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**THE PATENTS ACT 1977**

IN THE MATTER of Patent Applications  
numbered 8714826 and 8727868 in the  
name of Sharp Kabushiki Kaisha

**DECISION**

Application No 8714826, entitled "A Machine Translation System", was filed on 24 June 1987 and claimed priority from Japanese Patent Application No 61/152066 dated 27 June 1986. Application No 8727868, entitled "Translation Apparatus", was filed on 27 November 1987 and claimed priority from Japanese patent Applications Nos 61/284487 and 61/284488, both dated 28 November 1986. At substantive examination objection was raised on both applications that the claimed inventions were excluded from patentability by section 1(2)(c) of the Patents Act 1977 and since in neither case was the respective examiner persuaded to withdraw their objection a Hearing was appointed at the request of the applicant. Before the Hearing, on 29 July 1991, Mr Collins, an agent with Boulton, Wade & Tennant, the firm acting for the applicants, informed the office that he had been instructed not to attend the Hearing.

The Applications are concerned with the translation of sentences from a first language into a second language, as described from English into Japanese.

In the first case, Application No 8727868, when an input sentence in English has been translated into Japanese and displayed a user may highlight a selected word and have a list of synonyms displayed. He may then either select one of these synonyms as a replacement for the translated word or he may enter an additional synonym. The user may then instruct the machine to use the chosen word preferentially for the rest of the translation.

The single independent claim for consideration at the Hearing reads as follows:-

1. A translation apparatus for translating an inputted sentence of an original language into a sentence of a target language and for outputting the translated sentence as an outputted sentence, said translation apparatus comprising display means; indicating means for indicating on the display means a selected word contained in the inputted sentence; dictionary means for storing words corresponding to the words of the original language and the target language; output means, operatively connected to said dictionary means and said indicating means, for outputting to the display means translated equivalent words of the target language from said dictionary means corresponding to the selected word; input means for inputting a desired translated equivalent word corresponding to said selected word, said desired translated word not being already part of the output of the output means; replacing means, operatively connected to said output means and said input means, for replacing the translated equivalent of said selected word contained in the translated sentence with a translated equivalent word selected from the output of the output means or with said new translated equivalent word inputted by said input means; and user confirmation means, operatively connected to said replacing means, and selectable by the user of the translation apparatus to cause the apparatus to preferentially use said translated equivalent word used by said replacing means during future translation processes.

Objection under Section 1(2)(c) was first raised in the official letter of 12 May 1990 with the examiner relying on the precedent cases of Genentech Inc's Patent [1987] RPC 553 and Merrill Lynch's Application [1989] RPC 561. In essence the examiner's argument was that

1. a claim that relies for its inventiveness upon a computer program must achieve a technical advance over the prior art,
2. the present application is distinguished from EP 0175357 only by its program and
3. the resulting, albeit more accurate, translation is not considered a technical advance.

In his reply, on the applicant's behalf, the agent, Mr Collins, argued that, whilst the identification of a technical process as the subject matter of such a claim can be a sufficient condition for patentability, it is not a necessary one. Subsequently in his letter he compared the present application with the Vicom case - [1987] OJEPO 14 - stating:-

"... the apparatus of the present invention takes in data manipulates this data according to an algorithm and outputs the data which has been manipulated to the desired result which is a more natural translation. During data manipulation, provision is made in the apparatus for operator machine interaction. This allows the operator to provide the "fine tuning". In the present application the input data is in the form of binary coded characters forming sentences. In the Vicom case, the input data takes the form of binary coded representations of the luminance of pixels forming an image or a screen. Data manipulation in the apparatus of the present application takes the form of an algorithm which results in binary coded data representing characters in a translated language corresponding to a translation of the source language. In Vicom the data was manipulated in accordance with an algorithm to provide binary coded data representing pixels of a manipulated image.

Thus in Vicom, it was said that the method provided for "the physical manipulation of electrical signals representing the picture". There are close parallels between the data processing performed in the Vicom case and the present case, since the input data is an electrical signal representing the input sentence. There seems no difference between manipulation of binary coded electrical signals representing characters to the manipulation of binary coded electrical signals representing a picture on a screen.

It can therefore be seen that the process carried out in the apparatus of the present invention is analogous to that carried out by the Vicom method and the process is a technical process carried out within a digital processor requiring manipulation of electrical signals. In fact, the present invention would appear to have more technical merit than that of Vicom since provision is made for machine operator interaction, thus allowing an operator to influence how the apparatus performs the translation."

Mr Collins also argued that the invention was not encompassed by the exclusion of Section 1(2)(c), "a scheme, rule or method for performing a mental act":-

"It is contended that the current application is directed towards apparatus which performs technical steps in receiving data in the form of a language, manipulating the data to provide output data in a second language, which is a translation of the first language. The apparatus also provides means allowing an operator to select a word, display equivalent translated words and either replace the translation of the selected word with a word already present in the dictionary of the apparatus or input a new equivalent into the dictionary. Means are also provided which can be selected to control the translation of following sentences such that the selected equivalent is

preferentially used. There is therefore provided by the apparatus a large degree of machine operator interaction with the aim of providing the best translation possible. In view of the interaction provided, it is contended that the present invention can in no way be directed towards "a scheme, a rule or method for performing a mental act ... as such". The translation process undertaken by the translation apparatus has no parallels in the process of translation that would be undertaken by a human translator. The decision by the European Technical Board of Appeal regarding International Business Machines application (Decision T38/86) states that "the use of technical means to carry out a method for performing mental acts, partly or entirely without human intervention may render such a method a technical process or method and therefore an invention within the meaning of Article 52(1) EPC". The contribution to the art of the current apparatus is the ability of an operator to intervene during the translation process undertaken by the translation apparatus to "fine tune" the translation to provide a more natural translation and provide control of the nuance of translation. The provision of the means "selectable for preferentially using said translated equivalent word used by said replacing means during future translation processes" greatly reduces the degree of intervention necessary when a suitable alternative word has been selected and considered appropriate for the translation of following sentences. The prior art translation apparatus does not provide for such control of the translation of following sentences by a translation apparatus. It is contended that such control cannot be considered to relate to "a scheme, rule or method for performing a mental act ... as such".

The examiner was not persuaded by these arguments and, quoting from Aldous J's decision in the Gale case (unreported, decision dated 22 January 1990),

"... it is always important to consider whether the claimed invention is part of a process which is to be used in providing a technical result. If it is, then the claim cannot be said to be an invention relating to no more than one of the disqualified matters."

he argued in response to what I shall call the "technical effect" objection:-

"Applying this to the apparatus claimed in the present application it appears to be an apparatus having conventional computer hardware (see for example EP 0175357) which is programmed in a particular way for a language translation process to provide a more convenient method of operation for the human translator interacting with the computer.

Such a process appears not to be barred from patentability by reason of the use of a conventional computer as the medium by which it is carried out (Nicholls LJ, Court of Appeal decision in the Gale case - unreported dated 13 December 1990), where the computer instructions represent a technical process.

However, the Technical Board of Appeal of the European Patent Office appears to have decided in the following cases that linguistics do not involve a technical process:"

He then listed decisions T65/86, T121/86 and T52/85.

In response to the second argument, the "mental act" objection, he relied on the reasoning of Aldous J in Wang Laboratories Inc Application (unreported, decision dated 21 March 1990) in which the judge answered a submission by Counsel for the applicants that the words of Section 1(2)(c) only excluded schemes, rules or methods which were intended to be performed and were capable of being performed in the human mind, as follows:-

"... He submitted that the word "for" introduced a subjective element. Thus as claim 1 had as its basis steps which were not intended to be carried out by a human, in that the human mind would not go through those steps, the basis of the claim was not excluded matter.

The word "for" does not, in my view, introduce a subjective element. It means "for the purposes of". The fact that the scheme, rule or method is part of a computer program and is therefore converted into steps which are suitable for use by a person operating the computer does not matter. What is excluded from being patented is a scheme, rule or method for performing a mental act, whatever mental steps or process is involved. As I pointed out in Gales's Application, it is a question of fact to be decided in each case whether the claimed invention is more than a claim to an invention for a disqualified matter. Just as a claim to a disk containing a program can be in fact a claim to an invention for a computer program, so can a claim to steps leading to an answer be a claim to an invention for a method for performing a mental act. The method remains a method for performing a mental act, whether a computer is used or not. ... The method may well be different when a computer is used, but to my mind it still remains a method for performing a mental act, whether or not the computer program adopts steps that would not ordinarily be used by the human mind".

In his letter of 25 April 1991 requesting the appointment of a Hearing, Mr Collins argued that the field in which the invention lay was that of man/machine interfaces and that the invention thus involved a contribution to the art in a field not excluded from patentability. In respect of the Examiner's search for a "technical effect" he stated:-

"It should once again be pointed out that the purpose of searching for such a "technical effect" or the solution to

a "technical problem" should merely be to aid the identification of cases that should not be excluded from patentability under Section 1(2). Such consideration was applied in the Vicom Decision (T208/84), in order to avoid the application being refused on the grounds that it related to a computer program and a mathematical method. A "technical effect" should not be viewed as a necessary condition for patentability. Following the Vicom case, the EPO Technical Board of Appeal in Decision (T366/87) have said that "the presence in the subject matter of non-technical elements only makes it non-patentable if it does not also include other elements of a technical nature". It further went on to say "therefore in determining whether the subject matter is an invention within the meaning of the EPC, it is necessary to assess the subject matter as a whole and to determine whether it uses technical means or produces technical effects". It is contended that following these arguments, the present application clearly "uses technical means". A translation apparatus is provided which can interact with a user to provide a superior translation."

In respect of the examiner's first objection, I do not accept Mr Collins' submission that the claim is allowable because it includes "technical means". I do not consider that this in itself is sufficient to ensure patentability - in the EPO Technical Board of Appeal Decision T22/85 it is stated:-

"8. For carrying out in practice an activity excluded as such under article 52(2)(c) EPC some means may be used which themselves could be qualified as technical eg a computer controlled by appropriate software. A claim directed to an excluded activity but at the same time containing such technical features would not appear to be unallowable under all circumstances. However the mere setting out, as in the present case, of the sequence of steps necessary to perform the activity in terms of



functions or functional means to be realised with the aid of conventional computer hardware elements does not import any technical considerations and can, therefore, neither lend a technical character to that activity nor to the claimed subject-matter considered as a whole, no more than solving a mathematical equation could be regarded as a technical activity when a conventional calculating machine is used and thereby overcome the exclusion from patentability.

9. The contribution to the art and the effects obtained are only in the area of the excluded activity and the true nature of the invention remains the same, whether or not a technical terminology is used in expressing it.

10. In the opinion of the Board it cannot have been intended by the Contracting States to the EPC that express exclusions from patentability could be circumvented simply by the manner in which the invention is expressed in a claim."

This, I consider, reinforces my view that something more than mere "technical means" is required.

Mr Collins has also contended that, for a claim to a conventional computer containing a novel program to be patentable it is not a necessary condition that some technical advance over the prior art should be present. However, in Merrill Lynch's Application [1989] RPC 561 Fox LJ stated, referring to the Technical Board of Appeal of the European Patent Office in the Vicom case:-

Finally, the Board expressed the view, in paragraph 16, that:

"Generally speaking, an invention which would be patentable in accordance with conventional patentability criteria should not be excluded from

protection by the mere fact that, for its implementation, modern technical means in the form of a computer program are used. Decisive is what technical contribution the invention as defined in the claim when considered as a whole makes to the known art".

The position seems to me to be this. Genentech decides that the reasoning of Falconer J is wrong. On the other hand, it seems to me to be clear, for the reasons indicated by Dillon LJ, that it cannot be permissible to patent an item excluded by section 1(2) under the guise of an article which contains the item - that is to say, in the case of a computer program, the patenting of a conventional computer containing that program. Something further is necessary. The nature of that addition is, I think, to be found in the Vicom case where it is stated: "Decisive is what technical contribution the invention makes to the known art". There must, I think, be some technical advance on the prior art in the form of a new result (eg a substantial increase in processing speed as in Vicom).

I agree with the examiner that the claim as a whole relates to a conventional computer containing a novel program for translating from a first language to a second and therefore, for it to be patentable, a technical contribution must be present.

Mr Collins has sought to draw parallels between the data processing in this application and in the Vicom case, but in this respect I am mindful of the fact that, in the latter, the original main claim directed to a method of convolving a data array was refused and it was only when the claims were restricted to digitally processing images that they were allowed, ie when a technical advance could be identified.

I do not accept Mr Collins' argument that the field in which this invention lies is the field of man/machine interfaces. Computer

systems generally have provision for user intervention and in, for example, IBM/Semantically related expressions T52/85, a user can himself highlight a word and cause a list of synonyms or antonyms to be displayed. Any man/machine interaction in the present application is for the sole purpose of improving the translation and consequently I am of the opinion that the invention lies squarely in the field of linguistics.

Whilst no definition of what might be considered a technical contribution exists I am of the opinion that the field of linguistics is not a technical field. This terminology was introduced by the Technical Board of Appeal of the EPO and the following linguistic cases were refused by them:-

IBM/Abstracting documents T22/85

IBM/Reading age T38/85

IBM/Spelling checker T121/85

IBM/Semantically related expressions T52/85

IBM/Homophone checker T65/86

In, for example, the IBM/Spelling checker case the Board held:-

"5.3 ... Apparently, all these functions relate merely to the linguistic meaning of the data stored, scanned, compared, transferred etc in coded form, namely to their property of either being or not being 'real' word characters, and if they are, to their property of either being 'correct' or 'wrong' characters of the word.

It follows that the data processing defined by the functional features of the individual system elements relates to the linguistic evaluation, on the basis of linguistic rules, of data representing linguistic information, for the purpose of achieving a linguistic result, and that the actual processing involves only conventional techniques of storing, etc coded data.

Therefore neither in a field outside linguistics nor outside conventional computer functioning any contribution is made by the present invention as claimed."

In my opinion the same considerations apply in the present case and consequently I do not consider that Mr Collins is helped by Decision T366/87 of the EPO Technical Board of Appeal since I cannot identify any "other elements of a technical nature" - the data being processed derives its significance from linguistic considerations only and such data is not technical data. No technical advance is achieved by the invention as claimed nor does it solve a technical problem.

I now turn to the second objection under Section 1(2) - that the invention relates to a scheme, rule or method for performing a mental act.

In Merrill Lynch [1989] RPC 561 Fox LJ stated:-

"Now let it be supposed that claim 1 can be regarded as producing a new result in the form of a technical contribution to the prior art. That result, whatever the technical advance may be, is simply the production of a trading system. It is a data processing system for doing a specific business, that is to say, making a trading market in securities. The end result, therefore, is simply 'a method ... of doing business', and is excluded by Section 1(2)(c). The fact that the method of doing business may be an improvement on previous methods of doing business does not seem to me to be material. The prohibition in Section 1(2)(c) is generic; qualitative considerations do not enter into the matter. The section draws no distinction between the method by which the mode of doing business is achieved. If what is produced in the end is itself an item excluded from patentability by section 1(2), the matter can go no further. Claim 1, after all, is directed to 'a data processing system for making a

trading market'. That is simply a method of doing business. A data processing system operating to produce a novel technical result would normally be patentable. But it cannot, it seems to me, be patentable if the result is a prohibited item under section 1(2).

In Gale, Aldous J stated:-

"... that the first task of the court is to construe the claim as that is where the invention is defined."

As I stated above, I consider that the present claimed invention relates to a known computer programmed to translate from a first language to a second. In my opinion translation is a mental act. Therefore by analogy with the Merrill Lynch case I would argue that what is produced in the end is itself an excluded item. It does not matter that the translation is an improvement on previous translations. It does not matter (per Aldous J in the Wang case) that the basic steps for effecting the translation in the computer are not the steps performed by the human mind. Consequently, it seem to me that, irrespective of any technical improvement achieved by the invention over the prior art, since the result of the invention is excluded then the invention is excluded.

In the second case, Application No 8714826, when an input sentence is too complicated for proper translation, a partial translation of an input sentence is outputted and an indication is given to the user that the original text has not been completely analyzed.

The single independent claim for consideration at the Hearing reads as follows:-

1. A translation apparatus for translating a source language into a second language, said apparatus comprising buffer means for storing one or more source words; table means for storing dictionary information on the source

language and the second language, grammatical information on the source words and translated words, and translation rules having a tree structure for control of the translation from the source language to the second language; a translation module for analyzing and translating the source words, comprising dictionary look-up means to provide from said table means, stored grammatical information for each source word inclusive of part of speech of the word from said table means, syntax analyzing means responsive to said dictionary look-up means to provide a grammatical relation from said table means and form a syntax analysis tree, language conversion means for analyzing the structure of the language of the source words from said syntax analysis tree and determining a corresponding tree for the words of the second language, and language generating means for generating one or more words of the second language; and display means responsive to said translation module for displaying a translation or partial translation and any source words remaining untranslated; said translation module including partial translation means responsive to the syntax analyzing means failing to complete syntax analysis of the source words and forming only a partial syntax analysis tree, to analyze and translate the source words (or as many of them as possible) associated with the partial syntax analysis tree; and flag means which is turned off when the syntax analysis is started and is turned on when said syntax analyzing means cannot complete syntax analysis of the source words, calling the attention of a user of a translation apparatus to the fact that the source language cannot be analyzed when the result of the partial translation is displayed on said display means.

In this application the objection under Section 1(2)(c) was first raised in the second examination report under Section 18(3) in which the examiner, again relying on the precedent cases of Genentech [1987] RPC 553 and Merrill Lynch [1989] RPC 561, argued

" ... it seems that, if a claim which relies at least in part for its inventiveness upon an algorithm or a computer program is not to be excluded by Section 1(2), the inventions claimed must achieve a technical advance over the prior art. .

In the present case, the system claimed is embodied as a program in a computer, and the advance over the prior art, which is known to include computers programmed to automatically effect language translation, is that, when the machine is unable to complete a translation, it outputs both the partially completed translation and the section which it is unable to translate. It does not appear that such an advance may be termed "technical"."

As in the first case the agent likened the present case to Vicom and argued, in respect of the "technical effect" objection, that the identification of a "technical process" may be a sufficient condition for patentability but that it was not an essential one.

In respect of the "mental act" objection he contended

"... the current application is directed towards apparatus which performs technical steps in receiving data in the form of a language, manipulating the data to provide output data in a second language which is a translation of the first language. The data manipulation formed by the apparatus includes forming "a syntax analysis tree". This, as described in the specification, is the syntax structure of the text which takes the form of a tree structure. The novel technical feature of the apparatus of the present invention is the partial translation means which gives the machine the capability of providing a partial translation of the input text when it is recognised that a full syntax analysis tree cannot be formed. The partial translation corresponds to sections of text which correspond to branches of the syntax analysis tree. It is contended that

the steps undertaken by the translation apparatus are not the steps that would be undertaken by a translator performing a mental act in order to effect a translation. The decision by the European Technical Board of Appeal regarding International Business Machines' application (Decision T38/86) states that "The use of technical means to carry out a method for performing mental acts, partly or entirely without human intervention, may render such a method a technical process or method and therefore an invention within the meaning of Article 52(1) EPC". The contribution to the art of the current application is in the partial translation means which provides for detection of whether or not a full syntax analysis tree has been formed: a process which has no parallel in a mental process performed by a translator. The steps performed by the partial translation means are particularly adapted to utilise the full capabilities of the apparatus which are quite different from those of a human being. Prior art translation means have not had the capability of outputting a partial translation when the analysis of the syntax of a sentence breaks down. The prior art machines merely output the complete untranslated sentence thus requiring that an operator translates it manually. Clearly the provision of an output partial translation during the translation steps undertaken by the machine provide for enhanced operation. It is therefore contended that the current application does not relate to "a scheme, rule or method for performing a mental act" as such.

The examiner rejected these arguments relying on the above quoted extracts from the Gale and Wang decisions. He also contended:-

"Reverting to the qualification "technical", Aldous J referred to the qualification as being "a term of art", which it is suggested means that we can not expect to find it defined anywhere. The best guide that there is in the present context seems to be the following EPO decisions:-



T22/85     abstracting documents  
T52/85     semantic listing  
T121/85    spelling checker  
T38/86     reading age  
T65/86     homophone errors

From these decisions two facts emerge: firstly that in the opinion of the EPO linguistics does not relate to a "technical subject", and secondly that whether a claim is drafted as a method or system, or as hardware has little bearing upon patentability. This latter fact is also evident from Gale's decision.

When judging whether an invention is "technical" or not one must apparently look at the overall result achieved. In the present application the result lies in the field of linguistics. It seems to make little sense to argue that a single feature of the invention is technical, as is apparently being done in the letter, and in any event the "syntax analysis tree" which is singled out does not seem to be a technical feature.

It is argued that the present application is sufficiently analogous to the invention in Vicom to be allowable in the sense that the present invention provides for the manipulation of electrical signals representing characters rather than electrical signals representing pictures on a screen. This analogy is sound but the inference drawn from it does not appear so because it ignores the fact that the essence of the difference between the present invention and Vicom lies in what the electrical signals represent."

In response to this argument in his letter requesting this Hearing, the agent Mr Collins filed amended claims, the claims before me at this hearing, which purported to bring out the structural features of the apparatus. He argued:-

It should be noted that Figure 1 of the drawings shows that the translation apparatus can comprise a CPU 1, a main memory 2, CRT 3 and keyboard 4 of a standard computer. In addition, a translation module 5 with table means 6 is provided. The translation apparatus does not therefore merely comprise a standard computer with computer software loaded therein. The apparatus comprises a buffer means, table means, a translation module and display means. The translation module includes partial translation means to provide a partial translation and a flag means which is turned on when a partial translation has been effected calling the attention of a user of the translation apparatus to the fact that the source language cannot be analyzed, when the result of the partial translation is displayed on the display means.

Thus amended claim 1 of this application is directed towards a translation apparatus which can effect a partial translation when a complete translation is not possible, and can draw to the user's attention the fact that a partial translation has been effected. The apparatus thus provides for a man machine interface which can utilise efficiently the capabilities of digital processing apparatus, whilst allowing a user to be informed if a complete translation is not possible. The claimed invention cannot therefore be said to be "a scheme, a rule or method for performing a mental act ... or a program for a computer" as excluded by Section 1(2)(c). Claim 1 of this application is directed towards apparatus which has functional features clearly illustrated in the description. Therefore, a computer program it certainly is not. In view of the interaction provided between the apparatus and a user, it cannot be said that the claim is directed towards a mental process.

Since the subject matter of the claimed invention is not specifically excluded by Section 1(2), the objection to the

patentability of the present application should fail. Referring to the EPO decision T65/86, the Technical Board of Appeal stated that "The intention of the EPC is to permit patenting where an invention involves a contribution to the art in a field not excluded from patentability". The field in the present case is that of man/machine interfaces. Therefore, such a contribution is present and the objections raised by the Examiner are untenable."

In respect of the "technical effect" objection, he reiterated his view that a technical effect should not be viewed as a necessary condition for patentability, but argued that in any event he considered that claim 1 was directed towards the solution of a technical problem - providing apparatus capable of effecting a partial translation when a full translation is not possible and indicating this fact to a user. He directed the examiner's attention to EPO Decision T115/85.

I do not accept Mr Collins' argument that the novel technical feature of the apparatus is the partial translation means. Partial translation comes about as the result of the novel program. The features of the apparatus are all features found in known computers, for example the computer of EP 0175357. Nor do I consider that the "translation module" comprises any more than the conventional storage of the computer. "Flag means" are conventional programming tools. Furthermore, I do not consider that the decision in EPO T115/85 helps his case because it is pointed out that, in that application, the indications relate to prevailing conditions in devices of the system. In the present case the indications relate to the state of intellectual data. My attention has been directed to EPO Decision T38/86, but this decision states:-

"it appears to be the intention of the EPC to permit patenting only in those cases in which the invention involves a contribution to the art in a field not excluded from patentability.

... In the present case, all the operations performed are conventional from a technical point of view and amount to no more than the processing of abstract data, for a non-technical purpose, by means of computer programs running on conventional hardware."

As in the first case, I am of the opinion that the claim as a whole relates to a known computer programmed to translate from a first language to a second and, therefore, for it to be patentable, a technical contribution must be present. I find myself unable to isolate such a contribution. As in the EPO decision referred to above, I consider that all the operations performed are technically conventional and relate to the processing of data for a non-technical purpose.

For the reasons given above I do not accept Mr Collins' argument that the field is the field of man/machine interfaces. Furthermore, as in the first case, I consider that what is produced in the end is a translation, albeit an improved translation, and that translation - and for that matter partial translation - is a mental act. Mr Collins has argued that the manner in which translation is effected is different from the manner in which it has previously been effected in translation systems and different from the manner in which a translator would perform the operation. Whilst I accept that the manner may be different, following the judgement of Aldous J in the Wang case this does not appear significant. Each method of translation remains a mental act whether or not the computer program adopts steps different from another program for translating and whether or not the computer adopts steps that would not ordinarily be used by the human mind. Consequently, as in the first case, I consider that since the result of the invention is excluded, the invention is excluded.

Therefore I support the examiners' objections that the inventions claimed in Application Nos 8714826 and 8727868 are excluded from patentability by virtue of Section 1(2)(c) and I consider that,

on the basis of the specifications filed, it is not possible to draft allowable claims. Both applications have gone beyond the period for putting them in order for grant and consequently each application is deemed to have been refused by the Comptroller at the end of that period, ie 27 December 1990 in the case of Application No 8714826 and 28 May 1991 in the case of Application No 8727868.

Any appeal from this decision should be lodged within a period of 6 weeks of the date of this decision as stated below.

Dated this 28<sup>th</sup> day of August 1991



Mrs J A Wilson  
Principal Examiner



**THE PATENT OFFICE**

