INTERPRETING PATENT CLAIMS: SOME THOUGHTS ON THE UK *KIRIN-AMGEN* DECISION

In patent infringement cases, what falls to be determined is where the rights of the patentee end and where non-infringing use for third parties begin. Invariably, this involves ascertaining the scope and ambit of the patent claim. This article articulates some thoughts, both generally and in the specific context of Singapore, on the recent House of Lords' pronouncements in *Kirin-Amgen Inc v Hoechst Marion Roussel Limited* [2005] RPC 9 on patent claim interpretation.

Paul **QUAN** Kaih Shiuh*
LLB (Hons) (National University of Singapore).

TEO Guan Siew*
LLB (Hons) (National University of Singapore).

I. Introduction

1 For intellectual property rights ("IPRs") to be meaningful and not ring hollow to rights-owners, the ambit and scope of these rights cannot be given an unduly restrictive interpretation, which would otherwise result in mere fig-leaf protection. The length and width of protection have to be sufficiently attractive to encourage intellectual property owners to go public with and seek protection for their intellectual property, and to eventually part company with their intellectual property when the protection period expires and falls into the public domain. At the same time, an overly generous interpretation that results in wide and indeterminate IPRs can be ill afforded. IPRs are, by their very nature, true property rights, and they must therefore possess

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the quintessential hallmark of certainty.[1] The ambit and scope of IPRs have to be certain so that third parties "know the exact boundaries of the area within which they will be trespassers",[2] and can then reasonably be expected to chart their course to avoid infringing upon those rights. The proper interpretation of the ambit of IPRs therefore involves, understandably, a delicate balancing exercise.

2 This article is concerned with that exercise in the specific context of patent law, which largely seeks to protect inventions. To determine whether there is patent infringement, one must first determine the scope of the claimed invention, which in turn involves interpreting the patent claims. The patent claims are the means by which the patentee informs those skilled in the art the extent of the monopoly that he is claiming in respect of his invention, by defining clearly and with precision the essential features of that invention for which he is seeking protection.[3]

3 This article focuses on the interpretation of patent claims, and the recent House of Lords decision in *Kirin-Amgen Inc v Hoechst Marion Roussel Ltd*[4] in that regard. Part II first provides a general overview of the law governing patent claim interpretation in the UK, up until *Kirin-Amgen*. Part III then discusses some aspects of the *Kirin-Amgen* decision, and the discussion follows on in Part IV but from a local perspective.

II. Overview

4 Central to modern-day patent claim interpretation in the UK is arguably s 125 of the Patents Act 1977,[5] which in turn is modelled after Art 69 of the European Patent Convention ("EPC").[6] Section 125(1) of

1 As Lord Wilberforce aptly put it, before a right or an interest can be admitted into the category of property, it must be "definable, identifiable by third parties, capable in its nature of assumption by third parties, and have some degree of permanence or stability": see *National Provincial Bank Ltd v Ainsworth* [1965] AC 1175 at 1248.

2 *Electric & Musical Industries Ld v Lissen Ld* [1939] 56 RPC 23 ("*EMI*") at 39 (*per* Lord Russell of Killowen).

3 *Ibid*. A claim, and it alone, defines the monopoly; and the patentee is under a statutory obligation to state in the claims clearly and distinctly what is the invention which he desires to protect; the office of a claim is to define and limit with precision what it is which is claimed to have been invented and therefore patented: see also *Harrison v The Anderston Foundry Company* (1876) 1 App Cas 574.

4 [2005] RPC 9 ("*Kirin-Amgen*").

5 Patents Act 1977 (c 37) (UK).

6 Convention on the Grant of European Patents, signed in Munich, Germany on 5 October 1973.

the Patents Act 1977 essentially provides that an invention for a patent is to be defined by the patent claim read with the rest of the specification:

> For the purposes of this Act an invention for a patent for which an application has been made or for which a patent has been granted shall, unless the context otherwise requires, be taken to be that specified in a claim of the specification of the application or patent, as the case may be, as interpreted by the description and any drawing contained in that specification, and the extent of the protection conferred by a patent or application for a patent shall be determined accordingly.

Article 69(1) of the EPC states this in simpler and clearer terms:

> The extent of the protection conferred by a European patent or a European patent application shall be determined by the terms of the claims. Nevertheless, the description and drawings shall be used to interpret the claims.

5 Section 125(3) of the Patents Act 1977 goes on to state that the Protocol on the Interpretation of Art 69 of the European Patent Convention ("the Protocol") shall apply for the purposes of s 125(1) of the Patents Act 1977 as it applies for the purposes of Art 69 of the EPC. The Protocol provides some guidance as to how Art 69 of the EPC, and in turn s 125(1) of the Patents Act 1977, should be construed:

> Article 69 should not be interpreted in the sense that the extent of the protection conferred by a European Patent is to be understood as that defined by the strict, literal meaning of the wording used in the claims, the description and drawings being employed only for the purpose of resolving an ambiguity found in the claims. Neither should it be interpreted in the sense that the claims serve only as a guideline and that the actual protection may extend to what, from a consideration of the description and drawings by a person skilled in the art, the patentee has contemplated. On the contrary, it is to be interpreted as defining a position between these extremes which combines a fair protection for the patentee with a reasonable degree of certainty for third parties.

It follows that interpreters of a patent claim should not, on the one hand, give the wordings of the claim their strict literal meaning, and should read the claim together with the rest of the specification. The rest of the specification should not be employed only when ambiguity in the claim exists. On the other hand, the rest of the specification cannot be used to enlarge the claim beyond what the patentee actually intended. Article 69 of the EPC envisions a measured approach to patent claim interpretation, which ultimately aims to provide fair protection for the patentee, whilst also affording reasonable certainty to third parties.

6 Prior to the advent of the Patents Act 1977 and the EPC, the common law governed patent claim interpretation, and was typified by a strict interpretation of the claim.[7] What was not claimed was disclaimed.[8] The limits of what was claimed fell to be determined by the language of the claim and not elsewhere.[9] Thus, a patentee who described an invention obtained no monopoly unless he did so in the claim.[10] The words of the claim were given their literal or textual meaning, regardless of the context and background in which they were used. Unless the words were ambiguous, the court would not otherwise read in words or seek recourse to the rest of the specifications to extend or narrow the scope of the monopoly set by the plain words of the claim. In the words of Viscount Radcliffe,[11] the patentee had committed himself to the unequivocal description of what he claimed to have invented, and must submit to be judged by his own action and words (having been assumed to have carefully selected the wording of the claim to put him in as strong a position as his expert advisers thought attainable or advisable).

7 It was not until the seminal House of Lords decision in *Catnic Components Limited v Hill & Smith Limited*[12] that the approach to interpreting patent claims underwent a sea change. Lord Diplock advocated a "purposive construction" of patent claims, where the crucial question that had to be answered by a court when interpreting patent claims was:[13]

> [W]hether persons with practical knowledge and experience of the kind of work in which the invention was intended to be used, would understand that strict compliance with a particular descriptive word or phrase appearing in a claim was intended by the patentee to be an essential requirement of the invention so that *any* variant would fall outside the monopoly claimed, even though it could have no material effect upon the way the invention worked. [emphasis in original]

He then elaborated on how that question could be answered:[14]

> The question, of course, does not arise where the variant would in fact have a material effect upon the way the invention worked. Nor does it

7 David J Brennan, "The Evolution of English Patent Claims as Property Definers" [2005] IPQ 361.
8 *EMI*, *supra* n 2, at 39.
9 *Ibid*.
10 *Ibid*.
11 *C Van Der Lely NV v Bamfords Limited* [1963] RPC 61 at 78.
12 [1982] RPC 183 ("*Catnic*").
13 *Ibid*, at 243.
14 *Ibid*.

> arise unless at the date of publication of the specification it would be obvious to the informed reader that this was so. Where it is not obvious, in the light of then-existing knowledge, the reader is entitled to assume that the patentee thought at the time of the specification that he had good reason for limiting his monopoly so strictly and had intended to do so, even though subsequent work by him or others in the field of the invention might show the limitation to have been unnecessary. It is to be answered in the negative only when it would be apparent to any reader skilled in the art that a particular descriptive word or phrase used in a claim cannot have been intended by a patentee, who was also skilled in the art, to exclude minor variants which, to the knowledge of both him and the readers to whom the patent was addressed, could have no material effect upon the way in which the invention worked.

8 Subsequently, the *Catnic* approach to interpreting patent claims was further explained by Hoffmann J (as he then was) in *Improver Corporation v Remington Consumer Products Limited*.[15] Hoffmann J formulated the *Catnic* approach with a convenient set of three questions ("the *Improver* questions"):[16]

> If the issue was whether a feature embodied in an alleged infringement which fell outside the primary, literal or acontextual meaning of a descriptive word or phrase in the claim ("a variant") was nevertheless within its language as properly interpreted, the court should ask itself the following three questions:
>
> (1) Does the variant have a material effect upon the way the invention works? If yes, the variant is outside the claim. If no –
>
> (2) Would this (i.e. that the variant had no material effect) have been obvious at the date of publication of the patent to a reader skilled in the art. If no, the variant is outside the claim. If yes –
>
> (3) Would the reader skilled in the art nevertheless have understood from the language of the claim that the patentee intended that strict compliance with the primary meaning was an essential requirement of the invention. If yes, the variant is outside the claim.
>
> On the other hand, a negative answer to the last question would lead to the conclusion that the patentee was intending the word or phrase to have not a literal but a figurative meaning (the figure being a form of synecdoche or metonymy) denoting a class of things which included the variant and the literal meaning, the latter being perhaps most perfect, best-known or striking example of the class.

15 [1990] FSR 181 ("*Improver*").
16 *Ibid*, at 189.

According to Hoffmann J,[17] the first two questions (*ie*, whether the variant would make a material difference to the way the invention worked and whether this would have been obvious to the skilled reader) are questions of fact. The answers to those questions are used to provide the factual background against which the specification must be construed. It is the third question which raises the question of construction, and therefore arguably the most crucial.

9 The *Catnic-Improver* approach was widely accepted and applied in patent infringement cases in the UK, until it suffered a major setback in *PLG Research Limited v Ardon International Limited*.[18] There, the English Court of Appeal effectively declared the approach, which it characterised as the common law approach to constructing patent claims, to be irrelevant. This was purportedly done to give effect to the new s 125(1) of the Patents Act 1977 that had to be interpreted in accordance with what the Protocol required. The court felt that if the *Catnic* approach was the same as what the Protocol required, then that approach was unnecessary; if it was not, then the approach was dangerous. The court directed that attention should be focused on the requirements of the Protocol and the developing European jurisprudence in this regard, and not on deciphering the precise meaning of Lord Diplock's words in *Catnic*, now a visage of the common law before 1977.[19]

10 As recently as 1998, however, a differently constituted Court of Appeal in *Hoechst Celanese Corporation v BP Chemicals Limited*[20] took a completely opposite view. Aldous LJ emphatically stated that it was "now settled" that the correct approach to patent claim interpretation was that expounded by Lord Diplock in *Catnic* and as explained by Hoffmann J in *Improver*. According to Aldous LJ, the approach enabled the court to arrive at a result which provided fair protection for the patentee and

17 *Id,* at 189–190.
18 [1995] FSR 116 ("*PLG*").
19 *Ibid*, at 133.
20 [1999] FSR 319 ("*Hoechst*") at 324.

afforded reasonable certainty to third parties as required by the Protocol.[21]

11 Since the differing views of the Court of Appeal, the *Catnic* approach had attracted supporters and detractors in the English courts. *Kirin-Amgen*, an authoritative decision emanating from the House of Lords on the proper interpretation of patent claims in accordance with the Protocol, is therefore much needed and welcomed.

III. The *Kirin-Amgen* decision

12 The case arose out of a patent dispute relating to the production of erythropoietin ("EPO"), a hormone made in the kidney that stimulates the production of red blood cells by the bone marrow. Kirin-Amgen Inc ("Kirin-Amgen"), a US pharmaceutical company, had obtained a European patent for the artificial production of EPO using recombinant DNA technology. Kirin-Amgen's method essentially involved introducing a DNA coding sequence for human EPO into a host cell such as a mammalian cell culture. The cell is therefore said to be host to an *exogenous* DNA sequence coding. Kirin-Amgen alleged that another US corporation, Transkaryotic Therapies Inc ("TKT"), had infringed its patent. TKT had also developed a genetic engineering technique for manufacturing EPO. In comparison to Kirin-Amgen's method, TKT's gene activation method uses an EPO gene that is naturally expressed in a human cell. An upstream control sequence is then inserted into the human EPO gene. Whilst the DNA coding sequence is therefore *endogenous* to the cell that expressed the EPO, the cell is nevertheless host to an exogenous control sequence.

13 Central to the dispute were three claims in Kirin-Amgen's patent. Claim 1 was for the DNA sequence for use in securing expression of EPO in a host cell, while claims 19 and 26 were product-by-process claims to

21 It is noteworthy that this was not the first time that Aldous LJ had spoken in support of the *Catnic* approach. In *Assidoman Multipack Limited v The Meed Corporation* [1995] RPC 321 ("*Assidoman*"), where he sat as a High Court judge in the Patents Court, he expressed (at 336–337) that if the *Catnic* purposive construction was not relevant under the Patents Act 1977 as alluded to in the *PLG* decision (*supra* n 18), it was then necessary to put forward the correct approach to steer between Scylla and Charybdis since the Protocol did not clearly prescribe this middle ground. The judge seemed to suggest that referring to the positions of other signatories of the Convention was prohibitively tedious. In his view, there was no better guidance than the *Catnic* approach that would result in consistent decisions between the English courts and the courts of other parties to the EPC.

EPO made from any exogenous DNA, and to EPO made in a host cell by the process of expressing the DNA sequence as specified in claim 1 respectively.[22] At first instance, claim 19 was held to be invalid for insufficiency but claim 26 was valid and infringed.[23] The Court of Appeal held that both claims were valid but that neither was infringed.[24] Kirin-Amgen appealed against the Court of Appeal's decision on the issue of infringement, while TKT cross-appealed against the findings that claims 19 and 26 were not invalid for insufficiency and anticipation respectively.

14 For present purposes, we need only consider Kirin-Amgen's appeal. Whether the two product-by-process claims were infringed largely turned on whether TKT's gene activation method infringed claim 1 in the first place. It was in respect of whether claim 1 was infringed that Lord Hoffmann in the House of Lords dealt extensively with the principles and case law relating to interpretation of patent claims.

15 In deciding the issue of infringement, Lord Hoffmann traced in detail the origins of the law on interpretation of claims in the UK. He then explained how developments in the English rules of construction prior to the advent of the Protocol had already adequately addressed the concerns of the Protocol. In particular, Lord Hoffmann clarified what the *Catnic* approach, which he opined was entirely consistent with the Protocol's requirement to strike the delicate balance between patentee protection and interests of certainty for third parties, truly entailed. According to him, the purposive *Catnic* approach involved only asking one compulsory question, *viz* "what the person skilled in the art would have understood the patentee to be using the language of the claim to mean".[25]

16 In this regard, Lord Hoffmann observed that in interpreting the claim through the eyes of the notional skilled man to determine the scope of the monopoly claimed, recourse to the patent office files was discouraged, if not disallowed. In addition, Lord Hoffmann also firmly rejected any possible development of a doctrine that supplemented the claims by extending protection to equivalents, such as the US approach to patent claim construction. However, Lord Hoffmann thought that

22 As TKT did not manufacture any of its EPO in UK, only these two product-by-process claims were alleged to have been infringed.
23 See *Kirin-Amgen Inc v Transkaryotic Therapies Inc* [2002] RPC 2.
24 See *Kirin-Amgen Inc v Transkaryotic Therapies Inc* [2003] RPC 3.
25 *Supra* n 4, at [34].

equivalents could still feature in the interpretation process in that they could form part of the background knowledge of the notional skilled man that would affect what he would understand the claims to mean. Lord Hoffmann also made it clear that the *Improver* questions were mere guidelines that might be applicable in some appropriate cases to assist in the purposive construction of the claims, rather than strict legal rules to be applied invariably in all cases.

17 Reverting to the facts of the case, Lord Hoffmann said that the chief question of construction was whether the notional skilled man would understand "host cell" in claim 1 to mean a cell that was host to an exogenous DNA sequence, or whether it could be extended to include a sequence that was endogenous to the cell like TKT's human EPO gene, as long as the cell was host to some exogenous DNA like TKT's control sequence. Lord Hoffmann held that the trial judge had rightly concluded, after considering the evidence of highly skilled witnesses, that the notional skilled man would have understood claim 1 to bear the former more restrictive meaning. In Lord Hoffmann's view, this would have justified a finding that the endogenous coding sequence that expressed TKT's EPO would not fall within Kirin-Amgen's claim 1, and that ought to have been the end of the matter. However, the trial judge took a further (erroneous, in Lord Hoffmann's view) step to consider the *Improver* questions. Lord Hoffmann took the opportunity to explain that the instant case provided a good illustration of when the *Improver* questions were not helpful. The trial judge had described his abovementioned construction of the words "host cell" as literal and then proceeded to test TKT's variant against the *Improver* questions. Lord Hoffmann pointed out that the words "host cell" were, however, wholly dependent on context. The notion of a host entailed a guest, and since the guest was not specifically identified, it must be inferred from the context. There was therefore nothing literal at all about the trial judge's construction of claim 1. In fact, Lord Hoffmann went further to say that all words had a contextual meaning, and when reference was made to the "primary, literal or acontextual meaning" in the *Improver* questions, this must refer to the conventional meanings of the words. The problem with the application of the *Improver* questions in the instant case was that there was no issue of whether a word or phrase was used in a strict conventional sense or some looser sense. Rather, the question was one of the level of generality at which the protection was being claimed, *ie*, whether the invention operated at a level of generality which made it irrelevant whether the DNA coding for EPO was exogenous or not. Once that question had been answered by applying a purposive interpretation of the claims, the issue of infringement would be resolved. To go through the motion of further

applying the *Improver* questions would at best reinforce the conclusion that had already been reached, and would at worst confuse.[26]

A. The Catnic *purposive construction and the notional skilled man*

18 Earlier, we noted[27] that with the advent of Art 69 of the EPC and the Protocol, the English Court of Appeal in *PLG* had challenged the continued applicability of the *Catnic* approach. We take issue with the reasoning that the *Catnic* approach would be irrelevant if it were consistent with the Protocol. As Lord Hoffmann observed,[28] the Protocol can suffer no harm from a little explanation. After all, the Protocol merely disclaims literalism on the one hand, and liberal interpretation on the other, and requires that the interests of patentee and third parties have to be balanced. It does not, however, say how such a delicate balance is to be struck.[29] Any guidance in this respect will therefore be helpful. If that is what the *Catnic* approach, whether grounded in common law, can offer, then it will remain relevant. Abandoning the approach and reinventing the wheel[30] is wholly unnecessary.

19 The true issue is whether the *Catnic* approach is indeed consistent with the Protocol, *ie*, whether it affords fair protection to the patentee and reasonable certainty to third parties. Lord Hoffmann thought that it was, and the use of the notional skilled man evidently played no small part in this:[31]

> How is this [fair protection for patentee and reasonable certainty for third parties] to be achieved? The claims must be construed in a way which attempts, so far as is possible in an imperfect world, not to disappoint the reasonable expectations of either side. What principle of interpretation would give fair protection to the patentee? Surely, a principle which would give him the full extent of the monopoly which the person skilled in the art would think he was intending to claim. And

26 *Supra* n 4, at [69]–[70].
27 See para 9 of the main text above.
28 *Supra* n 4, at [46].
29 See also *Assidoman*, *supra* n 21, where Aldous J (as he then was) commented at 337 that:

> The middle ground [which provides fair protection and reasonable certainty] referred to in the Protocol is not clearly defined and every court within the Community has adopted a method of interpretation which it believes to be consistent with the Protocol.

30 *Ibid*. "If it be right that 'purposive' construction should be left to legal historians, then it is necessary to put forward another means of navigation to enable the court to steer the correct course between Scylla and Charybdis."
31 *Supra* n 4, at [47].

> what principle would provide a reasonable degree of protection for third parties? Surely again, a principle which would not give the patentee more than the full extent of the monopoly which the person skilled in the art would think that he was intending to claim.

20 The *supposed* correlation between the use of the notional skilled man in the interpretation process, and achieving fair patentee protection as well as reasonable certainty for third parties, may be further explained, at least in theory, thus: Fair protection for the patentee entails going beyond the literal meaning of the words of the claim and construing the claim purposively so as not to defeat the patentee's intention as to the scope of his claim. Since patent claims in the specification are understood to be addressed to the notional skilled man,[32] the patentee's intention is objectively assessed by what the notional skilled man thinks the patentee intended to mean by the wording of the claim. As for reasonable certainty for third parties, this is supposedly achieved when a patent claim is given an interpretation that accords with what the notional skilled man would understand to be the scope of monopoly that is being claimed. After all, the notional skilled man may properly be regarded as the representative of all the individual third parties to whom the patent claims and specifications are addressed.

21 Unfortunately, things are not as neat and simple in practice. For present purposes, we need only point out that the actual use of the notional skilled man has suffered judicial criticism. For instance, in determining whether an invention was obvious, Sachs LJ highlighted the artificiality of the concept of the notional skilled person and in particular the assumption that such a person has recourse to "all such data as could upon exhaustive research be found in the shelves which house the patent specifications of this and other countries … however unlikely it is that it would come to the attention of the skilled worker in question".[33] Interestingly, criticisms of the notional skilled man have emanated as well from none other than Lord Hoffmann himself. He had, on a previous

32 See *Lubrizol Corp v Esso Petroleum Co Ltd* [1998] RPC 727 at 738:

> Patent specifications are intended to be read by persons skilled in the relevant art, but their construction is for the Court. Thus, the court must adopt the mantle of the notional skilled addressee and determine, from the language used, what the notional skilled addressee would understand to be the ambit of the claim. To do that it is often necessary for the Court to be informed as to the meaning of technical words and phrases and what was, at the relevant time, the common general knowledge; the knowledge that the notional skilled man would have.

33 *Technograph Printed Circuits Limited v Mills & Rockley (Electronics) Limited* [1969] RPC 395 at 408.

occasion, expressed doubts about the usefulness of such an improbable and unreal character when establishing the validity of a patent:[34]

> … I am sceptical of the value of the varied cast of imaginary and sometimes improbable people … which the law has invented to embody concepts like reasonableness, business efficacy, lack of inventiveness and even parental concern with children proposed for adoption. … I think it is more useful to try to analyse the concepts themselves. …
>
> The words "obvious" and "inventive step" involve questions of fact and degree which must be answered in accordance with the general policy of the Patents Act to reward and encourage inventors without inhibiting improvements of existing technology by others.

There the judge seemed to suggest that the issue of validity should be resolved by having regard to the prevailing policy considerations of patent law. The criticism levelled at the usefulness of the notional skilled man in establishing patent validity should apply with equal force, if not more so, where patent infringement is concerned, considering that the concept of the notional skilled man lies at the heart of the *Catnic* approach. In any event, the principles of interpretation should be the same whether the issue is of validity or of infringement – surely a claim cannot be accorded a particular scope of meaning when assessing its validity, only to have that meaning widened or narrowed when considering the issue of infringement.[35]

22 In our view, the role of the notional skilled man (where interpreting patent claims is concerned) has not been diminished. *Kirin-Amgen* has only downplayed the *Catnic-Improver* approach in so far as disapprobation was expressed, *not* as to the concept of the notional skilled man *per se*, but as to the *use* of the *Improver* questions as strict legal rules to "help to decide what the [notional] skilled man would have understood the patentee to mean".[36] The "*Catnic* principle", *ie*, the principle of purposive construction (as opposed to guidelines for applying that principle such as the *Improver* questions), which involves answering the ultimate question of what the notional skilled man would have understood the patentee to mean, is very much at the forefront of patent construction. In the words of Lord Hoffmann, it is the very "bedrock of patent construction, universally applicable".[37]

34 *Société Technique de Pulverisation Step v Emson Europe Ltd* [1993] RPC 513 at 519.
35 *Terrell on the Law of Patents* (Sweet & Maxwell, 15th Ed, 2000) at para 6.02.
36 *Supra* n 4, at [52].
37 *Ibid*.

23 The use of the notional skilled man to interpret patent claims may attract detractors because such a character, being unreal and improbable, has its limitations, but more importantly, he may appear inapt to shoulder the onerous burden of striking the perfect balance between fair patentee protection and reasonable certainty for third parties. To us, however, what is fair protection for the patentee and, conversely, reasonable certainty for third parties, operate over a spectrum. In other words, we say that there is an acceptable range of protection and certainty that would be considered fair to the patentee and reasonable to third parties. To our minds, the search is therefore not for the perfect balance between exact levels of fairness and certainty; it is for a moderate middle ground more or less between acceptable ranges of fairness and certainty. This is so because firstly, we do not seek to ascertain the *true* intention of the patentee, but rather what the notional skilled reader thinks the patentee intended. Secondly, we can only ascertain a rough-and-ready certainty through the notional skilled man who is supposedly the representative of all individual third parties. We therefore accept the limitations of the concept but do not think it is inadequate. To add a touch of reality to an admittedly artificial legal character such as the notional skilled man, one should not lose sight of the prevailing policy considerations of patent law when interpreting patent claims.

24 In criticising the purposive approach, Turner argued[38] that the *Catnic* or *Improver* formula requires an inquiry into whether the patentee could have intended a narrow meaning for the words of the claim so as to exclude any variant from its ambit. According to Turner, this tilts the balance because:[39]

> … it would achieve complete certainty at the expense of fair protection for the patentee, since a patent would only be infringed by a variant from a strict meaning of the words of the claim in the rare case where it was clear that the patentee intended to claim the variant.

In so far as his criticism goes to the difficulty in establishing that the patentee in fact intended to cover the variant, we will re-emphasise that the search for the true intention of the patentee is in the first place a futile endeavour. We can only hope to ascertain what the notional skilled man would think the patentee's intention was.

38 Jonathan D C Turner, "Purposive Construction: Seven Reasons Why *Catnic* is Wrong" [1999] EIPR 531.

39 *Ibid*, at 532.

25 Turner also suggested that under the *Improver* questions, the burden is on the patentee to positively prove an intention to cover the variant:[40]

> If (as *Improver* appeared to indicate) the patentee *has to show that it intended to include the variant*, fair protection is likely to be denied, since there is unlikely to be evidence of an intention which the patentee never had. [emphasis added]

The *Catnic* approach and in particular the third *Improver* question should not require that. Once the first two *Improver* questions are satisfied, the position would be that the immaterial variant does fall within the ambit of the patent claim. The onus is then on the alleged infringing party to show that the notional skilled man would have thought the patentee nonetheless intended a narrow interpretation so as to exclude that variant. This appears to be the approach adopted in *Wheatley (Davina) v Drillsafe Ltd*, where Aldous LJ stated:[41]

> It is reasonable to infer, absent express words to the contrary, that the patentee intended to include within his monopoly what can be termed immaterial variants … However, third parties … should not be held to infringe if it was clear that such a variant was not intended to be within the ambit of the monopoly …

B. The role of the Improver *questions*

26 Before discussing Lord Hoffmann's view on when the *Improver* questions are inapplicable, it is apposite to first consider a more fundamental objection to the questions on the basis that they advocate interpreting patent claims by having regard to whether there will be infringement. Admittedly, the *Improver* questions are framed such as to compel a comparison between the patented invention and the alleged infringement. This is especially so considering that the first two questions explicitly refer to whether there is any material difference between the way the variant works and the way the patented invention works.

27 We acknowledge that it used to be incorrect to have an eye on the issue of infringement when determining the ambit of patent claims.[42] The claims were to be interpreted *in vacuo* as if the alleged infringement did not exist. As early as the 19th century, it was held that the claims and

40 Jonathan D C Turner, "Purposive Construction" [2001] EIPR 118 at 118.
41 [2001] RPC 7 at [23].
42 *Supra* n 35, at para 6.21.

specifications should be construed without reference to the alleged infringement, "as if [one] had to construe [them] before the [d]efendant was born".[43] The claims were to be interpreted on their own without consideration of the alleged infringing product. The fear that keeping the alleged infringement in mind might unduly influence the interpretation of the claim was similar to the danger of hindsight when considering the question of anticipation.[44]

28 Recent cases have however taken the view that it is almost imperative to consider the alleged infringement in order to properly interpret the claims. As Pumfrey J stated in *Consafe Engineering (UK) Ltd v Emtunga UK Ltd*:[45]

> It used to be said that it was wrong to construe the claim with one eye on the alleged infringement, but it is not possible to ascertain the correct construction of the claim until a literal meaning of the claim has been arrived at, and any variants from that strict, literal meaning that are present in the alleged infringement have been identified.

Similarly, it was held in *Minnesota Mining & Manufacturing Co's (Suspension Aerosol Formulation) Patent* that it is not possible to "ascertain everything that is within the contemplation of a claim until all the relevant variants have been identified".[46] It would appear that even for the third *Improver* question, in determining whether the patentee intended strict compliance with the literal meaning of the words in the claims, it is permissible to consider the alleged infringement and whether the notional skilled man would think the patentee intended to exclude such a variant. Prof Franzosi puts it in this way:[47]

> [I]f a patent is capable of a plurality of interpretations, which one would be considered by the interpreter, if not with reference to the infringement? One has to be practical.

29 In our view, this is right. If one is interpreting a patent claim to decide an issue of infringement, it is artificial to shut one's eyes to the

43 *Nobel's Explosives Company Limited v Anderson* (1894) 11 RPC 519 at 523.
44 David Bainbridge, *Intellectual Property* (Pearson Education Limited, 5th Ed, 2002) at p 398.
45 [1999] RPC 154 at [9].
46 [1999] RPC 135 at 143.
47 Mario Franzosi, "Equivalence in Europe" [2003] EIPR 237 at 238.

alleged infringement when construing the claim.[48] As such, any previous objection to the *Improver* questions on the basis that patent claims are interpreted by having regard to whether there is infringement loses its persuasiveness.

30 Accepted as a useful framework in which to interpret patent claims, the *Improver* questions have been regularly cited and applied in numerous UK cases. Regrettably, the fact that the questions were resorted to as a matter of course elevated them to the status of legal rules that dictate the answer to the question of infringement in every patent case. Perhaps ironically, it took Lord Hoffmann himself, who came up with the questions, to point out in *Kirin-Amgen* the inherent limitations in the *Improver* formulae, which restricted its hitherto-thought universal applicability to all patent infringement cases. Essentially, Lord Hoffmann clarified the status of the *Improver* questions, saying that they were not legal rules to be mechanically applied. In fact, he relegated the questions to mere guidelines that are helpful in some but not all cases. Relying on the facts in *Kirin-Amgen*, he cited two instances where the *Improver* questions would be ill-equipped to assist in the interpretation of claims.

31 The first instance is where the question whether a word or phrase was used in a strictly conventional or strict sense does not arise. As mentioned earlier,[49] Lord Hoffmann took the view that all words have a contextual meaning, such that when reference is made to the strict or literal meaning in the *Improver* questions, this only means the ordinary conventional meaning of the words. He said that there may, however, be words or phrases that cannot be said to possess at the same time a strict conventional meaning and a varying degree of other possible looser meanings. Contrasting the facts of *Kirin-Amgen* with those in cases like *Catnic* where figures and measurements were involved, Lord Hoffmann said:[50]

> The notion of strict compliance with the conventional meanings of words or phrases sits most comfortably with the use of figures, measurements, angles and the like, when the question is whether they

48 A different view seems to have been taken in *Minnesota Mining & Manufacturing Co v Plastus Kreativ AB* [1997] RPC 737, particularly with regard to the third *Improver* question. The court said at 747 that:

> [T]here never is a plausible reason why the patentee (assuming his claim is valid) would want to exclude a competitor's product. That does not mean his claim covers it.

49 See para 17 of the main text above.

50 *Supra* n 4, at [65]–[66].

> allow for some degree of tolerance or approximation. That was the case in Catnic …
>
> No doubt there are other cases, not involving figures or measurements, in which the question is whether a word or phrase was used in a strictly conventional or some looser sense. But the present case illustrates the difficulty of applying the Protocol questions when no such question arises. No one suggests that "an exogenous DNA sequence coding for EPO" can have some looser meaning which includes "an endogenous DNA sequence coding for EPO".

To put it simply, Lord Hoffmann's view is that if the construction of the claim does not revolve around descriptive words or phrases that are capable of not only one strict conventional meaning but other possible variations as well, then the *Improver* inquiry is of little assistance.

32 We are not so sure that *Kirin-Amgen* involves the construction of such a claim. It is not clear to us that the phrase "exogenous DNA sequence coding for EPO" is devoid of any looser meaning.[51] In any event, we think that Lord Hoffmann's view (that the *Improver* inquiry is only helpful in construing a claim involving descriptive words or phrases that are capable of more than one strict conventional meaning) really harks back to the so-called "issue" framed in terms of words or phrases in the claim that have both a primary literal meaning and a looser meaning, which is a precursor to going through the *Improver* questions:[52]

> If the issue was whether a feature embodied in an alleged infringement which fell outside the primary, literal or acontextual meaning of a descriptive word or phrase in the claim ("a variant") was nevertheless within its language as properly interpreted, the court should ask itself the following three questions …

This ostensibly sits well with the view that purposive construction is to go beyond the literal meaning of the wordings of the claim, which presupposes that a literal meaning exists. It therefore follows that it will be conceptually unsound to require interpreters to go beyond the literal meaning of the wordings of the claim if the words do not, of themselves, possess a strict conventional meaning.

33 However, we think that this stems from the unfortunate historical baggage that the *Improver* questions are made to suffer, and quite

51 It has been pointed out to us that it can be fairly interpreted to include exogenous (upstream activator) DNS sequence (inserted to activate endogenous DNA sequences) coding for EPO.

52 *Supra* n 15, at 189.

understandably so. After all, the *Improver* questions are but a reformulation of Lord Diplock's "purposive construction" approach, which was born essentially to deal with the bane of literalism. However, that should not mean that if literalism is a non-issue, such as when the wordings of the claim do not have a strict conventional meaning, the *Improver* questions should be abandoned without a thought. Although the literal-purposive movement underlies the rules of construction, this should not eclipse the new mandate of balancing fair protection to the patentee and reasonable certainty for third parties in patent claim interpretation. The court should not lose sight of what it is ultimately tasked to do, and that is to balance the interests of both the patentee and third parties. Therefore, in contemporary times, the definition of a "variant" for the purpose of applying the *Improver* questions need not necessarily be expressed as the antithesis of the meaning of "primary, literal or acontextual".

34 For instance, if we define the invention as the process of making EPO, we can then regard the exogenous DNA sequence coding as the invention, and treat the endogenous sequence coding as the variant. We can then go on and apply the three *Improver* questions just the same.[53] Indeed, before the issue of infringement can be properly considered (quite apart from how it is claimed in the patent claims and specifications), the court first has to decide what the invention in question is. Lord Hoffmann tells us that the chief question of construction revolves around the word "host-cell", but the invention that the court had in mind was not immediately obvious. The applicability, usefulness and appropriateness of the *Improver* questions depend very much on how the invention is defined.

35 The second situation that Lord Hoffmann felt would pose considerable difficulties for the *Improver* inquiry concerns cases involving new technology. He stated:[54]

> When one asks whether it would have been obvious to the person skilled in the art that the variant worked in the same way as the invention, does one assume that it works? Otherwise, in the case of a technology which was unknown at the priority date, the person skilled in the art would probably say that it was by no means obvious that it

53 Taking the first *Improver* question for instance, the inquiry would be whether there are any material differences between the way Kirin-Amgen's method of using the exogenous DNA sequence works and the way TKT's method of using the endogenous DNA sequence works; and so on.

54 *Supra* n 4, at [81]. See also Lord Walker at [139].

> would work in the same way because it was not obvious that it would work at all.

The difficulty therefore lies principally with the first two questions of fact in the *Improver* formula. If one was unsure whether the variant will work in the first place because it is based on new technology, it is unlikely that one can ascertain if it will have a material effect on the way the patented invention works and whether the skilled person would know of this. Again, this presupposes that the invention has been properly defined at the outset.

36 Even if we were to accept, for the sake of argument, that the *Improver* questions are unlikely to be applicable in such cases of emerging technology, especially for genetic engineering techniques that are rapidly developing, Lord Hoffmann did not lay down any alternative guidelines to the *Improver* questions. Further guidance on how to interpret claims in such cases is noticeably lacking. On the facts of *Kirin-Amgen* itself, Lord Hoffmann merely said that Amgen's claim did not operate at a level of generality that encompasses TKT's gene activation method. The only hint of what an alternative guide to construction could be is the reference to how the German courts have looked at whether the variant "solves the problem underlying the invention by means which have the same technical effect", as opposed to considering whether the variant has a material effect upon the way the invention *works*.[55]

C. Prosecution history

37 We next turn to *Kirin-Amgen*'s discussion on the use of the prosecution history of the patent to aid in determining the ambit and scope of the claim. In the course of the prosecution of an application in the patent office, there may be correspondence between the patent office and the patentee. The applicant may make representations to persuade the examiner to grant the patent, to amend the claims and specifications, or to make concessions as to the width of the monopoly being claimed in order to meet objections by the examiner.

38 In the US, such documents and information that are contained in the patent office files are treated as evidence that can be relied upon to construe the patent claims.[56] Although it is clear that such statements

55 *Supra* n 4, at [75].

56 Nicholas Fox, "Divided by a Common Language: A Comparison of Patent Claim Interpretation in the English and American Courts" [2004] EIPR 528 at 531.

made during prosecution will not be allowed to override the content of the claims and specifications,[57] these are nevertheless evidence to show the patentee's intention *vis-à-vis* the ambit of the monopoly for which he is claiming. In particular, if the patentee has made statements to the effect that certain wordings were to be narrowly construed during the process of patent prosecution, he will be estopped from arguing that the words in the claims have a wider meaning.[58] This has been recognised in the US as "file wrapper estoppel".

39 In contrast, the English courts have generally focused only on the patentee's words in the claims and specifications to determine the scope of patent protection. The judicial attitude is to pay attention only to what he actually said in the claims and not what he may have thought or subjectively intended.[59] Evidence of the subsequent conduct of the patentee has therefore been held to be inadmissible in construing the claims.[60] As for evidence of prior conduct, it has been held that a patentee's representations during patent prosecution obviously "can have no bearing on the actual meaning of the claim".[61] Indeed, even if a patentee had successfully convinced an examiner that his patent should be granted by asserting a narrow construction of its scope, the court is free to disagree and construe the claim in a different way to find that it is infringed or that it is not.[62]

40 There are English decisions that may appear to the contrary at first glance. For example, in *Furr v C D Truline (Building Products) Ltd*,[63] the court refused an interlocutory injunction on the basis that it was not open to the patentee to contend for a wider construction of the claim, since the patentee had expressly limited the ambit of the patent when prosecuting its application in order to meet the objections raised by the examiner. Upon closer examination of the decision, however, the representations made by the patentee in the course of the application were in fact regarded as an admission against interest. They were

57 For example, in *Intervet America, Inc v Kee-Vet Laboratories, Inc* 887 F 2d 1050 (1989), it was held that when the question arises as to whether an attorney's remarks during prosecution of an application or the claims of the patent should prevail, there was no doubt that the claims should take precedence.

58 *Festo Corp v Shoketsu Kinzoku Kogyo Kabushiki Co Ltd* [2003] FSR 10 ("the *Festo Corp* case").

59 *Reymes-Cole v Elite Hosiery Company Limited* [1965] RPC 102.

60 *Glaverbel SA v British Coal Corp* [1995] RPC 255.

61 *Taylor v Ishida (Europe) Ltd*, 30 July 1999, Chancery Division (*per* Pumfrey J).

62 *CIPA Guide to the Patents Acts* (Sweet & Maxwell, 5th Ed, 2001) at para 125.26.

63 [1985] FSR 553.

admitted on that evidential basis and the case, properly construed, therefore did not disturb the general stance taken by the English courts that claims are not to be interpreted in the light of prosecution history. A more recent case is *Rohms and Haas Co v Collag Ltd*,[64] where the English Court of Appeal remarked *obiter* that correspondence between the patentee and the European Patent Office "could be of assistance in resolving some puzzling features of the specification".[65] This might give the impression that recourse can be had to prosecution files when certain parts of the claims or specifications of the patent are especially ambiguous and difficult to decipher. That said, the facts of the case were somewhat peculiar in that the front page of the granted patent actually made reference to certain technical information contained in the prosecution file, which was submitted after the application was filed and not included in the specification. The above *dictum* in the case may well be restricted to those particular circumstances.

41 This state of affairs was confirmed in *Kirin-Amgen*, where Lord Hoffmann expressed the view that:[66]

> The courts of the United Kingdom, the Netherlands and Germany certainly discourage, if they do not actually prohibit, use of the patent office file in aid of construction. There are good reasons: *the meaning of the patent should not change according to whether or not the person skilled in the art has access to the file and in any case life is too short for the limited assistance which it can provide*. [emphasis added]

42 Lord Hoffmann also commented on the US doctrine of file wrapper estoppel thus:[67]

> File wrapper estoppel means that the *true scope of patent protection often cannot be established without an expensive investigation of the patent office file.* Furthermore, the difficulties involved in deciding exactly what part of the claim should be taken to have been withdrawn by an amendment drove the Federal Court of Appeals in *Festo Corp v Shoketsu Kinzoku Kogyo Kabushiki Co Ltd* 234 F3rd 558 (2000) to declare that the law was arbitrary and unworkable. …
>
> In order to restore some certainty, the Court of Appeals laid down a rule that any amendment for reasons of patent validity was an absolute bar to any extension of the monopoly outside the literal meaning of the

64 [2001] EWCA Civ 1589.
65 *Ibid,* at [42].
66 *Supra* n 4, at [35].
67 *Supra* n 4, at [39].

> amended text. But the Supreme Court reversed this retreat to literalism on the ground that the cure was worse than the disease …
>
> [emphasis added]

43 Lord Hoffmann's comments on the developments in US case law as to the treatment of prosecution history suggest that the doctrine is also under attack in the US. We wish to point out that the US Supreme Court in *Festo Corp* case[68] did not abandon the doctrine of prosecution history but only modified it,[69] in an effort to curtail the doctrine of equivalents. Therefore, prosecution history is still alive as an aid to interpretation in the US.

44 In fact, we recognise that the existence and scope of the US file wrapper estoppel is very much tied to the doctrine of equivalents. However, to the extent that such an estoppel is used to counterbalance the doctrine of equivalents, which, if left unchecked, would unduly widen patent protection, it may be worthwhile to replicate the use of prosecution history in this manner in the UK. After all, the evil is the same, namely unduly wide patent protection, which would result in unfair patentee protection and uncertainty for third parties.

45 It would appear that Lord Hoffmann's main concern against reliance on prosecution history is that, *in practice*, the notional skilled man might not have access to and therefore would not have consulted the patent office files. However, there might be less cause for concern if the prosecution history is used to narrow the scope of the patentee's claims and to estop the patentee from claiming a wider scope. As Jacob J in *Bristol-Myers Squibb Co v Baker Norton Pharmaceuticals Inc* rightly observed:[70]

> [T]here is another obvious difference between using the prosecution history to *widen* the claim and using that history to *narrow* it. It would

68 *Supra* n 58.

69 While it is true that the Supreme Court in the *Festo Corp* case rejected the approach adopted by the Federal Court of Appeals that every narrowing amendment limits the scope of the monopoly to the strict literal terms of the amended text, the Supreme Court did not abandon the doctrine of prosecution history. Instead, it advocated a modified approach. If the patentee had made amendments during its application, this establishes a rebuttable presumption that the prosecution history bars the finding of equivalence. This presumption can be rebutted where the amendment cannot reasonably be viewed as surrendering a particular equivalent, for example, where the equivalent was not foreseeable at the time of the application or where the amendment bears only a "tangential" relation to the equivalent.

70 [1999] RPC 253 at [52].

> be unfair on the public if material they would not normally look at could serve as a basis for supporting a wide construction of the claim. But there is not the same sort of unfairness if a patentee having contended for a narrow construction of his claim during prosecution is held to that construction later … [emphasis in original]

46 Even though material that the notional skilled man would not have consulted is used against the patentee, there can scarcely be any prejudice to the patentee, since the extent of his protection is merely being limited to what he has contended for, in other words in accordance with his intention. In any event, the issue of inaccessibility can go to the weight that is to be accorded to the prosecution files, *ie*, we can take into account the weight that the person skilled in the art would have given, had he consulted the prosecution files, which he in fact did not.[71] The interests of third parties are also unlikely to be affected, since there would not be a situation where the claim actually covered more than the third parties would have thought.

47 Having said that, we acknowledge that it may be expensive and time-consuming to seek recourse to such files and that they may contain only limited useful information. These are of course real and practical difficulties, but not *legal* problems. As such, they should not be overstated since there is nothing conceptually wrong with having recourse to these files or that it will run counter to some established principle of construction. We do recognise the forcefulness of the particular practical objection that recourse to the patent files may yield limited assistance at the end of the exercise. The US Patent and Trademark Office ("USPTO") has been examining patent applications for matters such as obviousness since 1836,[72] and the courts generally respect its decisions on patent applications. Admittedly, the wide role of the USPTO may mean that there is more useful information contained in US patent prosecution files.

D. The doctrine of equivalents

48 Finally, we turn to examine the court's view on using any doctrine of equivalents, such as that developed in US jurisprudence, to aid in determining the issue of infringement. Essentially, the US doctrine permits a finding of infringement where each element of a claimed

71 *Cf* practical accessibility when deciding the issue of inventive step. *Contra* practical accessibility when deciding the issue of novelty. Novelty can still be defeated as long as the earlier invention in fact forms part of the prior art even though there is no likelihood that a person skilled in the art would have found or consulted it.

72 Patent Act of 1836, c 357, 5 Stat 117.

invention has a corresponding equivalent in an alleged infringing product or process, and the differences between each of the claimed elements and the corresponding elements in the alleged infringement are insubstantial.[73] Although no rigid formula has been laid down to establish equivalence, the US courts typically look at whether the alleged infringement performs "substantially the same function in substantially the same way to obtain the same result".[74]

49 In *Kirin-Amgen*, Lord Hoffmann criticised the doctrine on the ground that once the monopoly was allowed to escape from the terms of the claims to cover equivalents, it was not easy to know where its limits should be drawn.[75] Amidst Lord Hoffmann's rather impassioned criticism,[76] it is perhaps not immediately apparent that there is not much difference in practice after all between the US doctrine of equivalents and the *Catnic* purposive approach, considering that both were developed to combat the bane of literalism. In fact, Lord Hoffmann conceded this when he expressed the view that:[77]

> If literalism stands in the way of construing patent claims so as to give fair protection to the patentee, there are two things that you can do. One is to adhere to literalism in construing the claims and evolve a doctrine which supplements the claims by extending protection to equivalents. That is what the Americans have done. The other is to abandon literalism. That is what the House of Lords did in the *Catnic* case ...

50 In essence, the effect of both approaches is that we allow the ambit of protection to extend beyond the literal meaning of the claims. Indeed, Lord Hoffmann opined that the results from using the US doctrine were no more just or predictable than could be achieved by simply reading the claims.[78] Seen in this light, Lord Hoffmann's criticism may not be directed so much at *what* the US doctrine purports to do (*viz*, combat literalism), but *how* this is achieved, *viz*, going beyond the terms of the claim *and* imposing a suitable limit as to how far one will go in doing so.

73 *Supra* n 56, at 533.
74 *Graver Tank & Mfg Co, Inc v Linde Air Products Co* 339 US 605 (1950) at 608.
75 *Supra* n 4, at [39].
76 He even described the US doctrine of equivalents as one that was "born of despair": see *supra* n 4, at [41].
77 *Id*, at [42].
78 *Id*, at [44].

51 We venture to suggest that the *Catnic* purposive approach may well have made it easier to know where the limits of the monopoly should be drawn, *not* because it advocates interpreting within the terms of the claim, but because a more expansive reading of the claim[79] is tampered by the use of the notional skilled man, which purportedly injects some objectivity and certainty into the interpretation process, despite its limitations. It may well be the case that Lord Hoffmann was criticising the fact that a relatively less successful equivalent, in the form of file wrapper estoppel, was being used to limit how far one should go beyond the terms of the claim, rather than the fact that the US approach actually goes beyond the terms of the claim *per se*.

52 Indeed, Lord Hoffmann was not thoroughly dismissive, and he continued to see some limited relevance to the concept of equivalence. He stated that as a matter of common sense, there was no reason why equivalence could not form an *important* part of the background of facts known to the notional skilled man.[80] However, it may be queried whether this attempt to employ the concept of equivalence as a guide to construction within the *Catnic* purposive approach is desirable or even necessary. Although we have opined that the practical end result of application may not be different, the purposive approach and the doctrine of equivalents are nevertheless conceptually distinct and separate with their own methodologies; the *Catnic* approach affords a purposive reading of the claims in accordance with (what the notional skilled man understands to be) the patentee's intention, whereas the doctrine of equivalents keeps very strictly to the wording of the claims and then supplements this by considering equivalents. It may be desirable, therefore, both conceptually and in practice, to keep them separate, rather than to transpose the aspect of one to the other. We also note that Lord Hoffmann could have been influenced by the new Art 2 of the Protocol, which mandates that due account be taken of any element which is equivalent to an element specified in the claim.

79 For example, Bainbridge observed that the purposive approach and the *Catnic* test can be criticised because it can lead to uncertainty. A potential competitor wishing to make a non-infringing variant might have difficulties deciding just how far he can go without infringing. *Supra* n 44, at p 396.

80 *Supra* n 4, at [49].

IV. The *Kirin-Amgen* decision and Singapore

53 Apart from the fact that it bears the authoritative weight of the House of Lords, the *Kirin-Amgen* decision has to be given due regard in Singapore, considering that local patent law statutorily embodied in the Patents Act[81] is modelled closely after the UK Patents Act 1977.

54 Like s 125(1) of the UK Patents Act 1977,[82] s 113(1) of the local Patents Act also provides that a patent claim is to be read in conjunction with the specification to determine what the invention is for which patent protection is sought. In fact, this section is word-for-word the same as s 125(1) of the UK Patents Act 1977. The only difference is that the UK courts are additionally mandated to use the Protocol to interpret their section, which essentially entails balancing fair protection for the patentee with reasonable certainty for third parties.[83] Although the Singapore courts are not bound, statutorily or otherwise, to use the Protocol to interpret s 113(1) of the local Patents Act, there is no reason why the Protocol should be ignored altogether. After all, the Protocol's aim to balance the rights of both the patentee and the third parties is sensible, if not an essential feature of any system of patent law, whether or not it has statutory force.[84]

55 However justified it may have been for Singapore to adopt the *Catnic-Improver* approach in the past, and if we may add, more often than not as a matter of course, on the convenient account of her English heritage of local patent law, one has to consider the impact of the recent US-Singapore Free Trade Agreement ("US-Singapore FTA"), which has already begun re-shaping patent law,[85] amongst other branches of intellectual property laws. It would therefore not be unreasonable to expect that the upcoming trend would be for local patent law and its

81 Cap 221, 2002 Rev Ed.

82 See para 4 of the main text above.

83 See para 5 of the main text above.

84 See also Art 7 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) (Annex 1C of the Marrakesh Agreement Establishing the World Trade Organization signed on 15 April 1994):

> The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and *to a balance of rights and obligations*. [emphasis added]

85 See Ng-Loy Wee Loon, "The IP Chapter in the US-Singapore Free Trade Agreement" (2004) 16 SAcLJ 42 at paras 37–53. The interpretation of patent claims was not an aspect that was specifically addressed by the free trade agreement *per se*.

interpretation to be generally aligned more closely to US patent law and jurisprudence.

56 It is in this context that the recent Singapore Court of Appeal decision in *FE Global Electronics Ltd v Trek Technology (Singapore) Pte Ltd*[86] is of interest. It would appear, at least for now, that the court has implicitly decided not to deviate from the English jurisprudence of interpreting patent claims, post the US-Singapore FTA. More importantly, the court has endorsed upfront the policy of balancing the rights of both the patentee and third parties as underlying the exercise of interpreting patent claims:[87]

> [I]n *Catnic Components Limited v Hill & Smith Limited* [1982] RPC 183 at 243, Lord Diplock aptly observed that the words of a patent "should be given a purposive construction rather than a purely literal one derived from applying to it the kind of meticulous verbal analysis in which lawyers are too often tempted by their training to indulge". We agree that the purposive approach is preferred as it balances the rights of the patentee and those of third parties. More recently, in *Kirin-Amgen Inc v Hoechst Marion Roussel Ltd* [2005] RPC 9 at [48], the House of Lords endorsed the *Catnic* purposive approach as consonant with the Protocol on the Interpretation of Art 69 of the European Patent Convention, which provides, *inter alia*, that a patent should be interpreted "as defining a position … which combines a fair protection for the patentee with a reasonable degree of certainty for third parties".

Seen in this light, the *Kirin-Amgen* decision, which clarifies the law on patent claim interpretation post-*Catnic* and *Improver*, is therefore significant and relevant to local patent law jurisprudence. This leads us to discuss the way forward for the interpretation of patent claims in Singapore following the *Kirin-Amgen* decision.

57 In *Kirin-Amgen*, Lord Hoffmann rightly observed that more often than not, the *Improver* questions are answered as a matter of course in patent claim interpretation. *Kirin-Amgen* is therefore a timely reminder that the *Improver* questions are but a means to an end, which cannot be rigidly applied because they may not always be helpful (assuming that the invention in question has been defined at the outset). Accordingly, the court should not merely go through the motion of answering the *Improver* questions to interpret the claim; the court should rightly abandon the questions without hesitation if they do not fit into the scheme of things.

86 [2005] SGCA 55.
87 *Ibid*, at [14].

58 Where the *Improver* questions are helpful, and Lord Hoffmann's view is that they would be in cases involving figures, measurements, angles and the like where the issue is whether they allow for some degree of tolerance or approximation, they should be applied. Having said that, applying the *Improver* questions, or indeed the more general *Catnic* purposive approach as clarified in *Kirin-Amgen* may not necessarily lead to reaching a balance that falls *within* the acceptable ranges of fairness and certainty in every case,[88] and as such, the court must not be lulled into thinking that it would. Ultimately the court, imbued with the knowledge of the notional skilled man, still has to decide very much for itself where the balance between acceptable ranges of fairness and certainty ought to lie. In this regard, we think that Aldous LJ correctly identified that:[89]

> [T]he task of the court is to do that set out in the Protocol which, when carried out, does not necessarily end up with the same result as that which would be reached by the skilled man in the art applying his mind to the words in the specification.
>
> …
>
> … Having obtained the knowledge of the notional skilled man, the specification must be read as a whole to ascertain its meaning and from that the court has to decide the ambit of the monopoly claimed using the guidance in the Protocol.

If asking what the notional skilled man thinks is being claimed leads to a balance that falls outside the acceptable ranges of fairness and certainty, the court has to redefine the balance so that it actually does fall within that acceptable range. We think the court can do this by tampering what it gets out of the *Improver* inquiry with its innate sense of fairness and justice, as well as an appreciation of the prevailing policy goals behind giving patent monopoly.

59 As for cases involving new emerging technologies, even if Lord Hoffmann was right that we should not go through the *Improver* questions in these cases, but instead focus on answering the crucial

88 We have earlier (see para 23 of the main text above) suggested that the search is not for the perfect balance between exact levels of fairness to the patentee and reasonable certainty for third parties. Rather, it is for a moderate middle ground between acceptable ranges of fairness and certainty. Indeed, even if such a balance were ostensibly reached, the court cannot presume that the width of the so-called acceptable ranges of fairness and certainty are pitched at the correct level. The question then becomes whether the ranges are over-inclusive.

89 *Hoechst*, *supra* n 20, at 326–327.

question in all patent claim interpretations, *ie*, what the person skilled in the art would have understood the patentee to be using the language of the claim to mean, this still begs the question: If the *Improver* questions are not useful, then what is? It is good that Lord Hoffmann is telling us *what* to do (*viz*, answer the crucial question and not the *Improver* questions), but he does not tell us *how* to do it in these specialised cases. The third *Improver* question seems to us like an elaborated form of the crucial question that Lord Hoffmann urges patent claim interpreters to answer. In our view, Lord Hoffmann rejected the *Improver* questions *as a whole* because, in his view, the first and second question just could not be answered given the nature of these cases. However, it is to be remembered that the first two *Improver* questions only form the factual background to interpreting the claim and it is the third question that is crucial.[90] We therefore think the crucial question can be answered using the third *Improver* question *as a guide*, even in cases where the first two questions cannot be answered.

60 In seeking an acceptable balance between fair patentee protection and reasonable certainty for third parties, we think there is some potential in seeking recourse to the prosecution history of the patent, but we also recognise the *present* shortcomings in doing this. The patent files may provide only limited useful information where the patent office plays only a passive role. In Singapore, the Intellectual Property Office of Singapore ("IPOS") deals with patent applications.[91] It outsources the conduct of searches and the examination of the claims and specifications that have been filed before a patent can be granted.[92] Amendments to the claims may be made as part of the application process.[93] However, short of these, it does not appear that applicants make other forms of representations to IPOS. The protection is also very much "self-assessing", and IPOS will typically grant the patent as a matter of course as long as all the formal requirements are met and the search and examination process has been properly carried out.[94] The more detailed and substantive issues of validity will only be put to the test in any subsequent judicial proceedings brought for revocation or infringement. To that extent, IPOS will seem to be more akin to an administrative agency and

90 See para 8 of the main text above.
91 See generally the IPOS website <http://www.ipos.gov.sg/main/index.html>.
92 For the procedure for the making of an application, see Patents Act, *supra* n 81, s 25.
93 See Patents Act, *id*, s 31.
94 See ss 30(1), 30(2) and 30(3) of the Patents Act. Under s 30(3), the IPOS does have the limited power of rejecting an application for not having an inventive step where such an objection is raised. Also see Chua Siak Kim, "Patenting Business Methods" *Singapore Law Gazette*, October 2001 p 16.

does not appear to play the same key role as a gatekeeper like the USPTO. Accordingly, the objections to using prosecution history, in particular the criticism that such an investigation will not yield much useful information, will likely feature in Singapore.

61 We think, however, that the role of IPOS is set to change. It has been announced in Parliament that IPOS will move away from being just a regulatory body and will assume a greater role of ensuring a sound infrastructure for the development and protection of IPRs.[95] The US-Singapore FTA has also ushered in an age where even greater emphasis is placed on intellectual property protection, and the IPOS is likely to play a pivotal role. IPOS may well assume a larger role as an examiner of patent claims whose decisions are given considerable weight by the courts (for example the patents it has granted are presumed to be valid). Prosecution history may well come to the fore as an important interpretational tool. In any event, even if this does not materialise, the biggest patent battles are fought not because local patents are infringed, but because foreign patents are infringed. When patents granted by other offices, such as the USPTO or the European Patent Office, form the subject matter of an infringement dispute before the Singapore courts, it may be worthwhile (barring practical considerations) to consider the patent application files of these offices in construing the patent claims.

62 In relation to the use of equivalents as a guide to construction, it would appear that by virtue of the new Art 2 of the Protocol, the concept of equivalence may now find its place in the general scheme of the purposive approach, at any rate in the UK. However, Art 2 could potentially be more grounded in comity amongst members of the European community, rather than in law, in that it represents a compromise between advocates of the purposive approach and detractors who support the doctrine of equivalents.[96] We have mentioned earlier[97] that Singapore might have been justified in adopting the policy of balancing fair patentee protection and reasonable certainty for third parties as espoused by Art 69 of the Protocol, because it is sensible, if not a universal feature of patent law systems. In contrast, Art 2 appears to be borne out of other considerations and circumstances in the European

95 *Singapore Parliamentary Debates*, *Official Report* (8 March 2000), vol 71 at col 1461.

96 The doctrine of equivalents has gained significance in European approaches to construction of patent claims. In France, there is said to be equivalence when different means have the same function and produce the same result: *supra* n 47, at 238.

97 See para 54 of the main text above.

community that do not apply to Singapore. Instead of following suit to subsume the concept of equivalence within the purposive approach, Singapore should recognise that it is in an advantageous position to consider whether she should in fact do so.

V. Conclusion

63 Much can be said about developing our own autochthonous approach to interpreting patent claims, although we have generally adopted English jurisprudence in this regard. However, as English courts align patent law with European decisions because of the UK's obligations under the EPC and the Protocol, Singapore should consider whether she should continue to be guided by English jurisprudence. The US-Singapore FTA is pertinent to Singapore, but it is silent on and does not specifically mandate how patent claims should be interpreted. Singapore is therefore at the cross-roads, and is in a unique position to decide for herself the way forward for patent claim interpretation in Singapore.

64 In the course of this article, we have highlighted some aspects of the *Kirin-Amgen* decision. We have embarked on a humble endeavour to express our thoughts on them, both generally and in the specific context of Singapore, in the hope that this will be of some use to decision-makers when an opportunity arises to fully consider how patent claims should be interpreted in Singapore.