied these dimensions from the charts onto pieces of paper or memorised them while

cases. For the purposes of this discussion, it is sufficient to note that, by virtue of section 51, it is not copyright infringement to reproduce an engineering article in accordance with the shape or configuration of the article as depicted in a drawing, or as described in written words (*ie*, a *written description*).<sup>50</sup> It was argued that the legislature must have thought that it is possible that such reproduction would infringe, not only the artistic copyright in the drawing, but also the literary copyright in the written description, and therefore section 51 was drafted to limit the scope of the latter type of infringement as well.

Attractive though the plaintiffs' arguments may be, Laddie J was against a general extension of the scope of copyright protection for "literary works". In his view, when the court has to decide whether a particular act constituted a reproduction of a copyright work, it must have regard to the nature of the copyright work in issue. In this case which involved a compilation, the court should ask the question: is it accurate to say that the alleged infringer's article is, from a common sense point of view, a reproduction of this particular type of literary work? In answering this question, he cautioned that "it would be potentially misleading to look over one's shoulder to see what the answer would be if the compilation had been an artistic work or even a different form of literary work".<sup>51</sup> On the facts, the judge found that the charts did not contain the critical dimensions. They contained instructions for the calculation of the critical dimensions, and as such said nothing about more than how an oil seal was to be constructed. He reaffirmed the traditional view that "just as it cannot be a reproduction of literary copyright in a recipe for a cake to make a cake to the recipe, so it is not reproduction to follow such mathematical instructions".<sup>52</sup>

The significance of the decision in *Autospin* lies in the judicial acceptance of the proposition that, for infringement purposes, a 3-dimensional article can in appropriate cases be said to be a reproduction of a "literary work". In fact, Laddie J gave an example of one such case: when a three-dimensional article is made from a data file in a computer (which qualifies as a "literary

they were still in the plaintiffs' employment.

<sup>50</sup> This is because the engineering article would not qualify as an "artistic work". Note that, where s 51 applies to prevent the enforcement of copyright in the "design document", there may be protection for the "design" under the "design right" provided in Pt III of the Copyright, Designs & Patents Act 1988.

<sup>51</sup> *Supra*, note 8, at 701.

<sup>52</sup> *Ibid.* The analogy to making a cake from a recipe was presumably a reference to Whitford J's example given in *Davis (J & S) (Holdings) Ltd v Wright Health Gp Ltd*, *supra*, note

work”)<sup>53</sup> which precisely defines the shape of the article.<sup>54</sup> This proposition can have far-reaching implications in the industrial sector where increasingly computer technology is being used to design the shape of engineering articles. Granted that the implications may be academic in many industrial copyright infringement cases, such as in *Real Electronics*,<sup>55</sup> because the engineering article usually resembles the 2-dimensional depiction in the engineering drawings, so that the question of infringement would be resolved with reference to the artistic copyright in the engineering drawings.<sup>56</sup> But there would be the odd case where this proposition might prove to be very useful for the plaintiffs. For example, in *Anacon*, the defendants’ circuit board<sup>57</sup> visually looked quite different from the circuit diagram, a fact which led to the finding that the circuit board did not reproduce the artistic copyright in the circuit diagram. In this case, since the circuit board was made with the aid of a computer into which the codes and symbols of the plaintiffs’ circuit diagram was fed, could it not be said that, from a common sense point of view, the defendants’ circuit board was a 3-dimensional reproduction of the “literary work” in the circuit diagram? The plaintiffs did not need to explore this possibility because Jacob J held that the defendants’ act of making the “net list” infringed the literary copyright in the circuit diagram. The judge was therefore not asked to decide if the act of the defendants in making the circuit board infringed the literary copyright in the circuit diagram.<sup>58</sup>

46.

<sup>53</sup> The data file stored in a computer would be a computer program, which is included in the definition of “literary work”: see s 3 of the UK Copyright, Designs & Patents Act 1988; s 7(1) of the Copyright Act 1987.

<sup>54</sup> *Supra*, note 8, at 701.

<sup>55</sup> See also *British Leyland*, *supra*, note 10.

<sup>56</sup> Note, however, the implications that might arise from the application of defences if the question of infringement is resolved with reference to the artistic copyright, as opposed to the literary copyright: see the discussion following, *infra*, note 59.

<sup>57</sup> In his judgment, Jacob J sometimes referred to the circuit board as “circuit” or “circuits”.

<sup>58</sup> But Jacob J did make this observation: “There is an argument for saying that the literary work is reproduced in the circuits [*ie*, the circuit boards] themselves, not because of the presence of the components in the circuits, but because in relation to each of the component there is also a written or coded indication of what it is. So that one can read the circuit as well as use it”: *supra*, note 6, at 663. It would seem that the defendants’ circuit board had written codes on it as well, codes which resembled what appeared on the plaintiffs’ circuit. Was the judge suggesting that the 3-dimensional circuit board *per se* was not a reproduction of the literary copyright in the circuit diagram? If so, was he adopting the “pre-*Autospin*” traditional view? Or was it because he thought that, from a common sense point of view, the circuit board could never be said to be a 3-dimensional reproduction of the circuit diagram? The difficulty with Laddie J’s judgment in *Autospin* of course is the uncertainty that inevitably arises when one’s common sense has to determine whether, in a particular case, a “literary work” can be regarded as having been reproduced in three



In Singapore, the chances of our courts adopting Laddie J's approach cannot be dismissed, given that the genesis of our Copyright Act 1987 can be traced to England;<sup>59</sup> many fundamental principles of English copyright law have found their way into our case law.<sup>60</sup> Caution may be needed, however, as the issue concerns extension of liability in infringement of literary copyright. The copyright legislation in Singapore and in the UK may be similar in that they both grant the reproduction right to "artistic works" and to "literary works" and they both expressly provide that the reproduction right in "artistic works" include the right to reproduce in three dimensions.<sup>61</sup> They both also contain provisions which cut back the scope of protection for the shape or configuration of articles such as engineering articles. In this regard, mention has already been made of section 51 of the UK Copyright, Designs & Patents Act 1988. The ambit of section 51 covered not just 3-dimensional reproductions of "artistic works", but also 3-dimensional reproductions of "literary works". As pointed out by the plaintiffs in *Autospin*, the scheme of the English act as a whole permits the extension in the reproduction right sought, even though such extension has not been expressly provided for, as in the case of "artistic works". Our Copyright Act 1987, however, does not have a provision equivalent to section 51. Instead, the cut-back measures take the form of three provisions. First, section 69 provides that this right is not infringed if the 3-dimensional object does not appear to persons who are not experts in relation to the object of that kind to be a reproduction of the "artistic work". This is often referred to as the "non-expert" defence. Second, section 74 (in summary) provides that this right is not infringed if the "artistic work" is a design registered, or registrable but not registered, under the UK Registered Designs Act 1949. Third, section 70 limits the duration of copyright to 15 years, where the "artistic work" has been industrially applied in Singapore or elsewhere. This is to be contrasted with the normal duration of artistic copyright which is the life of the author of the "artistic work" plus 50 years.<sup>62</sup> The wording of these provisions is such that they cannot apply to "literary works".

If the scope of protection for literary works in Singapore is extended to include a right to reproduce in three dimensions, there would be no limits

dimensions.

<sup>59</sup> The Copyright Act 1987 is modelled on the Australian Copyright Act 1968 which in turn is based on the UK Copyright Act 1956, the predecessor to the Copyright, Designs & Patents Act 1988.

<sup>60</sup> For example, the expression/idea dichotomy established in English cases was adopted by the High Court of Singapore in *Robert John Powers School Inc v Tessensohn*, *supra*, note 45.

<sup>61</sup> *Supra*, note 43.

on this right as those imposed by sections 69, 70 and 74 on a similar right given to artistic copyright. An anomalous situation can arise in such circumstances. In *Real Electronics*, for example, when Rubin J found that the defendants' circuit board was a reproduction of the artistic copyright in the design, the defendants relied on the "non-expert" defence in section 69. If they had succeeded on this defence, which they did not,<sup>63</sup> the plaintiffs would have failed in their claim for infringement of their artistic copyright in the design. The plaintiffs, however, would have succeeded in their claim for infringement of the literary copyright in the design if the defendants' circuit board could be said to be a 3-dimensional reproduction of this "literary work" since the option of raising section 69 would not be available to the defendants in relation to this claim. Two different results for the same infringing act. Further, in this case where the design has in all likelihood been industrially applied in Singapore or elsewhere, the copyright term of the design as an "artistic work" is only 15 years from the date of industrial application, but that of the design as a "literary work" would be the life of the author plus 50 years. Two different copyright terms for the same subject-matter. It can be argued that the drafters of the Copyright Act 1987 could not have intended such incongruities. Therefore, the scheme of the Copyright Act 1987 as a whole may not permit the interpretation of "reproduction", in relation to "literary works", to include 3-dimensional reproductions.

#### IV. CONCLUSION

The decisions in *Anacon*, *Real Electronics* and *Autospin* represent attempts to extend the scope of protection for "literary works" beyond their traditional boundaries. In this sense, they are merely following the trend in which copyright law is used by courts to redress what they perceived to be unfair competition. That such is the judicial inclination is expressly acknowledged by Laddie J in *Autospin*:<sup>64</sup>

The arguments advanced in support of a finding of infringement are logical but copyright law has been bedevilled by the too rigorous application of legal logic. Over the years extensions of the scope of copyright protection in the area of literary works are applied by parity of reasoning to artistic works and *vice versa*. Advances in relation

<sup>62</sup> See s 28 of the Copyright Act 1987.

<sup>63</sup> This was because the judge held that this defence applied where the three-dimensional object was manufactured from a two-dimensional "artistic work" and was not intended to cover cases where direct copying was involved, and in the case before him, the similarities between the defendants' circuit board and the plaintiffs' indicated that copying was direct.

to one type of copyright work are taken as having cleared the path for similar advances in relation to other types of copyright work. Furthermore many copyright cases involve the defendants who have blatantly stolen the result of the plaintiff's labours. This has led courts, sometimes with almost evangelical fervour, to apply the commandment "thou shall not steal". If that has necessitated pushing the boundaries of copyright protection further out, then that has been done. This has resulted in a body of case law on copyright which, in some of its further reaches, would come as a surprise to the draughtsmen of the legislation to which it is supposed to give effect.

In recent times, one of the ways in which English courts have pushed the boundaries of copyright protection further out, is to place less emphasis on the expression/idea dichotomy<sup>65</sup> in copyright law. Examples of the English courts blurring this dichotomy can be found in the expansive protection they have given to compilations of facts such as directories<sup>66</sup> and to computer programs,<sup>67</sup> and in *Anacon* itself when Jacob J held that "when the defendants came to make their net list they reproduced the *information which is the literary work* contained in the circuit diagram" (emphasis added).<sup>68</sup> As mentioned earlier, the dichotomy may be the reason why literary copyright does not include a right to reproduce the "literary work" in three dimensions.<sup>69</sup> Amidst this current judicial climate in which the application of the dichotomy is less than precise, if not totally ignored, it is perhaps not too surprising that certain works can now take on the dual status as "artistic works" and as "literary works", and literary copyright can now be infringed by a 3-dimensional reproduction of the 2-dimensional "literary work".

<sup>64</sup> *Supra*, note 8, at 700.

<sup>65</sup> *Supra*, note 45.

<sup>66</sup> For the more recent cases, see *Waterlow Directories Limited v Reed Informaion Services* [1992] FSR 409; *Waterlow Publishers Ltd v Rose* [1995] FSR 207. The controversy surrounding the protection given by English courts to compilations of facts heightened in 1991 when the US Supreme Court held in *Feist Publications, Inc v Rural Telephone Service Co* 18 USPQ 2d 1275 (SC 1991) that there was no copyright in a 'white-page' telephone directory. For an analysis of this controversy, see Ng-Loy, "Copyright Protection For Traditional Compilations Of Facts And Computerized Databases – Is *Sweat* Copyrightable?" [1995] SJLS 96.

<sup>67</sup> See *Ibcos Computers Ltd v Barclays Mercantile Highland Finance Ltd* [1994] FSR 275, where Jacob J dismissed the expression/idea dichotomy as an "aphorism...likely to lead to confusion of thought" (at 291). According to the judge, a defendant has infringed the copyright in a computer program if there was "overborrowing [by the defendant] of the skill, labour and judgment which went into the copyright work" (at 302).

<sup>68</sup> *Supra*, note 6, at 663.

In the absence of a general law relating to unfair competition in England and Singapore, it may be that such extensions of the boundaries of domestic copyright laws can be justified in the name of enforcing the “thou shall not steal” commandment. However, it should be borne in mind the obligations that Singapore has under the TRIPs Agreement which in Article 9(2) provides that “copyright protection shall extend to expressions and not to ideas, procedures, methods of operation or mathematical concepts as such”.<sup>70</sup> The question that must be asked is this: how well can these extensions of copyright protection stand up to the scrutiny by the rest of the international copyright community?

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<sup>69</sup> *Supra*, note 45, and the accompanying main text.

<sup>70</sup> TRIPs stands for “Trade-Related Intellectual Property Rights”.

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