



# Alice and ‘something more’: the drift towards European patent jurisprudence

Siva Thambisetty\*

London School of Economics and Political Science, UK

\*Corresponding author. E-mail: [s.thambisetty@lse.ac.uk](mailto:s.thambisetty@lse.ac.uk)

On the face of it, the doctrinal lines of disagreement around ‘subject matter eligibility’ in US law and ‘the invention requirement’, as it is known in Europe, could not be further apart. The US statute is silent as to what does not constitute patentable subject matter, while the European Patent Convention (EPC) takes a much more formal approach. Unpatentable subject matter is listed, categorized either as things not to be regarded as inventions under Article 52(2);<sup>1</sup> or as exceptions to patentability under a small number of umbrella contexts.<sup>2</sup> Professor Burk’s incisive analysis of the two-pronged test of subject matter eligibility in *Alice*<sup>3</sup> and its place within recent decisions by the SC<sup>4</sup> is monitorly in three particular aspects of direct relevance to the many decisions of the European Patent Office (EPO) on the ‘invention’ requirement. First, the use and development of a common denominator across excluded categories. Second, the seeping of patentability criteria into eligibility. Third, the nascent focus on the language of the claims that so far the US Supreme Court has claimed. I will address each of these points in turn, comparing the direction of legal ideas around patent eligibility in both systems of law, before drawing conclusions.

## THE USE OF COMMON DENOMINATORS

The EPC does not define ‘invention’ but Article 52(2) lists several categories which are not patentable ‘as such’. The obvious interpretative option given a list of categories is to define and construe each category in cases with relevant subject matter. For instance, you would expect some definition of ‘business method’ or ‘computer programs’

<sup>1</sup> Article 52(2), EPC is replicated in S 1(2) of the UK Patents Act. See *Aerotel Ltd v. Telco Holdings* [2006] EWCA Civ 1371.

<sup>2</sup> Article 53 (a), (b) and (c). Also see Lionel Bently et al., *Exclusions from Patentability and Exceptions and Limitations to Patentees’ Rights*, in 1–100; 15/3 WIPO STANDING COMMITTEE ON THE LAW OF PATENTS SCP.

<sup>3</sup> *Alice Corp. v. CLS Bank International*, 134 S. Ct. 2347 (2014).

<sup>4</sup> Dan L. Burk, *Dolly and Alice*, J. L. & BIOSCI., 1, 21, DOI:10.1093/jlb/lsv042.

or 'mental processes' or 'mathematical method' to be developed in cases that could reasonably be said to involve such subject matter. This is in general the path taken in US law where much judicial energy has been spent on defining the outer boundaries of abstract ideas, laws of nature, products of nature, and mental processes.<sup>5</sup>

The less obvious interpretative solution given a list of difficult-to-define categories is to ask what makes them suitable for inclusion under the same umbrella provision. European authorities have long been convinced that it is the requirement of 'technical'.<sup>6</sup> All the exceptions listed within Article 52(2) are not patent eligible because they are not 'technical'. This deflective move has facilitated focus on the different ways in which subject matter can be said to be 'technical' and therefore patentable. Significantly 'technical' as a freestanding, fairly neutral idea also removes the need to explore the normative foundations of the list of exceptions in Article 52(2).

The EPO now considers mathematical formulae implemented by computer simulation as a modern 'technical' method even if the invention does not incorporate a physical end product.<sup>7</sup> Business methods are exceptions to patentability under the EPC<sup>8</sup> but if such applications include claims that specify computers, computer networks, conventional programmable apparatus, or even a storage medium carrying the program then because it is a mix of technical and non-technical features,<sup>9</sup> the claim will be examined as a 'computer-implemented invention'. In other words, the use of general purpose apparatus or even a flash drive that executes some steps of a business method scheme means the invention has acquired the all-important 'technical character'. Additionally, while computer programs are exceptions to inventions, a 'computer-implemented method' is not<sup>10</sup> and is examined distinct from the computer program corresponding to that method. When combined with a 'technical' requirement that is evanescent at one end of the spectrum and mundane at the other, one can de facto get a comfortable degree of protection around a computer program under European law.

The UK has maintained an eroding bulwark<sup>11</sup> against this approach, despite a statutory requirement to harmonize examination practice with the EPO. Following the four-step test formulated by the UK Court of Appeal in *Aerotels*, under Article 52(2) claimed inventions that can be said to fall 'as such' within one of the exceptions are not patentable even if it fulfills the technical requirement in one of the many ways specified by the EPO. At the EPO the questions are differently ordered. If the claimed invention is technical, the fact that it also falls into one of the excepted categories is not an impediment to patentability.<sup>12</sup>

<sup>5</sup> The USPTO memo Formulating a Subject Matter Eligibility Rejection and Evaluating the Applicant's Response to a Subject Matter Eligibility Rejection (May 4, 2016) is a clear exemplar arising from this approach, <http://www.uspto.gov/sites/default/files/documents/ieg-may-2016-memo.pdf> (last accessed July 5, 2016).

<sup>6</sup> The 'technical' requirement cannot be traced to a single statutory provision in the EPC but surfaces in Rules 42(1)(a) and (c) and Rule 43(1) of the Implementing Regulations of the European Convention on the Grant of Patents; and is now accepted by the EPO's Patent Examination Guidelines as a further 'implicit' requirement of patentability. See EPO Patent Examination Guidelines, Part G.

<sup>7</sup> T-1227/05 (Schaltkreissimulation I / INFINEON TECHNOLOGIES) 2006.

<sup>8</sup> Article 52(2) (c) 'Schemes, rules and methods for performing mental acts, playing games or doing business'.

<sup>9</sup> For instance, see T-0424/03 (Clipboard formats I/MICROSOFT).

<sup>10</sup> G3/08 (Referral by the EPO in relation to a point of law).

<sup>11</sup> Aerotel, *supra note* 1, and Symbian Ltd's Application [2009] RPC 1. But also see AT&T Knowledge Ventures/Cvon Innovations v. Comptroller General of Patents [2009] EWHC 343 (Pat).

<sup>12</sup> See *supra note* [10].

To a European patent lawyer therefore the two-pronged test in *Alice* will feel familiar because it parallels what I call the common denominator approach, where a relatively content-free concept unburdened by normative principles<sup>13</sup> is introduced whose presence allows subject matter to escape one of the ineligible categories. According to *Alice*, if 'the claimed invention involves a prohibited category then under the second prong of the test analysis shifts to whether the inventor has added "something more" which might constitute an "inventive concept" beyond an abstract idea, law of nature or (presumably) a product of nature.' The cognitive shift here is to move away from trying to demarcate what is or is not a 'law of nature' or 'abstract idea', or 'product of nature' and focus instead on the positive presence of some, as yet undefined, inadequately explored positive requirement—'something more'.

Contrary to what Professor Burk ventures, if we speculate that both *Myriad* cDNA and gDNA (not just gDNA) fit one of the prohibited categories, namely product of nature, they must then be considered under the second prong. Informed by the doctrinal evolution of the 'technical' test in European patent law and the common denominator lens, it is possible to come up with a different view of how the second prong may in fact fit the analysis in *Myriad*. If cDNA fulfills 'something more', we have to assume it is not because of the 'isolation' from nature test which, unlike US law, remains central to what makes discoveries eligible for patents in Europe.<sup>14</sup> When discoveries become patentable in European law (because they have been isolated from nature or some 'technical' process has been applied to them), they become eligible even if the method of putting them to use is not novel or is obvious.<sup>15</sup> So cDNA being a product of 'the most unimaginative and routine laboratory procedures' can from this perspective still fulfill the 'something more' requirement.

In fact discoveries in European law—the closest category to 'product of nature'—are treated as 'soft exclusions'.<sup>16</sup> Although on the face of it you cannot patent your discovery, you can patent a useful artifact or process that you were able to devise once you had made your discovery. In other words the discovery itself being the new and inventive feature of the invention, the 'technical requirement' (the 'something more'), can be met by routine features of the inventions.

Applying the same approach, it is just as likely that gDNA does in fact pass the first prong, carried there by ignoring the structural differences of the gDNA molecule from those found in the cell, just as the deletion of the introns are ignored in the case of cDNA. The informational identity with native DNA ensures however that gDNA fails at the second prong and does not meet the 'something more' requirement. This reading does not bring us closer to understanding what distinguishes a product of nature from one that is not because of the 'diametrically opposed readings of the importance of differences in structure or coding'.<sup>17</sup> Speculating that both gDNA and cDNA fall or fly based on the second prong of the test, however, ideationally closes the doctrinal gap between how patent eligibility is approached in US and European law.

<sup>13</sup> A fair inference given that the pre-emption question is treated as inherent in *Alice*'s two-part framework in both *OIP Technologies v. Amazon*, 788 F.3d 1359 (Fed. Cir. 2015) and *Ariosa Diagnostics, Inc. v. Sequenom Inc.*, 788 F.3d 1377 (Fed. Cir. 2015).

<sup>14</sup> Article 3(2) Directive 98/44/EC on the Legal Protection of Biotechnological Inventions [1998] OJ L213/13.

<sup>15</sup> CFPH LLC [2005] EWHC 1589 (Pat).

<sup>16</sup> A term first used by Prescott J in *id.*

<sup>17</sup> Burk, *supra note 4*, at [4].

## PRIOR ART AND INHERENT PATENTABILITY

There are times when the technical character test conflates the invention requirement with patentability,<sup>18</sup> much as Professor Burk fears may happen given the 'inventive concept' content being mooted for the second prong of the two-step test in *Alice*. In EPO practice the technical requirement threshold tends to be met fairly easily and the analysis then shifts to the inventive step where most trivial inventions ought to fail the non-obviousness criterion. In the UK, because the technical requirement test is applied in a more robust way, perversely it can lead to subject matter analysis doing the work of patentability.

In *Lantana Ltd v The Comptroller General of Patents, Design and Trade Marks*<sup>19</sup> the UK Court of Appeal rejected claims to a data transfer method that was essentially a file retrieval system based on email because it made no technical contribution. In substance, this was because the claim was held to relate to software running on conventional computers connected by a conventional network. Transmission of data on the internet was part of the prior art, and the invention was held to fall under excluded subject matter. No novelty or inventive step objection was raised by the UK Intellectual Property Office.

Part of the problem arises from the second step of the *Aerotels* decision which requires identifying 'the contribution' made by the invention. 'It is an exercise in judgement probably involving the problem said to be solved, how the invention works, what its advantages are. What has the inventor really added to human knowledge, best sums up the exercise.'<sup>20</sup> This formulation of the test, and the way it was applied in *Lantana*, appears to co-opt prior art in deciding 'what has been added to human knowledge' and this could well be echoed in the 'inventive concept' test arising from *Alice*.

The confusion between the eligibility or the invention requirement and questions of novelty and inventive step is indicative of the ambiguous doctrinal content of this question<sup>21</sup> in both systems of law. In the European system hard cases on inherent patentability raise difficult-to-answer questions relating to both the normative basis of the requirement for inherent patentability and the nature of the requirement itself.<sup>22</sup> Going by the European experience, the temptation to draw on other parts of the patent statute will be difficult to resist.

Historically, a critical juncture in Europe on the invention requirement came with the move from 'technical contribution to the known art' to 'technical character' or 'technical effect' in the years following the failed patentability Directive in Europe.<sup>23</sup> One version of the so called 'contribution' approach made location of the inventive step pivotal to the question of patent eligibility—if it resided in the excluded subject matter

<sup>18</sup> Overtly the Enlarged Board of the EPO has made clear that technical character should be assessed without regard to the prior art but this can be difficult to achieve, and has not always been the case. G3/08.

<sup>19</sup> [2014] EWCA Civ 1463.

<sup>20</sup> *Aerotels*, *supra note* 1, at [43].

<sup>21</sup> Burk, *supra note* 4, at [17].

<sup>22</sup> 'In particular they illustrate the difficulty not only in identifying what makes a subject matter (for example) technical, but also in stating with confidence that inventions *are* technical, and *why* the properties constitutive of a technical process or artefact establish a subject matter's inherent suitability for a patent.' JUSTINE PILA, THE REQUIREMENT FOR AN INVENTION IN PATENT LAW, (2010).

<sup>23</sup> COM (2002)/0047/COD Proposal for a Directive of the European Parliament and of the Council on the patentability of computer-implemented inventions.

(non-technical subject matter) the invention was not patentable; if the inventive step was located in technical subject matter, then it was patentable.<sup>24</sup> The use of 'technical' not unsurprisingly led directly to some of the most entrenched disagreements about patent eligibility in European law. In *Aerotels*, Justice Jacob details at least six different approaches to the interpretation of Article 52(2) including one that he termed as 'simply not intellectually honest'.<sup>25</sup>

### CLAIM LANGUAGE

There are many strands to the technical effect or character test but in its present form it attempts to steer clear of novelty and inventive step by distinguishing between the 'technical' elements and the 'non-technical' elements. The eligible invention is only patentable if the technical elements are novel and inventive. Applying the common denominator lens to 'something more', a key question for future decisions will be, once an invention passes the second prong of the *Alice* test, whether novelty and inventive step will be applied to the invention as a whole including the patent ineligible elements or only to the 'something more' or the part that supplies the 'inventive concept'. Under European law the two elements of the invention are treated differently, spawning a fractured approach to claim language that puts the draftsman's skill center stage.

At the EPO, as a matter of examination practice, the separation of technical and non-technical elements does not end with just the eligibility question but flows through to the inventive step question. Where the elements are mixed, each feature is evaluated to see if it contributes to the technical character of the claimed subject matter, which then becomes a matter to be assessed under inventive step.

A step-by-step analysis of technical and non-technical elements is likely to impact on drafting to ensure that the inventive elements of the inventions are tied as directly as possible to the technical elements of the invention.<sup>26</sup> If the EPO finds that excluded subject matter has been included in the claims making it impossible to search prior art, then it can invite applicants to make a statement indicating the subject matter to be searched<sup>27</sup>, providing further opportunity for the applicant to direct the EPO to the technical elements in the claims.

Minssen and Schwartz's introduction of the Federal Circuit's decision in *Sequenom*<sup>28</sup> into our discussion<sup>29</sup> is an opportunity to further demonstrate how European law has relied on claim language to further the technical requirement and in the process hollow out exceptions and exclusions. There are two hypothetical objections to inherent patentability in Europe given the patent application in *Sequenom*—that the main claim is a discovery or that many of the subsequent claims are in essence claims to diagnostic methods that are explicitly excluded in the EPC in Article 53.

<sup>24</sup> *Aerotels*, *supra note 1*, at [26].

<sup>25</sup> *Id.* at [27].

<sup>26</sup> Rule 43(1) of the Implementing Guidelines says 'Claims must be drafted in terms of the "technical features of the invention".'

<sup>27</sup> Rule 63 Implementing Guidelines.

<sup>28</sup> *Ariosa Diagnostics Inc. v. Sequenom Inc.*, 788 F.3d 1377 (Fed. Cir. 2015).

<sup>29</sup> T. Minssen & R. Schwartz, *Separating Sheep from Goats: A European View on the Patent Eligibility of Biomedical Diagnostic Methods*, J. L. & BIOSCI., 1, 8, DOI:10.1093/jlb/lsw019.

As the authors point out in the parallel Technical Board of Appeal decision on the same application, inherent patentability was not even in question.<sup>30</sup> However, had the objection been raised, the central discovery here is unlikely to have faced a serious threat to patentability because it remains a 'soft exclusion'. The second hypothetical objection lies in the reasonable description of some of the claims as 'diagnostic methods'. Diagnostic methods for humans and animals have a long history of being prohibited from patentability in Europe.<sup>31</sup> EPO practice requires these to be claimed using 'diagnostic method steps'—broadly, the examination phase, comparison, finding of significant deviation, and the decision phase.<sup>32</sup>

The Examination Guidelines stipulate that the claims must include all of these phases in order to be a true 'diagnostic method' (and therefore not patentable). There is a triple negative here that is put to great use—"if all the phases are not present then it is not a diagnostic method and is therefore not excluded". To patent a diagnostic method, all you have to do is avoid these phases in sequence in the claims, which will not be hard to do as they are in fact a construct that can be sidestepped by the patent applicant either by showing that not all the stipulated phases are reflected in his claim<sup>33</sup> or by showing that even though all the phases are present in his claim one or more of them are 'not practiced on/perform on/do not interact with a human or animal body';<sup>34</sup> or amount to a 'technical' phase. The result is the creation of multiple loopholes in the law that can be exploited by all but the most unskilled patent draftsman.<sup>35</sup>

## CONCLUSION

To a European patent lawyer the 'something more' of *Alice* is comfortingly familiar—not because it is the path to greater clarity but because the confusion following in the wake of the technical requirement has been with us for so long. There is nothing as yet to suggest that the US SC will fully embrace what I have termed the 'common denominator' approach, or that such an embrace will inevitably lead to conflation with novelty and inventive step or a lamentable reliance on claim language. But it seems likely. So, far from threatening the global convergence of patentability standards,<sup>36</sup> I believe the common denominator approach gives us access to an alternate coherence: a vision where two systems of law that could not be more different on the face of it are being driven to similar analytical mechanisms because both have failed to lay the normative foundations of patent eligibility.

<sup>30</sup> Case T-146/07 of Dec. 13, 2011 (Non-invasive prenatal diagnosis/ISIS INNOVATION LTD).

<sup>31</sup> It mirrors the history of the exclusion of methods of medical treatment. See T. Piper, *A Common Law Prescription for a Medical Malaise*, in THE COMMON LAW OF INTELLECTUAL PROPERTY: ESSAYS IN HONOUR OF DAVID VAVER 143, 160 (Catherine Wai-Man Ng, Lionel Bently and Giuseppina D'Agostino eds., 2010).

<sup>32</sup> Paragraph 4.2.1.3 of the Examination Guidelines, [http://www.epo.org/law-practice/legal-texts/html/guidelines/e/g.ii\\_4.2\\_1.3.htm](http://www.epo.org/law-practice/legal-texts/html/guidelines/e/g.ii_4.2_1.3.htm) (last accessed July 5, 2016).

<sup>33</sup> In G1/04 OJ 2006, 334 the Enlarged Board felt there was no risk of this because Article 84 EPC requires an independent claim to recite all the essential features which are necessary for clearly and completely defining an invention [6.2.4].

<sup>34</sup> *Id.*

<sup>35</sup> I discuss how text in claims can be manipulated to generate the legitimacy of patentability standards in *Textualisation as Mode of Persuasion in Patent law and What it Means for Legitimacy*, 7 LSE L., SOC'Y & ECON. WORKING PAPER (2015), [https://www.lse.ac.uk/collections/law/wps/WPS2015-07\\_Thambisetty.pdf](https://www.lse.ac.uk/collections/law/wps/WPS2015-07_Thambisetty.pdf) (last accessed July 5, 2016).

<sup>36</sup> Minssen & Schwartz, *supra* note 29, at [6].