



## PATENTS ACT 1977

APPLICANT	Hunter IP Limited
ISSUE	Whether patent application GB2000020.4 complies with the requirements of sections 1(1)(d) and 1(2)(c)
HEARING OFFICER	B Micklewright

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## DECISION

### Introduction

1. Patent application number GB 2000020.4 is a national phase application for international application WO2018/226106, filed on 9 August 2018, with an earliest priority date of 9 June 2017, and published under the Patent Cooperation Treaty (PCT) on 13 December 2018. It has been allocated the GB publication number GB2577459A.
2. In the initial exam report the examiner raised objections that the application was excluded from patentability as a computer program as such. Objections relating to plurality, novelty, inventive step and clarity were also raised, and the updating of the search was deferred until such time as the initial objections were overcome. A response to this initial examination was received on 6 December 2021 which included amendments to the claims. The examiner however maintained the patentability objection and offered a hearing. The matter came before me at a video hearing on 14 September 2022. The applicant was represented by Dominic Elsworth of Hargreaves Elsworth. Also attending was my assistant Alison Illing.
3. I am grateful for the skeleton arguments which were provided to me before the hearing. I confirm that I have taken account of these in reaching my decision, as well as the submissions made during the hearing. I have also reviewed the correspondence on file.

### The invention

4. The invention relates to a method of controlling writer fluency guidance based on a piece of prepared text. The method involves receiving a piece of text with

multiple sentences, using a machine learning algorithm to characterise the sentences as one of a sentence style type from a list of types defined in claim 1, creating a data set based on the sentence style types and outputting writer fluency guidance based on the data set.

5. The application provides examples as to how this method can be used to improve the writing ability of the author. For example it can be used as a tool to help teachers determine student ability.
6. Claims 1 and 15 are independent. They do not differ in substance, and it will be sufficient for the purposes of this decision to consider claim 1, which states:

1. A method of controlling writer fluency guidance based on a piece of prepared text, the method comprising operating a processor to perform the steps of:

- receiving the piece of text prepared by the writer, wherein the text comprises a plurality of sentences;

- applying a trained machine learning algorithm to the received sentences to thereby characterise each sentence as one of a sentence style type from a discrete list of defined sentence style types;

- aggregating a characterisation data set based on the characterised sentence style types;

- controlling the output of writer fluency guidance based on the aggregated characterisation data set; and

- wherein the discrete list of sentence style types consists in each of:

- Simple Sentence;
- Adverb Sentence;
- Preposition Sentence;
- W-Start Sentence;
- Explore the Subject Sentence;
- Very Short Sentence;
- Em-Dash Sentence;
- Ing-Start Sentence;
- Ed-Start Sentence;
- Serial comma sentence;
- The Semi-Colon Sentence;
- Question Sentence;
- Power Sentence;
- Conjunction Sentence;
- Colon and Flow Sentence;
- Emphatic Ending Sentence;
- Developmental flow-on sentence;
- Undefined Sentence; and
- Incomplete Sentences.

## The law

7. Section 1(2) of the Patents Act 1977 (“the Act”) states:

1(2) It is hereby declared that the following (amongst other things) are not inventions for the purpose of the Act, that is to say, anything which consists of-

- (a) A discovery, scientific theory or mathematical method;
- (b) A literary, a dramatic, musical or artistic work or any other aesthetic creation whatsoever;
- (c) A scheme, rule, or method for performing a mental act, playing a game or doing business, or a program for a computer;
- (d) The presentation of information;

but the foregoing provisions shall prevent anything from being treated as an invention for the purposes of the Act only to the extent that a patent or application for a patent relates to that thing as such.

8. The provisions of Section 1(2) were considered by the Court of Appeal in *Aerotel Ltd v Telco Holdings Ltd and Macrossan’s Application*<sup>1</sup> where a four step test was set out to decide whether a claimed invention was excluded from patent protection:

- (1) Properly construe the claim;
- (2) Identify the actual contribution;
- (3) Ask whether it falls solely within the excluded subject matter;
- (4) Check whether the actual or alleged contribution is actually technical in nature.

9. It was stated by Jacob LJ in *Aerotel* that the test is a re-formulation of and is consistent with the previous ‘technical effect approach with rider’ test established in previous UK case law. Kitchen LJ noted in *HTC v Apple*<sup>2</sup> that the *Aerotel* test is followed in order to address whether the invention makes a technical contribution to the art, with the rider that novel or inventive purely excluded matter does not count as a ‘technical contribution’.

10. Lewison J in *AT&T/CVON*<sup>3</sup> set out five signposts that he considered to be helpful when considering whether a computer program makes a technical contribution.

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<sup>1</sup> *Aerotel Ltd v Telco Holdings Ltd and Macrossan’s Application* [2006] EWCA Civ 1371

<sup>2</sup> *HTC Europe Co Ltd v Apple Inc* [2013] EWCA Civ 451

<sup>3</sup> *AT&T Knowledge Venture/CVON Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)

Lewison LJ reformulated the signposts in *HTC v Apple* in light of the decision in *Gemstar*<sup>4</sup>. The signposts are:

- i) Whether the claimed technical effect has a technical effect on a process which is carried on outside the computer.
- ii) Whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run.
- iii) Whether the claimed technical effect results in the computer being made to operate in a new way.
- iv) Whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer.
- v) Whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.

## **Analysis**

11. To determine whether the claimed invention is excluded as a computer program as such I will follow the approach set out by the Courts in *Aerotel*.

### *(1) Properly construe the claim*

12. The examiner and the applicant agreed that there are no particular issues arising out in the construction of the claims.

13. At the hearing, Mr Elsworth drew particular attention to the term “consists in each of” when referring to the sentence types. He noted that this means that this includes everything in the list and nothing additional. He highlighted that the sentence type list is an essential part of the invention. I agree that the claim is limited to use of the specific list of sentence style types specified in the claim.

### *(2) Identify the actual contribution*

14. In their pre-hearing report, the examiner identified the contribution as “...a method of generating writer fluency guidance based on a piece of text prepared by the writer, comprising, categorising, using a machine learning algorithm, each sentence in the text into a discrete list of sentence style types, and basing the guidance on an analysis of the sentence type data”.

15. Mr Elsworth argued that the invention considers written text in a way that is different to the way a teacher would. He noted that some of the sentence style types in claim 1 are new. He said that the contribution is providing means for literacy to be improved by either giving guidance to individuals to help them improve literacy without a teacher or giving guidance to teachers to enable them

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<sup>4</sup> *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

to help more people than they would otherwise be able to do. He also said the list of sentence types, as a combination of known and new types, is essential to the contribution. He stated that, as well as the contribution set out in the pre-hearing report, the sentence types and the machine learning algorithm should also be included.

16. I accept the applicant's submission that the specific choice of the combination of known and new sentence types is part of the contribution. I note that the claim does not specify any details in relation to the machine learning algorithm and such details do not therefore form part of the contribution.

17. I therefore consider the contribution made by claim 1 to be:

A method of generating writer fluency guidance based on a piece of text prepared by the writer comprising characterising, using a machine learning algorithm, each sentence in the text into a sentence style type selected from a specified discrete list of sentence style types specified in the claim, some of which are known and some of which are new, aggregating a characterisation data set based on the characterised sentence style types, and outputting guidance based on the aggregated characterisation data set.

*(3) & (4) Ask whether it falls solely within the excluded subject matter & Check whether the actual or alleged contribution is actually technical in nature*

18. For convenience I will consider steps (3) and (4) together.

19. At the hearing Mr Elsworth discussed the relevance of the *AT&T* signposts to the assessment of whether the present invention is excluded from patentability. I will therefore consider each signpost in turn.

20. Both the examiner and Mr Elsworth agree that there is not a technical effect on a process carried out outside the computer. I also agree and signpost (i) is not satisfied. Signpost (ii) is also not satisfied, as there is no effect at the architecture level of the computer.

21. Mr Elsworth argued that the specific list of sentence types specified in the claim is new, as some of the individual sentence types included in the list, and therefore the algorithm is new, resulting in the computer operating in a new way in accordance with signpost (iii). He also said that the invention is more than computerising what a teacher may do, it is a new way of analysing text, as per the contribution.

22. I do not agree with Mr Elsworth's submissions because the computer itself does not operate in a new way as a computer. Rather the computer program in which the algorithm is encoded is new. The computer operates conventionally in executing the instructions which cause the invention to operate. This signpost refers to the operation of the computer in a more fundamental way, rather than to

the operation of any program running on a computer. Signpost (iii) is not therefore satisfied.

23. With regard to signpost (iv), Mr Elsworth submitted that the computer when running the program is a more useful and therefore more effective product because it allows the contribution to be implemented. Again, I do not agree with this assessment because signpost (iv) refers to the computer running more efficiently and effectively on a more fundamental level. In the present case the computer itself runs in a standard manner and any improvements in effectiveness lie in the improved algorithm, not in an improved computer. Signpost (iv) does not therefore point to a technical contribution.
24. In relation to signpost (v), the examiner considers that that the problem being addressed is "...that of automatically outputting writer fluency guidance based on an analysis of sentences written by the writer". The examiner considers this problem to be overcome rather than circumvented but also considers the problem to relate solely to analysing text data using a computer program to improve writing style. In their view improving writing style is not a technical task. Mr Elsworth submitted that the text is divided up into difference sentences and that dividing anything up is a technical task. Additionally, running the algorithm on these sentences is technical, as is aggregating the data.
25. Having considered Mr Elsworth's submissions, I am nevertheless in agreement with the examiner's view that signpost (v) is not applicable to this case. I do not consider the analysis of text data in order to output writer fluency guidance to be a technical problem, and the solution specified in the contribution is also not technical in nature. Analysis of text is not, in general terms, a technical problem and its particular context in this invention, namely to output writer fluency guidance, is not technical. Moreover the mere use of machine learning to characterise each sentence does not impart a technical contribution. The problem being solved is not therefore a technical problem. Nor is the proposed solution.
26. The examiner noted the judgment in *Autonomy*<sup>5</sup> where in paragraph 40 Lewison J states: "*In my judgment...automatic text analysis, comparison and results generation is a paradigm example of a case in which the contribution falls squarely within excluded matter, i.e. a program for a computer*". At the hearing, Mr Elsworth submitted that this statement is not applicable to the present invention as it is significantly different to the invention in *Autonomy*. He submitted that the present invention is more than matching text with images, it is the development of a discrete list of sentences within a piece of text.
27. I agree that the specific details of the present invention are different to those in *Autonomy*, which related to analysing text, searching for similar or relevant content to the text, and displaying links to that content. Nevertheless, the present

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<sup>5</sup> *Autonomy Corp Ltd v Comptroller General of Patents, Trade Marks & Designs* [2008] EWCH 146 (Pat)

invention is, in substance, a means for automatically analysing text, comparing the text with, in this case, a list of sentence style types so as to identify the sentence style types of sentences within the text, and generating results, in this case in the form of fluency guidance. It seems to me that the comment made by Lewison J in *Autonomy* is relevant to the present case which therefore also “falls squarely within excluded matter” as a program for a computer as such.

28. Finally, Mr Elsworth directed me to the written submissions made in his letter of 6 June 2022 with respect to *Vicom*<sup>6</sup>. These submissions noted the statement in *Vicom* that says “*Generally claims which can be considered as being directed to a computer set up to operate in accordance with a specified program (whether by means of hardware or software) for controlling or carrying out a technical process cannot be regarded as relating to a computer program as such and thus are not objectionable...*” and said that the program carried out by the present invention is technical due to the analysis that is carried out by the algorithm. For the reasons set out above, I do not consider the program is technical as I have found that, in the present case, analysis of the text and outputting writer fluency guidance in the manner claimed in claim 1 is not a technical process. Therefore *Vicom* is not relevant.

### **Conclusion**

29. I have found that the claimed invention lies solely in the excluded field of a program for a computer as such and therefore does not comply with the requirements of sections 1(1)(d) and 1(2)(c) of the Act. I therefore refuse the application under section 18(3).

### **Appeal**

30. Any appeal must be lodged within 28 days after the date of this decision.

### **B Micklewright**

Deputy Director, acting for the Comptroller

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<sup>6</sup> *Vicom Systems Inc* T 0208/84 [1987] 1 OJEP0 14