NOTE

GENTRY GALLERY AND THE WRITTEN DESCRIPTION REQUIREMENT

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I. INTRODUCTION

The nature of a patent grant is quid pro quo. Congress grants a limited

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monopoly to the patent owner in exchange for full disclosure of the invention.[1] The patent monopoly is limited in that it has a specific duration[2] and a specific scope as defined by the patent's claims.[3] The monopoly entitles the owner to make, use, and sell the claimed invention to the exclusion of all others.[4] A full disclosure includes a description of the invention as well as descriptions of the processes of making and using the invention.[5] The disclosure ensures that the public will be enriched both by the knowledge of the invention and the freedom to use it once the limited monopoly ends.[6] Thus, the United States patent system is designed to give inventors a limited monopoly on an invention as an incentive to innovate; in turn, the inventions enhance the store of knowledge in the public domain.[7]

A patent's scope delineates the boundaries of the patentee's limited monopoly, thereby determining the economic worth of a patent.[8] A recent Federal Circuit case, *Gentry Gallery, Inc. v. Berkline Corp.*,[9] has caused alarm among patent practitioners who fear that *Gentry's* written description test, which defines patent scope using the patent specification in addition to the claims, will have the applied effect of narrowing patent scope.[10] Practitioners perceive that the *Gentry* decision has elevated the written description standard for all arts to a uniquely high standard that had previously been applied only to the unpredictable arts.[11]

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[1] *See* 3 DONALD S. CHISUM, CHISUM ON PATENTS § 7.01 (2000).

[2] A utility patent, *see infra* note 16, filed on or after June 8, 1995 is valid for twenty years from the effective filing date of the application. *See* 4 CHISUM, *supra* note 1, § 16.04. For patents filed before June 8, 1995, the patent term is the greater of seventeen years from the date the patent issues or twenty years from the effective filing date. *See id.*

[3] *See* 35 U.S.C. § 112 (1994) (requiring that a patent applicant include in the specification "one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention"). In an analogy to real property, the patent claims set out the "metes and bounds" of the patented invention. *See* ROBERT P. MERGES ET AL., INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE 132 (2000).

[4] *See* MERGES ET AL., *supra* note 3, at 133.

[5] *See id.* at 131-32.

[6] *See id.*

[7] *See* Brian P. O'Shaughnessy, *The False Inventive Genus: Developing a New Approach for Analyzing the Sufficiency of Patent Disclosure Within the Unpredictable Arts*, 7 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 147, 149 (1996).

[8] *See* Cindy I. Liu, *Gentry Gallery, Inc. v. Berkline Corp.*, 14 BERKELEY TECH. L.J. 123, 123 (1999).

[9] 134 F.3d 1473, 1479 (Fed. Cir. 1998) (setting forth the written description test).

[10] *See, e.g.*, Liu, *supra* note 8, at 123; Laurence H. Pretty, *Cases Concerning "Written Description" and "Means" Requirements Trim Patent Scope*, PRETTY & SCHROEDER P.C.'S PATENT & TRADEMARK REPORT, Spring/Summer 1998, *available at* <http://www.psp-iplaw.com/publications.html>.

[11] *See, e.g.*, Laurence H. Pretty, *The Recline and Fall of Mechanical Genus Claim Scope*

These concerns regarding *Gentry* are misplaced. This note will show that *Gentry* was correctly decided and that the written description requirement is a valid, established tool which is useful in determining the scope of the claims. *Gentry*, and use of the written description requirement in this manner, may indeed have the effect of narrowing patent scope. However, despite certain ramifications of narrowed patent scope (e.g., the potential of creating a tragedy of the anticommons), *Gentry* is an important and valid decision in that it furthers uniform treatment for all arts. Further, a strict written description standard is imperative for protecting the public from inventors who may add claims to their original specification that cover an invention that the inventor did not originally possess.

This note will examine the development and effects of a single written description standard for the predictable and unpredictable arts. Part II will introduce the process of obtaining a patent and the written description requirement. Part III will examine *Gentry* and the new era of written description requirement analysis in the predictable arts that has followed. Part IV will examine the alarm *Gentry* has caused among patent practitioners. Part V will then analyze the effects a single, more stringent written description standard may have on the patent practice. Part VI will conclude that there are sound public policy reasons favoring a single and strict written description standard.

II. PATENTS AND THE WRITTEN DESCRIPTION REQUIREMENT

A. *Patent Procurement*

Congress grants patents to inventors through the United States Patent and Trademark Office ("PTO").[12] The process of obtaining a patent begins when an inventor submits an application to the PTO. The application undergoes the process of "prosecution," wherein a patent examiner negotiates with the inventor as to what claims will be allowed.[13] The patent examiner evaluates the "prior art" to ensure that the application discloses a new invention, and determines whether the invention complies with certain statutory requirements of the Patent Act (discussed below).[14] If the examiner approves the

Under "Written Description" in the Sofa Case, 80 J. PAT. [& TRADEMARK] OFF. SOC'Y 469, 469 (1998).

[12] The United States Constitution allows Congress to maintain a patent system. *See* U.S. CONST. art. I, § 8, cl. 8.

[13] *See* ROBERT PATRICK MERGES, PATENT LAW AND POLICY 36 (2d ed. 1997) ("The process is helped immensely by the fact that examiners are specialists; they concentrate only on particular technologies, or commonly even a precise corner of a particular technology.").

[14] Prior art comprises references that deal with the same or similar subject matter as the applicant's invention. *See* 1 CHISUM, *supra* note 1, § G1. Prior art may be patents and publications from anywhere in the world, or may be articles that are known or used in the

application, the PTO will issue a patent.[15]

To obtain a patent the inventor must provide a disclosure of an invention that satisfies four main statutory requirements: patentable subject matter, utility, novelty, and non-obviousness.[16] Additionally, the disclosure must enable the invention, as well as provide a written description.[17]

B. *Definition and History of the Written Description Requirement*

An applicant satisfies the written description requirement by providing a patent specification that contains detail sufficient to clearly describe to others skilled in the art to which the invention pertains the precise invention the applicant possessed when he filed his application.[18] The current PTO *Guidelines for Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1 "Written Description" Requirement* ("*Guidelines*")[19] provide that the written description requirement is met when the applicant discloses the identifying features of his invention.[20] The *Guidelines* do not require that an applicant disclose "every nuance of the claims" in the specification.[21] An

United States (e.g., other inventions). *See id.*

[15] *See* MERGES, *supra* note 13, at 36.

[16] These requirements are codified at 35 U.S.C. § 101 (1994) (subject matter and utility); *id.* § 102 (novelty); *id.* § 103 (non-obviousness). The subject matter requirement of section 101 applies to "utility" patents, the most common type of patent. *See* MERGES ET AL., *supra* note 3, at 333. A second type of patent, the "design" patent, is available to protect "[t]he aesthetic appearance of a product rather than its functional features." *Id.* Plant patents are also available to protect "'any distinct and new' variety of asexually reproducing plant." *Id.* at 340 (quoting 35 U.S.C. § 161 (1998)). Because the standards of patentability for design and plant patents are different from those of utility patents, these types of patents are not addressed in this note. *See* MERGES ET AL., *supra* note 3, at 333, 340.

[17] These requirements are set out in 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

35 U.S.C. § 112 (1994). Section 112 has been interpreted as requiring three distinct elements in a patent application: a written description requirement, an enablement requirement, and a best mode requirement. *See* 3 CHISUM, *supra* note 1, § 7.01. The written description requirement, which was the focus in *Gentry*, is the focus of this Note.

[18] *See* Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991).

[19] *See* Revised Interim Guidelines for Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1, "Written Description" Requirement, 64 Fed. Reg. 71,427 (1999) [hereinafter "Guidelines"].

[20] *See id.* at 71,434 ("An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations.").

[21] *Id.* at 71,435.

applicant need not disclose details when they are so obvious that skilled artisans would know that the applicant knew and understood such obvious details at the time of filing.[22] Whether a specification complies with the written description requirement is a question of fact and is reviewable only for clear error.[23]

There are several functions of the written description requirement. First, the written description originally served the function that is served by claims today.[24] Before claims became a statutory requirement,[25] the patent statute required only a specification.[26] In 1822, the Supreme Court noted two objectives of the specification: enablement and public notice of what the inventor claimed as the boundaries of his invention.[27] Today the specification still serves the goal of enablement.[28] As noted above, enabling others to make and use the invention is a distinct statutory requirement for obtaining a patent.[29]

In regard to the historical function of putting the public on notice, there has been a debate as to whether the specification should still be used for this purpose.[30] Once the patent statute required claims as part of the specification,

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[22] *See id.* The Patent and Trademark Office ("PTO") uses the point of view of any person skilled in the art to which the invention pertains in order to determine compliance with the written description requirement. *See id.* at 71,434; *see also* John O. Tresansky, *PHOSITA – The Ubiquitous and Enigmatic Person in Patent Law*, 73 J. PAT. [& TRADEMARK] OFF. SOC'Y 37, 43 (1991) (discussing the ambiguities inherent in this standard).

[23] *See Vas-Cath, Inc.*, 935 F.2d at 1563.

[24] *See* 3 CHISUM, *supra* note 1, § 8.01.

[25] The Patent Act of 1836 was the first act to require an inventor to submit claims. *See* 3 *id.* § 8.02[2].

[26] *See id.* The specification is the part of the application that describes and enables the invention. *See* 1 *id.* § G1. Today the definition of "specification" also includes the claims. *See id.*

[27] *See* Evans v. Eaton, 20 U.S. (7 Wheat.) 356, 434 (1822). One court noted that the second objective of the specification was:

> [T]o put the public in possession of what the party claims as his own invention . . . . [F]or the purpose of warning an innocent purchaser, or other person using a machine, of his infringement of the patent; and at the same time of taking from the inventor the means of practising upon the credulity or the fears of other persons, by pretending that his invention is more than what it really is, or different from its ostensible objects . . . .

Id. Thus, "[t]he courts read [the earliest patent statutes] as imposing a duty to include language equivalent to claims." *See* 3 CHISUM, *supra* note 1, §8.02.

[28] *See supra* note 17 and accompanying text.

[29] *See supra* note 17 and accompanying text.

[30] *See, e.g., In re* Barker, 559 F.2d 588, 594 (C.C.P.A. 1977) (Rich, J., concurring) ("[T]he words of § 112 derive from an era when it was the habit of the legal fraternity to indulge in redundancies.").

courts began placing exclusive weight on the claims to define the invention.[31] Thus, some judges have, at times, suggested that the written description aspect of the specification is a historical vestige, unnecessary in light of the claims requirement.[32] Other judges have rejected this notion based on a strict reading of the statute principled by the doctrine that Congress does not use superfluous words.[33] These judges have held that the written description still serves to delineate the boundaries of the invention by giving context to the claims.[34] This split in opinion frames practitioners' reactions to *Gentry*'s written description test, where the court used the written description to give context to the claims.[35]

Another recognized function of the written description requirement is to convey to the public that the applicant actually invented the subject matter he claims and to prevent him from claiming subject matter that he did not invent.[36] Thus, the written description requirement is a test that allows courts and the PTO to "'guard[] against the inventor's overreaching'" by ensuring that the original description of his invention contains enough detail to encompass his future claims.[37]

There are three basic situations in which a court uses the written description to determine if an inventor is overreaching. First, courts have used the written description test to analyze issued claims that did not appear in the application

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[31] *See, e.g.*, Brooks v. Fiske, 56 U.S. (15 How.) 212, 215 (1853) (noting that the specification and drawings are to be used "only for the purpose of enabling us correctly to interpret the claim").

[32] *See, e.g., Barker*, 559 F.2d at 594 (Rich, J., concurring).

[33] *See, e.g., id.* at 594-95 (Markey, C.J., dissenting).

[34] *See, e.g.*, Carnegie Steel Co. v. Cambria Iron Co., 185 U.S. 403, 432 (1902) ("The claim of a patent must always be explained by and read in connection with the specification . . . .").

[35] *Compare* Laurence H. Pretty, *Federal Circuit Narrows the Protection of Patents Closer Towards Their Specific Disclosures*, L.A. DAILY J., Apr. 20, 1998 ("[*Gentry* has] weakened the breadth of [the principle that claims mark the boundary of the protected subject matter] by invoking a section of the [patent] statute which requires the specification to provide a 'written description of the invention.'"), *available at* <http://www.psp-iplaw.com/pdf/courts.html>, *with* John D. Vandenberg & James E. Geringer, *Biplane Sinks Submarine: The Omitted Element Prong of Patent Law's Written Description Requirement*, *in* TRIAL OF A PATENT CASE 1998, at 247, 247 (ALI/ABA Course of Study No. SD20) ("[A] patent claim may not omit any non-optional element of the invention described in the patent application. That has been the law for at least one hundred years.").

[36] *See* Purdue Pharma., L.P. v. F.H. Faulding & Co., 48 F. Supp. 2d 420, 427 (D. Del. 1999) ("The policy behind the written description requirement is to prevent overreaching and *post hoc* claims that were not part of the original invention.").

[37] Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1561 (Fed. Cir. 1991) (quoting Rengo Co. v. Molins Mach. Co., 657 F.2d 535, 551 (3d Cir. 1981)).

as originally filed.[38] In this situation the court invalidates claims directly under the written description requirement. Second, courts have used the written description analysis where the applicant has sought to use the filing date of an earlier-filed application for claims of a later-filed application.[39] Third, the written description requirement becomes important in an interference proceeding, which is a contest to determine who has a better claim to the invention when two or more applicants seek to patent the same or a very similar invention.[40] In the context of interferences, courts use the written description test to determine whether the party's specification supports the "count," or precise invention at issue in the interference.[41] In the second and third cases, courts do not necessarily use the written description requirement to invalidate claims; rather, they use it as a policing tool to determine whether the applicant deserves the earlier effective filing date.

In each of these three cases, there is a risk that the later claims added by the inventor may not be supported by the disclosure of the earlier application. In cases of later-added claims, an applicant can attempt to gain the benefit of his earlier-filed application date for the new claims.[42] An applicant would be interested in obtaining the earliest possible filing date because "inventors race against each other as well as the advancing tide of prior art" in competing for

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[38] *See id.* at 1560. During prosecution an applicant can add new claims or amend existing claims during the "negotiation" with the examiner as long as the specification supports the new claims. *See* MERGES, *supra* note 13, at 36. Note that the written description test can also be applied to claims that were filed with the original application:

> [T]he issue of a lack of adequate written description may arise even for an original claim when an aspect of the claimed invention has not been described with sufficient particularity such that one skilled in the art would recognize that the applicant had possession of the claimed invention. . . . This problem may arise where an invention is described solely in terms of a method of its making coupled with its function and there is no described or art recognized correlation or relationship between structure of the invention and its function.

Guidelines, 64 Fed. Reg. 71,427, 71,434 (1999).

[39] *See, e.g., Vas-Cath, Inc.*, 935 F.2d at 1560. This happens in cases where the patentee seeks to use the filing date of an earlier foreign-filed application for his later U.S.-filed application. *See* 4 CHISUM, *supra* note 1, § 14.01. It also happens in cases of continuing applications. *See* MERGES, *supra* note 13, at 36 ("[An applicant] can . . . file a continuation of the original application, changing only the claims; she can change her specification, and re-file her patent application as a so called continuation-in-part or C-I-P application."); *see also* 4 CHISUM, *supra* note 1, § 13.01 ("If the continuing application meets the requirements of continuity of disclosure, copendency, cross-referencing, and identity of inventorship, it will gain the benefit of the filing date of the prior application in determining patentability and priority.").

[40] *See Vas-Cath, Inc.*, 935 F.2d at 1560; *see also* 3 CHISUM, *supra* note 1, § 10.09[1][a].

[41] *See* 3 CHISUM, *supra* note 1, § 10.09[1][a].

[42] *See* 35 U.S.C. § 120 (1994); *see also, e.g., Vas-Cath, Inc.*, 935 F.2d at 1560.

patents.[43]Thus the written description test is a useful tool in policing later-added claims.[44]

The written description test has not been uniformly applied to all claims. Courts have applied the test with different levels of vigor depending upon which "art" the claimed invention relates to, as will be discussed below.

C. *Dual Written Description Standards Exist for the Predictable and Unpredictable Arts*

Several cases have drawn attention to the written description requirement by creating a higher standard for inventions in the unpredictable arts than for inventions in the predictable arts.[45] The predictable arts are those wherein modifications to a system will have recognized, predictable effects.[46] The mechanical field is considered to be a predictable art, for example, because changes among known mechanical components usually produce expected results.[47] In the unpredictable arts, however, "there is insufficient learning to explain, a priori, the effect that changed variables will have within a system."[48] Pharmacology is considered an unpredictable art, for example, because small changes in the structure or dose of a drug may have unknown effects in a body.[49] Some unpredictable arts can make the transition to predictable arts as more becomes known about the effects of changed variables.[50] Other arts,

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[43] MERGES, *supra* note 13, at 381; *see also* Janice M. Mueller, *The Evolving Application of the Written Description Requirement to Biotechnological Inventions*, 13 BERKELEY TECH. L.J. 615, 622 (1998) ("[Analyzing later-added claims for patentability involves] comparison of the claims . . . with the state of technology before the invention date. Absent written description scrutiny, a later-presented claim not truly entitled to the earlier filing date of the application would be improperly examined against a smaller universe of prior art than is legally available.").

[44] Note that the written description requirement can also be applied to claims filed with the original application. *See supra* note 38. One commentator has noted that this practice blurs the distinction between the written description and enablement requirements. *See* Mueller, *supra* note 43, at 633-39.

[45] *See* discussion *infra* Section II-C-2.

[46] *See In re* Fisher, 427 F.2d 833, 839 (Fed. Cir. 1970) (noting that with regard to variations on inventions "involving predictable factors, such as mechanical or electrical elements, . . . performance characteristics [can be] predicted by resort to known scientific laws").

[47] *See id.*; *see also* O'Shaughnessy, *supra* note 7, at 151.

[48] O'Shaughnessy, *supra* note 7, at 151.

[49] *See, e.g.*, Burroughs Wellcome Co. v. Barr Labs., Inc., 40 F.3d 1223, 1228 (Fed. Cir. 1994) (noting the unpredictability of chemistry and biology due to "the uncertain relationship between chemical structure and biological activity").

[50] *See, e.g.*, Patent & Trademark Office Society, *Statement of the P.T.O.S. to the U.S.P.T.O. on Interim Guidelines for Examination of Patent Applications Under the 35 U.S.C. 112, First Paragraph "Written Description" Requirement*, 81 J. PAT. [&

however, are doomed to remain unpredictable.[51] Although the *Guidelines* urge examiners to apply the same written description standard to all arts,[52] case law has set forth dual standards for the predictable and the unpredictable arts, as will be discussed below.

1. The Predictable Arts Standard

In re Smythe, an appeal from the PTO Board of Appeals to the Court of Customs and Patent Appeals ("CCPA"),[53] held that the written description requirement was less applicable to inventions in the predictable arts than to inventions in the unpredictable arts.[54] The invention at issue involved a machine that automatically analyzed liquid samples (such as blood or other body fluid) for known substances.[55] The original claims and the specification disclosed that successive samples would be segmented from one another by air or other gas that is inert to the liquid samples.[56] This segmenting served to physically separate the samples from one another and to wash the tubing between samples.[57] The applicants amended the claims during prosecution,

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TRADEMARK] OFF. SOC'Y 140, 142 (1999) (discussing how advances in technology have made certain DNA inventions routine today); *see also* O'Shaughnessy, *supra* note 7, at 151.

[51] *See* O'Shaughnessy, *supra* note 7, at 151; *see also* William D. Marsillo, *How Chemical Nomenclature Confused the Courts*, 6 U. BALT. INTELL. PROP. L.J. 29, 30 (1997) ("[C]hemistry is an unpredictable art; small changes in structure can dramatically affect a compound's properties.").

[52] *See* Guidelines, 64 Fed. Reg. 71,427, 71,427 (1999) ("This revision reflects the current understanding of the PTO regarding the written description requirement of 35 U.S.C. § 112, P 1 and is applicable to all technologies.").

[53] 480 F.2d 1376 (C.C.P.A. 1973). The Court of Customs and Patent Appeals is the predecessor of the Court of Appeals for the Federal Circuit, which was created by Congress in 1982 and given exclusive jurisdiction over patent appeals cases. *See* Michael J. Schutte, Casenote, *Patent Law: Controversy in the Federal Circuit Over Product-By-Process Claims*, 19 U. DAYTON L. REV. 283, 283 (1993).

[54] In discussing the appellant's invention, the court noted:

> This is not a case where there is any unpredictability such that appellants' description of air or other inert gas would not convey to one skilled in the art knowledge that appellants invented an analysis system with a fluid segmentizing medium. In other cases, particularly but not necessarily, chemical cases, where there is unpredictability in performance of certain species or subcombinations other than those specifically enumerated, one skilled in the art may be found not to have been placed in possession of a genus or combination claimed at a later date in the prosecution of a patent application.

Smythe, 480 F.2d at 1383.

[55] *See id.* at 1377. The application involved in the dispute eventually issued as United States Patent No. 3,804,593 on Apr. 16, 1974.

[56] *See Smythe*, 480 F.2d at 1377.

[57] *See* United States Patent No. 3,804,593.

broadening the segmenting medium from inert *gas* to inert *fluid*.[58] The patent examiner rejected these amended claims under the written description requirement because nowhere did the original specification mention inert fluids.[59] The examiner noted that although the term "fluid" can properly include both liquids and gases, the specification never defined "fluid" to include liquids.[60] The *Smythe* court ultimately reversed the examiner's decision, noting that because the invention did not involve any unpredictability, a skilled artisan would know that the applicant had invented a system with a segmenting medium that included inert fluids.[61] The court stated that the examiner's approach would force applicants to list every structural or functional equivalent of every element of their invention, thereby placing an undue burden on applicants, the Patent Office, and the public.[62]

The court rationalized that although inert fluids were never explicitly disclosed in the patent specification, those skilled in the art would readily infer that the use of inert fluids was within the scope of the patent because fluids are well-suited to perform the essential functions of the invention.[63] The majority said that those skilled in the art would infer that fluids were included based on their knowledge that inert fluids are "impliedly described by the properties which define [inert gases] . . . ."[64] The dissent, to the contrary, stated that the relevant properties that define inert gases were never explicitly disclosed in the specification and, therefore, refuted the finding that one skilled in the art would

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[58] *See Smythe*, 480 F.2d at 1378, 1382.

[59] *See id.*

[60] *See id.* at 1382 (quoting the Patent Office solicitor's brief as stating: "The important point here is that appellants did not recite the use of 'fluid' broadly as a segmenting medium in describing their invention.").

[61] *See id*. at 1383.

[62] *See id.* at 1384 ("[D]escriptions of the very many structural or functional equivalents of disclosed elements or steps which are already stored in the minds of those skilled in the arts, ready for instant recall upon reading the descriptions of specific elements or steps [need not be listed].").

[63] In discussing compliance with the written description requirement, the court noted:

> The essential function of separating discrete samples from each other is performed because the medium takes the shape of the supply lines and the flow cell through which it passes, while to some extent resisting any force which may tend to change its volume. . . .
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> . . . .
>
> We believe that the use of an inert *fluid* broadly in this invention would naturally occur to one skilled in the art reading the description of the use of air or other gas *as a segmentizing medium* to separate the liquid samples . . . . [T]he specification clearly conveys to one skilled in the art that in this invention the characteristics of a fluid are what make the segmentizing medium work in this invention.

Id. at 1383.

[64] *Id.* at 1387 (Baldwin, J., dissenting in part) (discussing the majority's opinion).

recognize that the patent application taught inert fluids in addition to inert gases.[65] *Smythe* exemplifies a court holding an invention considered to be in the predictable arts to a more lenient written description standard than it might have applied to an invention in the unpredictable arts.

It may seem incongruent that although the invention in *Smythe* involves unpredictable chemical entities such as liquids and inert gases, the court considered it to be in the predictable arts. It may help to note that the rejected claims were directed towards both a method of an analysis and an apparatus in which to perform the analysis.[66] Although claim thirty-four, for example, was nominally drawn to a method, the court may have considered the apparatus to be the real innovation. This interpretation of claim thirty-four would make fluid analysis devices the relevant art and could explain why the court gave the claim a less rigorous written description analysis than it would have if the claim was focused more on the chemistry involved in the invention. The PTO, on the other hand, seemed more concerned with the chemistry of the invention. The examiner was concerned, for example, that "[t]he term 'inert fluid' encompasses [both] *colored* materials [that could] *adhere*[] to the walls of the sight tube, [and] thus . . . render appellants' process inoperative, as well as liquid *wetting agents*, which appellants disclose . . . must be absent for proper operation."[67] Although the examiner made this statement in the context of the enablement requirement of 35 U.S.C. § 112, it illuminates the PTO's concerns regarding the unpredictability of variants in the chemical arts.

In another appeal from the PTO Board of Appeals, the court in *In re Barker* invoked the written description requirement to invalidate claims directed towards a method of making prefabricated wooden shingles.[68] The court was

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[65] *See id.* at 1386-87.

[66] *See id.* at 1377. The patent examiner rejected method claim 34, for example, under the written description requirement. *See id.* at 1378. The full claim 34 reads:

> A method of automatic quantitative analysis of a plurality of liquid samples each disposed in a respective container, wherein said samples are off-taken by an off-take device and are transmitted successively as a flowing stream to an analytical device including a flow cell having a sight passageway, said method including:
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> for each sample container in succession, coupling said off-take device to such sample containder [sic], and in alternation therewith, to a source of an *inert fluid immiscible with said liquid samples*, thereby to off-take a segment of each of said liquid samples and intermediate segments of the inert fluid;
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> transmitting said segments of the liquid samples and inert fluid as a flowing stream to said analytical device; and
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> passing said flowing stream including segments of both the liquid samples and inert fluid through the sight passageway of the flow cell, the volume of at least one homogeneous portion of each liquid sample being at least equal to the volume of the sight passageway of the flow cell.

Id. at 1377-78.

[67] *Id.* at 1385 (quoting the PTO).

[68] *See In re* Barker, 559 F.2d 588, 593 (C.C.P.A. 1977).

split, however, in its attitude towards the written description requirement. The court held that the written description "is a statutory requirement duly *recognized* by the courts—and not only in chemical cases."[69] The court further noted that the patent statute sets forth a single written description standard that is to be applied to all arts, whether predictable or unpredictable.[70] A concurring judge agreed that a description requirement, distinct from the enablement requirement, exists in 35 U.S.C. § 112.[71] He disagreed with the majority, however, that the same standard is to be applied to both predictable and unpredictable inventions, suggesting instead a case-by-case approach in analyzing the sufficiency of the disclosure.[72]

The dissent denied the statutory existence of the written description requirement, claiming it to be an unnecessary judicial response to chemical cases.[73] The dissent interpreted the first paragraph of 35 U.S.C. § 112[74] as requiring only enablement.[75] This is a fair interpretation; in a literal reading the first paragraph of 35 U.S.C. § 112, the phrase "written description of the invention" can indeed be seen as modifying the enablement requirement.

Case law and the PTO have explicitly recognized the written description

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[69] *Id.* at 593 n.6.

[70] *See id.* at 593.

[71] *See id.* at 594 (Rich, J., concurring).

[72] *See id.* ("Attention must be paid to the key words 'such' and 'as to' in the phrase 'such full, clear, concise, and exact terms as to enable,' which compel case-by-case treatment of the issues of the sufficiency of description and enablement which, I agree, are distinct though commingled requirements.").

[73] *See id.* at 595 (Markey, C.J., dissenting).

[74] *See supra* note 17.

[75] *See Barker*, 559 F.2d at 594. Judge Markey argued:

> There is no surplusage in saying, as the Congress in effect did, ". . . a written description of the invention . . . in such full, clear, concise, and exact terms as to enable." . . . On the contrary, Congress *saved* words by specifying, in a single prepositional phrase, that the description of the invention, and the description of the manner of making and using it, shall *both* be in "such full, clear, concise, and exact terms as to enable."

Id. Indeed, there is a tension between the written description and enablement requirements today. Even when courts recognize the two requirements as distinct, commentators have nonetheless claimed that courts have inadequately distinguished the two, especially when the written description requirement is used to analyze claims that were filed with the original application. *See, e.g.*, Mueller, *supra* note 43, at 633. The author notes that "[b]oth precedent and policy strongly favor limiting application of the written description requirement to claims presented or substantively amended after the original filing date of an application. As illustrated by *Lilly* [a leading written description case from the biotechnological arts], to do otherwise results in an unacceptable blurring between the written description and enablement requirements." *Id.* at 634. For another discussion on the distinction and confusion surrounding the written description and enablement, *see* O'Shaughnessy, *supra* note 7, at 182-98.

requirement, however, and it serves important functions today, as will be discussed below in Part III.[76] Even if the written description requirement is a judicial creation, the dissent is incorrect in preferring to use the written description solely in the context of enablement.[77] As will be discussed later, a separate written description test is indispensable in protecting the public from inventors who try to claim more than they actually invented.[78]

More than ten years after *Barker*, the Federal Circuit decided a case that is highly influential in written description commentary.[79] *Utter v. Hiraga* is frequently cited by those who believe that inventions in the mechanical and other predictable arts should not be held to a strict written description standard.[80] *Utter* also involved an appeal from PTO Board of Appeals ("Board").[81] The court affirmed the Board, awarding Hiraga priority and therefore rightful ownership of the invention.[82] The court found that Hiraga's application satisfied the written description requirement for an external pivot configuration in a compression scroll even though the application disclosed only an internal pivot configuration.[83] The court held that "[a] specification may, within the meaning of 35 U.S.C. § 112, ¶ 1, contain a written description of a broadly claimed invention without describing all species that claim encompasses."[84]

This case is a major block in the path toward a coherent body of written description analysis. Note that the opinion was authored by Chief Judge Markey, who in a departure from his *Barker* dissent now acknowledges the existence of the written description requirement.[85] The above quote from *Utter* is frequently cited by opponents of the extension of the strict unpredictable arts

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[76] *See* Guidelines, 64 Fed. Reg. 71,427, 71,434 (1999).

[77] Judge Markey, the dissenting judge, stated: "We should not hesitate to recognize that it would have been better if the court had held, in certain past chemical cases, that whatever 'enablement' was present, it was not in 'full, clear, concise and exact terms,' rather than to have created a 'separate description' gloss." *Barker*, 559 F.2d at 595.

[78] The enablement test alone is not sufficient because "'it is possible for a specification to *enable* the practice of invention as broadly as it is claimed, and still not *describe* that invention.'" *See* Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1561 (Fed. Cir. 1991) (quoting *In re* DiLeone, 436 F.2d 1404, 1405 (C.C.P.A. 1971)).

[79] *See* Utter v. Hiraga, 845 F.2d 993, 998-99 (Fed. Cir. 1988).

[80] *See, e.g.*, Pretty, *supra* note 10.

[81] *See Utter*, 845 F.2d at 994. *Utter* involved an interference between three parties wherein each party claimed priority in inventing a certain scroll compressor for use in air conditioning units. *See id.* at 994-95.

[82] *See id.* at 994.

[83] *See id.* at 998-99.

[84] *Id* at 998.

[85] *See id.* at 994.

written description standard to the predictable arts.[86] The statement is used for the proposition that an applicant with a predictable art invention can properly claim a genus without describing all the species that fall within it because those skilled in the predictable art should readily see obvious variants encompassed within the claim.[87]

Whether the art involved is predictable or not, however, the written description requirement is a valid and useful test for determining whether the inventor was in possession of the claimed invention at the time of filing. Whether or not variations on the invention become obvious to skilled artisans after they read the disclosure of the invention, and perhaps after they mentally combine the disclosure with other references from the same art, is a question better dealt with under 35 U.S.C. § 103 (the nonobvious requirement of patentability).[88] An example from *Smythe* may clarify this argument. The *Smythe* court remarked that the use of inert fluids would be apparent to those skilled in the art based on the *Smythe* disclosure in combination with a prior art patent from Kessler, which disclosed a liquid segmentizing medium.[89] The court seemed to confuse a nonobvious analysis, which did not apply in the context of *Smythe*, with the written description analysis. Here, if the *Smythe* inventor had originally included the term "liquids" in his specification, the amended claims may have been rejected as obvious in light of the Kessler patent. Simply because an invention may be found obvious under 35 U.S.C. § 103 if claimed by a later inventor does not mean that it was invented by the inventor at the time of filing. Alternatively, the amended claims may have been better rejected as anticipated by the Kessler patent under the novelty requirement of the Patent Act.[90]

In either case, although skilled artisans may think of alternative variations on the invention does not mean that the inventor had previously thought of

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[86] *See e.g.*, Pretty, *supra* note 11, at 477.

[87] *See id.*

[88] Section 103 governs the requirement of nonobviousness. It states, in relevant part:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

35 U.S.C. § 103(a) (Supp. IV 1999).

[89] *See In re* Smyth, 480 F.2d 1367, 1383 (C.C.P.A. 1973). The court quoted Kessler's U.S. Patent No. 3,047,367 as stating:

> In accordance with the present invention and pursuant to one of the objects thereof, the use of air or other inert gas as the cleansing agent is dispensed with and replaced by a liquid, in order to obviate certain difficulties which may be encountered when air or other compressible fluids are employed as the cleansing agents.

Id.

[90] *See* 35 U.S.C. § 102 (1994); *see also supra* note 16.

them and, therefore, had possession of those variants. Inventors are allowed ownership of more than their specific embodiment, but in every case, the inventor is entitled to a monopoly only over what he has actually invented.[91]

2. The Unpredictable Arts Standard

Commentators have interpreted recent case law as instituting a higher standard for inventions in the unpredictable arts than for inventions in the predictable arts.[92] Biotechnology, as an emerging field, is considered an unpredictable art.[93] In *Fiers v. Revel*, a three-way interference was declared among inventors whose patent applications were directed towards DNA that codes for human fibroblast beta-interferon ("B-IF").[94] Inventor A's application disclosed the complete sequence of the B-IF DNA, along with a method of isolating it.[95] Inventor B disclosed a method of isolating a fragment of the DNA coding for B-IF, and a method of isolating the messenger RNA[96] that encodes B-IF, but did not disclose a complete B-IF DNA sequence.[97] Inventor C claimed conception of the invention and diligence towards a reduction to practice[98] based on a British application disclosing the entire nucleotide sequence of DNA coding for B-IF.[99]

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[91] *See* Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1478-79 (Fed. Cir. 1998).

[92] *See, e.g.*, Liu, *supra* note 8, at 135 ("The Federal Circuit's reliance on *Eli Lilly* in *Gentry* extends the limitations on written description in the unpredictable arts to the predictable arts."); Mueller, *supra* note 43, at 633 ("[The *Lilly* rule] sets a significantly higher standard for the protection of biotechnological inventions than for other technological subject matter."); O'Shaughnessy, *supra* note 7, at 228 ("Inventions within the unpredictable arts present unique challenges in meeting the Patent Act's disclosure requirements. Applications claiming an invention possessed of unpredictable factors will be carefully scrutinized . . . .").

[93] *See supra* Section II-C.

[94] *See* Fiers v. Revel, 984 F.2d 1164, 1166 (Fed. Cir. 1993). "[B-IF is] a protein that promotes viral resistance in human tissue." *Id.* Deoxyribonucleic acid ("DNA") contains the genetic information that a cell uses to synthesize proteins such as B-IF. *See, e.g.*, BRUCE ALBERTS ET AL., MOLECULAR BIOLOGY OF THE CELL 223 (3d ed. 1994).

[95] *See Fiers*, 984 F.2d at 1167.

[96] Messenger RNA ("mRNA") is an intermediate molecule in the protein synthesis process. *See* ALBERTS ET AL., *supra* note 94, at 106. It is copied from DNA that encodes a protein and is used as a template for the eventual protein synthesis. *See id.* at 223.

[97] *See Fiers*, 984 F.2d at 1167.

[98] In contrast to most other patent systems, the United States awards a patent to the first inventor, not the first party to file an application that covers the invention. *See* MERGES ET AL., *supra* note 3, at 189. In establishing the date of invention, "generally the first to embody the invention in an actual working version (i.e., the first to 'reduce to practice') is the winner." *Id.* Alternatively, the filing date of the application can be used as a constructive reduction-to-practice date. *See* Mueller, *supra* note 43, at 621-22.

[99] *See Fiers*, 984 F.2d at 1167.

The court awarded priority to Inventor A.[100] In doing so, the court reaffirmed its earlier holding in *Amgen, Inc. v. Chugai Pharmaceutical Co.*,[101] where it stated:

> It is not sufficient to define [a DNA sequence] solely by its principal biological property . . . because an alleged conception having no more specificity than that is simply a wish to know the identity of any material with that biological property. We hold that when an inventor is unable to envision the detailed constitution of a gene so as to distinguish it from other materials, as well as a method for obtaining it, conception has not been achieved until reduction to practice has occurred, i.e., until after the gene has been isolated.[102]

The court's holding, that it does not satisfy the written description requirement to describe the function of a gene without describing its structure, comports with the standard recommended by the PTO *Guidelines*.[103] The court explains that this holding is necessary because of the degeneracy, and resulting unpredictability, of the genetic code.[104]

The strict application of the written description requirement in unpredictable arts cases continued with the decision in *Regents of the University of California v. Eli Lilly and Co.* ("*Lilly*").[105] The claims of the patent at issue were directed towards human insulin cDNA,[106] but the specification did not provide a description of the cDNA itself.[107] Instead, the patent disclosed only

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[100] *See id.* at 1172.

[101] 927 F.2d 1200 (Fed. Cir. 1991); *see Fiers*, 984 F2d at 1171-72.

[102] *Amgen, Inc.*, 927 F.2d at 1206.

[103] *See Fiers*, 984 F.2d at 1168-69; Guidelines, Fed. Reg. 71,427, 71,435 (1999) ("An applicant may also show that an invention is complete by disclosure of sufficiently detailed relevant identifying characteristics which provide evidence that applicant was in possession of the claimed invention, *i.e.*, . . . *functional characteristics when coupled with a known or disclosed correlation between function and structure* . . . .") (emphasis added).

[104] Degeneracy refers to the fact that several different DNA sequences can code for the same amino acid (amino acids are the building blocks of proteins). *See* ALBERTS ET AL., *supra* note 94, at 106. mRNA is made up of four different types of nucleotides. *See id.* A set of three nucleotides (a "codon") in a particular linear order codes for each particular amino acid. *See id.* There are sixty-four different mRNA codons (4^3), but only twenty common amino acids. *See id.* Therefore, several codons code for the same amino acid. *See id.* Thus, knowing the function of a gene (i.e., which protein it codes for) does not necessarily tell you the structure of its corresponding DNA. *See id.*

[105] *See* 119 F.3d 1559 (Fed. Cir. 1997).

[106] Complementary DNA, or cDNA, is a DNA molecule that codes for a gene. *See* ALBERTS ET AL., *supra* note 94, at 310. cDNA is the product of DNA cloning. *See id.* cDNA differs from the genomic DNA that naturally occurs in cells in that it lacks introns, the non-coding DNA sequences that normally interrupt coding sections of genes. *See id.*

[107] *See Lilly*, 119 F.3d at 1567.

a method of isolating the cDNA and a description of the proteins that the cDNA encodes.[108] Following *Fiers*, the *Lilly* court invalidated these claims for lack of a description of the cDNA itself.[109]

The *Lilly* court then raised the written description standard even higher by invalidating claims directed generically to cDNA that codes for vertebrate insulin and mammalian insulin for lack of a written description.[110] The Regents of the University of California ("UC"), the patent owner, relied on *Utter* to argue that because the specification adequately described a species (rat insulin-encoding cDNA) that fell within the larger genera of mammalian and vertebrae insulin-encoding cDNA, the specification necessarily provided an adequate written description of those genera.[111] The court rejected UC's reliance on *Utter*, denying that *Utter* says that "a description of a species always constitutes a description of a genus of which it is a part."[112] Rather, the court interpreted *Utter* as "establish[ing] that every species in a genus need not be described in order that a genus meet the written description requirement."[113] In a comment that solidified the differing written description standards applied to the predictable and unpredictable arts, the court added that "*Utter* involves machinery of limited scope bearing no relation to the complex biochemical claims before us."[114]

In seeming contradiction to *Lilly's* suggestion that inventions in the predictable arts should be subject to a less stringent written description standard than inventions in the unpredictable arts, the mechanical-arts case *Gentry* was decided under the more stringent of the two standards, as will be discussed below.

III. THE NEW ERA IN PREDICTABLE ARTS: *GENTRY*

A. *Summary of* Gentry

Although commentators have criticized *Gentry* for raising the written description standard in the predictable arts to the higher standard used for the unpredictable arts,[115] the decision can be viewed in a positive light because a

[108] *See id.*

[109] *See id*.

[110] *See id.* at 1568.

[111] *See id*. at 1567-68.

[112] *Id.* at 1568.

[113] *Id.*

[114] *Id.*

[115] *See, e.g.*, Pretty, *supra* note 11, at 478 ("It is a . . . serious concern that the Court's opinion [in *Gentry*] attempts to extend reasoning applicable to the unpredictable arts to the predictable arts . . . ."); *see also* Liu, *supra* note 8, at 135 ("Since the *Gentry* patent . . . involves predictable art, the *Gentry* court should have followed *Utter*, rather than *Eli*

single, strict written description standard will protect the public against overreaching inventors. *Gentry* involved a mechanical patent for a sectional sofa having two recliners facing the same direction.[116] The court invalidated certain claims directed towards the recliner controls because they were unsupported by the inventor's original disclosure.[117] While the broadest claim of the patent did not limit the recliner controls to the console, the disclosure identified the console as the only location for the controls.[118] Indeed, even though the broadest claim in the originally-filed application explicitly limited the controls to the center console, the inventor testified that he had amended his application to locate the controls away from the console only after learning that competitors of Gentry (the owner of the patent) were doing so.[119]

To compensate for the disclosure's lack of variation in the placement of the controls away from the console, Gentry contended that its disclosure described only the preferred embodiment of the invention.[120] Gentry then argued that the claims broadening the location for the controls were supported as other embodiments of the invention.[121] Gentry argued that an application need only disclose the preferred embodiment, and that such an application can still support claims that are broader than the preferred embodiment.[122] The court agreed that broad claims could cover more than the disclosed preferred embodiment.[123] The court stated, however, that the precedent plaintiff relied upon stated that any other embodiments purported to be covered by the claims

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Lilly.").

[116] *See* Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1474-75 (Fed. Cir. 1998). This arrangement was an improvement over the prior art, where controls were placed on the exposed arms of an L-shaped couch. *See id.* Prior art recliners were located at opposite ends of the couch and thus faced different directions from each other. *See id.*

[117] *See id.* at 1479.

[118] *See id.* ("[T]he control 'may be mounted on top or side surfaces of the console rather than on the front wall . . . without departing from this invention.'") (quoting Gentry's U.S. Patent 5,064,244, col. 2, line 68 – col. 3, line 3).

[119] *See id.* It is proper to file an application, or to amend an existing application, to cover or preempt a competitor's product as long as such action otherwise complies with the requirements of the Patent Act. *See* Kingsdown Med. Consultants Ltd. v. Hollister, Inc., 863 F.2d 867, 874 (Fed. Cir. 1988) (finding that the application at issue could not be amended to cover a competitor's product because the amendment did not comply with the written description requirement).

[120] *See Gentry*, 134 F.3d at 1478.

[121] *See id.* at 1478-79.

[122] *See id.* Gentry relied on two cases, Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572 (Fed. Cir. 1993), and *In re* Rasmussen, 650 F.2d 1212 (C.C.P.A. 1981), "for the proposition that an applicant need not describe more than one embodiment of a broad claim to adequately support that claim." *Gentry*, 134 F.3d at 1478-79.

[123] *See Gentry*, 134 F.3d at 1479.

still had to be supported by the disclosure.[124] The court cited *Lilly* (a case in the unpredictable arts) to show that "the case law does 'not compel the conclusion that a description of a species always constitutes a description of a genus of which it is a part.'"[125] The court also cited *Ethicon Endo-Surgery, Inc. v. United States Surgical Corp.* for the proposition that "the applicant 'was free to draft claim[s] broadly (within the limits imposed by the prior art) to exclude the lockout's exact location as a limitation of the claimed invention' only because he 'did not consider the precise location of the lockout to be an element of his invention.'" [126] The court held that Gentry's disclosure made clear that Gentry considered the placement of the controls on the console to be an indispensable element of the invention; accordingly, the court found the claims to be invalid under section 112.[127]

Gentry was surprising to practitioners who felt that the court should not have applied such a strict written description analysis to a mechanical invention, as will be discussed in Part IV.This note will first discuss cases subsequent to *Gentry*.

B. *Subsequent Cases Interpreting* Gentry

Several predictable arts cases have followed and extended *Gentry*. This section will examine three of these: *Reiffin v. Microsoft Corp.*,[128] *Johnson Worldwide Assoc. v. Zebco Corp.*,[129] and *Tronzo v. Biomet, Inc.*[130]

In *Reiffin*, defendant Microsoft argued in the district court that because the claims at issue lacked elements that were essential to the invention as originally disclosed, the plaintiff's patent was invalid under the "omitted element test" of the written description requirement.[131] The district court acknowledged that disclosure of a specific embodiment does not limit

[124] *See id.* at 1480 ("[The cases relied upon by Gentry] make clear that claims may be no broader than the supporting disclosure, and therefore that a narrow disclosure will limit claim breadth.").

[125] *Id.* at 1479 (quoting Regents of the Univ. of Cal. V. Eli Lily & Co., 119 F.3d 1559, 1568 (1997)).

[126] *See id.* at 1479 (quoting *Ethicon*, 93 F.3d at 1582).

[127] *See id.*

[128] 48 U.S.P.Q. 2d (BNA) 1274 (N.D. Cal. 1998), *rev'd*, 214 F.3d 1342 (Fed. Cir. 2000).

[129] 175 F.3d 985 (Fed. Cir. 1999).

[130] 156 F.3d 1154 (Fed. Cir. 1998).

[131] *See Reiffin*, 48 U.S.P.Q. 2d at 1474-76. The invention was directed towards "multi-threading," which allows a computer to switch so rapidly between tasks as to give the illusion that the computer is doing two tasks at once. *See id.* at 1274-75. A computer using this technology could, for example, receive typed words in a word processing program while simultaneously spell-checking those words. *See id.* The elements disclosed in plaintiff Reiffin's original application that were missing from Reiffin's issued claims "included an editor, a compiler, an interrupt means and a return means." *Id.* at 1279.

allowable claims to a scope no broader than that embodiment.[132] The district court qualified this statement, however, by noting that this was only true in cases where the inventor did not consider omitted features of the disclosed embodiment to be essential to his invention.[133] Thus the district court followed *Gentry*, interpreting that case as holding "that patent claims are invalid under section 112 if they omit an element that someone skilled in the art would understand to be essential to the invention as originally disclosed."[134]

The district court styled *Gentry*'s holding as the "omitted element test" and maintained that the test did not originate with *Gentry*, but with precedent.[135] The district court cited *Ethicon* as an example of the application of this test:

> The [*Ethicon*] court held that the preferred embodiment alone did not necessarily limit the scope of the patent to staplers in which the lockout mechanism was on the cartridge. The *Ethicon* court noted, however, that it reached this decision because at the time of the application, the inventor did not consider the placement of the lockout mechanism on the cartridge to be an "element" of his invention. The obvious converse inference from this ruling was that if the inventor or someone skilled in the art would have considered the location of the lockout mechanism to be an element of the invention, then the patent owner could not have asserted claims that omitted this element.[136]

The district court summarized by stating that although an applicant's claims can be broader than the specific embodiments he presents, the claims can never be broader than the invention actually disclosed.[137]

The district court followed *Gentry*'s analysis in determining whether the claims at issue omitted certain elements that were essential to the invention as originally disclosed.[138] The district court first reviewed the disclosure of the invention, then the original claims, and finally, other evidence to determine whether the inventor had the alternate embodiment in mind at the time of his initial disclosure.[139] Based on evidence from these sources, the court concluded that the omitted elements were essential to Reiffin's invention as originally disclosed, and therefore invalidated the patent under the written

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[132] *See id*. at 1276-77.

[133] *See id*. at 1277.

[134] *Id*.

[135] *See id*.; *see also* Vandenberg & Geringer *supra* note 35, at 251-52 (contending that the omitted element test has existed in patent law for at least one hundred years).

[136] *Reiffin*, 48 U.S.P.Q. 2d at 1277.

[137] *See id*. at 1277-78.

[138] *See id*. at 1279.

[139] *See id.* The court found that the disclosure referenced all four of the omitted elements in several sections of the application, as well as in the one-paragraph abstract. *See id.* The court also found that all 21 original claims referenced the disputed elements. *See id.*

description requirement.[140]

The plaintiff in *Reiffin* argued in the district court that *Gentry* should be limited to its facts, because there the disclosure explicitly stated that the console was the "only possible location" for the controls.[141] The district court disagreed, maintaining that the *Gentry* patent did not expressly state that the console was the only possible location for the controls; rather, it was merely silent regarding controls located anywhere other than on the console.[142] The district court found the analogous situation in *Reiffin*: although the application did not expressly state that the only possible embodiment of the invention involved the four disputed elements, various sections of the application revealed that all four elements were essential to the invention.[143]

The Federal Circuit recently reversed and remanded the district court's decision in *Reiffin*.[144] The court held that the district court erroneously looked to the specification of the original application, and not the specification filed with the continuation application at issue.[145] The court explicitly refrained from addressing the validity of the "omitted element test."[146] Judge Newman wrote a separate concurring opinion, however, in which she discounted the existence of the omitted element test.[147] Judge Newman argued that the omitted element test threatens the standard practice of an applicant varying claims in scope and content.[148]

But Newman cites two passages from patent treatises, neither of which describe practices that would be threatened by using the omitted element test.[149] First, Newman cites a passage that describes the narrowing of claims through the addition of limiting elements.[150] This practice would not be threatened by the omitted element test, which is concerned with just the opposite – the omission, not the addition, of limiting elements. Second, Newman cites a passage from Walker on Patents that discusses the claiming of sub-processes or sub-combinations of the disclosed invention.[151] This practice also would not be threatened, as applicants can continue to use dependant claims directed towards sub-combinations. Also, the discussion in *Walker* says

[140] *See id*. at 1280.

[141] *See id*.

[142] *See id*.

[143] *See id*.

[144] *See* Reiffin v. Microsoft Corp., 214 F.3d 1342, 1343 (Fed. Cir. 2000).

[145] *See id*. at 1345.

[146] *See id*. at 1346.

[147] *See id*. at 1347-48.

[148] *See id*. at 1347.

[149] *See id*.

[150] *See id*. (relying on 1 IRVING KAYTON, PATENT PRACTICE §§ 3.1, 3.3 (6th ed. 1995)).

[151] *See id*. (relying on 3 ERNEST B. LIPSCOMB, III, LIPSCOMB'S WALKER ON PATENTS 290-91 (1985)) [hereinafter "WALKER"].

that "[e]ach claim should define a complete invention . . . ."[152] This statement goes to the crux of the written description requirement and the "omitted element test." Both tests ensure that the claim is accurately drawn to reflect the boundaries of what the inventor actually invented. The tests should still be used to determine if the inventor had possession of the sub-combination claimed and whether it rightfully belongs within the patent monopoly.

In a predictable arts case that explicitly distinguished *Gentry* based on the facts involved, the Federal Circuit upheld the validity of a broad claim directed towards an auto-pilot control apparatus for a trolling motor.[153] The appellant asserted that the lower court's construction of the claim at issue violated the written description requirement.[154] The court disagreed, finding that the written description provided ample support for the multiple uses of the disputed claim term.[155] The court, in distinguishing *Gentry*, stated:

> *Gentry Gallery*, then, considers the situation where the patent's disclosure makes crystal clear that a particular (i.e., narrow) understanding of a claim term is an "essential element of [the inventor's] invention." Here, however, the patent disclosure provides ample support for the breadth of the term "heading"; it does not "unambiguously limit[]" the meaning of "heading" to the direction of the motor.[156]

The court therefore affirmed the lower court's ruling that the written description was satisfied.[157]

In *Tronzo*, the defendant argued that the plaintiff's original disclosure did not adequately support the claims of a later continuation-in-part ("CIP") application.[158] The invention related to artificial hip sockets having cup implants that could be inserted into hip bone.[159] The claims of the later CIP application were directed generically towards cup implants of any shape.[160]

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[152] WALKER, *supra* note 151, at 290.

[153] *See* Johnson Worldwide Assocs. v. Zebco Corp., 175 F.3d 985, 987 (Fed. Cir. 1999).

[154] *See id*. at 992-93. The lower court had conducted an infringement analysis, which involves two steps. *See id.* at 988. In an infringement analysis, the court first determines the correct claim scope as a matter of law, then the factfinder determines whether all the claim limitations are present in the accused device. *See id*.

[155] *See id*. at 993 (noting that the term was "used interchangeably throughout the written description to refer to both the direction of the trolling motor and the direction of the boat[,]" and was not used solely to refer to the direction of the trolling motor, as the defendant had argued).

[156] *Id*. (quoting Gentry Gallery, Inc. v. Berkline Corp., 143 F.3d 1473, 1479 (Fed. Cir. 1998)) (alterations in original).

[157] *See id.*

[158] *See* Tronzo v. Biomet, Inc., 156 F.3d 1154, 1158 (Fed. Cir. 1998); *see supra* note 39 (discussing continuation applications).

[159] *See Tronzo*, 156 F.3d at 1156.

[160] *See id*. at 1158.

Plaintiff Tronzo argued that his original application disclosed six species of cup shape, and contended that an applicant can utilize a generic claim if it is supported by disclosure of a sufficient number of species that are encompassed within the generic claim.[161] The court found, however, that the original specification actually disclosed only two species of cup shape.[162] Moreover, the court found that the only reference to cups of different shapes was found in the discussion of the prior art, wherein "the specification specifically distinguishes the prior art as inferior and touts the advantages of the conical shape of the [parent patent] cup."[163] Additionally, the court rejected the district court's determination that a sufficient disclosure of the different shaped cups was inherent in the specification of the patent application.[164] The court noted that nothing in the specification at issue would lead one skilled in the art to believe that cups of different shape were part of the disclosure.[165] Indeed the inventor's touting of the conical shape as better than shapes found in the prior art counsels exactly the opposite.[166] The court therefore held the claims invalid under the written description requirement because the specification did "not support the later-claimed, generic subject matter . . . ."[167]

The cases above show the willingness of courts to apply a rigorous written description analysis to inventions in the predictable arts. This practice has caused consternation among patent practitioners who feel that a rigorous written description analysis should be reserved for inventions in the unpredictable arts, as will now be discussed.

IV. RESPONSES TO *GENTRY*—ALARM AMONG PRACTITIONERS

A. *Preference for a Less Stringent Written Description Standard for the Predictable Arts*

In comparing *Gentry* and *Lilly*, one author has lamented the extension of the "'written description' reasoning from the unpredictable art of biochemistry to the predictable art of machinery" as being contrary to the Federal Circuit's

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[161] *See id.*

[162] *See id.* at 1159.

[163] *Id.*

[164] *See id.* In discussing the inherency argument, the court noted:

> In order for a disclosure to be inherent, . . . the missing descriptive matter must necessarily be present in the parent application's specification such that one skilled in the art would recognize such a disclosure. There is nothing in the [parent] specification to suggest that shapes other than conical are necessarily a part of the disclosure.

Id. (citations omitted).

[165] *See id.*

[166] *See id.*

[167] *Id.*

own mechanical arts case law.[168] The author alleges that this mechanical arts case law allows a person skilled in the art to make "ordinary modifications within his skill" to the invention disclosed in a patent.[169] The perceived extension of the unpredictable arts written description standard to the predictable arts is being met with alarm among practitioners because the predictable nature of changes in mechanical inventions should not be outside the ability of skilled artisans.[170]

This argument, however, intertwines two distinct concepts and therefore fails to justify resistance to a unified written description standard. The first concept is whether the inventor was in possession of the invention at the time of filing his application. This issue is addressed by the written description inquiry. The second concept twined into this argument is akin to an obviousness inquiry under 35 U.S.C. § 103.[171] Under this inquiry the PTO will not issue a patent if the invention would be obvious to skilled artisans who are aware of all relevant prior art.[172] The argument above impermissibly combines these two inquiries. A variation on a mechanical invention may be obvious in hindsight to skilled artisans upon reading a patent disclosure, but it does not necessarily follow that the variation was within the mind of the inventor at the time he filed the application.

The sole question courts need to decide in written description cases is whether the inventor was in possession of the invention at the time of filing.[173] The written description test thus embodies a narrow and specific inquiry. Variations should not be protected under a patent monopoly without a showing that the inventor had possession of the variations. There may be situations where an inventor only later realizes that the full scope of the invention he disclosed includes some of these obvious variations, or the inventor may realize that his patent lacks claim language sufficient to cover a variation that he disclosed. The Patent Act provides recourse for such an inventor: reissuance of his patent under 35 U.S.C. § 251.[174] A lax written description

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[168] Pretty, *supra* note 10.

[169] *Id.*

[170] *See id.* ("Changing the location of mechanical controls on a sofa should not be outside an artisan's skill.").

[171] *See* 35 U.S.C. § 103(a) (Supp. IV 1999); *see also supra* note 88 (quoting the relevant text of statute). Note that both the written description inquiry and the obviousness analysis of 35 U.S.C. § 103 use the "person of ordinary skill in the art" ("POSITA") as the baseline for analysis. One commentator questioned, however, whether it is the same POSITA in both inquiries. *See generally* Tresansky, *supra* note 22, at 37.

[172] *See* MERGES ET AL., *supra* note 3, at 208.

[173] *See* Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1563 (Fed. Cir. 1991).

[174] *See* MERGES, *supra* note 13, at 1099-1100 (noting that a broadening reissue is useful, for example, "where the accused infringer's product appears to narrowly avoid literal infringement").

standard would open the door to the protection of variations that do not rightfully belong within the patent monopoly. Thus, the written description test remains an important tool in protecting ideas that rightfully belong in the public domain, free for all to use.[175]

B. *Narrowed Patent Scope*

Gentry is further criticized by commentators because it employs the specification in determining the scope of the invention.[176] One author remarks that in American patent law, "[t]he genius of the claim idea is that, once granted, the patent's protection is measured by the breadth of the claim and is not restricted to only the specific versions that the patent drawings and disclosure show."[177] The author sees the written description test as an exception to this rule, and feels that *Gentry* has detracted from this established claim principle by restricting the breadth of the claims based on the accompanying disclosure.[178] Another author ominously states that "[p]atents are worth less today than they were last year" because the increasing reliance on 35 U.S.C. § 112 makes the specification, in addition to the claims, important in analyzing validity.[179]

The plaintiff in *Reiffin* likewise argued in the district court that the court could not look to his original disclosure to determine the scope of his present claims because it is the claims that define the invention.[180] The district court rejected this assertion by stating that, if courts followed the argument, the written description test would be a nullity because "issued claims will never go beyond the scope of the invention if the invention is defined by the issued claims."[181] The district court also rejected the argument because the plaintiff

[175] *See* Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 617 (1950) (Black, J. dissenting) ("[T]he 17-year monopoly authorized by valid patents [is] a narrow exception to our competitive enterprise system. For that reason, [courts] have emphasized the importance of leaving business men free to utilize all knowledge not preempted by the precise language of a patent claim.").

[176] *See, e.g.*, Pretty, *supra* note 10.

[177] *Id.*

[178] *See id.*

[179] Liu, *supra* note 8, at 123.

[180] *See* Reiffin v. Microsoft Corp., 48 U.S.P.Q. 2d (BNA) 1274, 1277-78 (N.D. Cal. 1998).

[181] *Id.* at 1278. The Federal Circuit accepted the plaintiff's argument that the court should not look at his original disclosure to determine the scope of his present claims, but only to the extent that the district court should have looked at the specification that was filed with the claims at issue, and not the specification of the grandfather application. *See* Reiffin v. Microsoft Corp., 214 F.3d 1342, 1345 (Fed. Cir. 2000). Thus, the Federal Circuit is not explicitly adverse to interpreting the breadth of an applicant's claims based on the accompanying disclosure.

could produce no authority for his assertion.[182]

There is a significant detriment to the public in foregoing the written description analysis and using only the claims to determine a patent's scope. The disadvantage is that an inventor may claim more than he actually invented at the time of filing his application. This situation was quite clear in *Gentry*, and it most likely exists in innumerable instances where an applicant amends his claims. The patent laws allow an applicant to substitute his original claims for different claims.[183] This practice must remain allowable only where the inventor had truly conceived of the invention at the time of filing his original application. Conception can be verified easily by comparing the post-filing date claims with the original description of the invention as set out in the specification. Thus, the written description requirement is a useful tool in policing inventors who attempt to overreach.

C. *Responses from Patent Examiners*

Patent examiners are also sharp critics of *Gentry* and the perceived creation of a single written description standard for the predictable and unpredictable arts.[184] The Patent & Trademark Office Society ("PTOS"), an organization composed primarily of patent examiners, issued comments emphatically rejecting the PTO's proposed written description guidelines as they apply to the predictable arts.[185] In June 1998, the PTO first requested comments to its *Interim Guidelines for Examination of Patent Applications under the 35 U.S.C. 112, ¶ 1, "Written Description" Requirement* ("*Examination Guidelines*").[186] The *Examination Guidelines* were "intended to assist Office personnel in the examination of patent applications for compliance with the written description requirement of 35 U.S.C. 112, ¶ 1, in view of *University of California v. Eli Lilly* and the earlier cases *Fiers v. Revel* and *Amgen, Inc. v. Chugai Pharmaceutical Co.*"[187] They also noted that "[a]lthough these guidelines address examples principally drawn from the biotechnological arts, they are intended to be equally applicable to all fields of invention."[188]

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[182] *See Reiffin*, 48 U.S.P.Q. 2d at 1278.

[183] *See supra* note 38.

[184] *See* Patent and Trademark Office Society, *supra* note 50, at 141.

[185] *See id*. at 140-41.

[186] *See* Request for Comments on Interim Guidelines for Examination of Patent Applications Under 21 U.S.C. § 112, ¶ 1 "Written Description" Requirements, 63 Fed. Reg. 32,639, 32,639 (1998) [hereinafter "Examination Guidelines"]. As a result of the comments it received, the PTO has since revised the *Examination Guidelines* and requested another round of comments. *See* Guidelines, 64 Fed. Reg. 71,427, 71,427 (1999); *supra* notes 19-22 and accompanying text. The newest version of the *Examination Guidelines* is referred to as the *Guidelines* in this note. *See supra* Section II-B.

[187] Examination Guidelines, 63 Fed. Reg. at 32,639 (citations omitted).

[188] *Id.* at 32,640.

Despite the *Examination Guidelines*' stated intention that they be applied to all arts, the PTOS felt that they were applicable only to the unpredictable arts and bore no relationship to the predictable arts.[189] The PTOS objected to the PTO's reliance on *Lilly* because that holding was limited to claims directed towards genetic materials at the time of the patent at issue in that case.[190] The PTOS asserted that the invention in *Lilly* would be routine today to one skilled in the art because the state of the biotechnological arts has advanced.[191] Thus, the PTOS felt that the written description requirement "should remain 'rarely applied . . . to a residuum of cases where results at each step do not follow as anticipated, but are achieved empirically by what amounts to trial and error.'"[192]

The PTO revised the *Examination Guidelines* based on these and other comments.[193] The current version does not contain the references to *Lilly*, *Fiers*, and *Amgen* that previously appeared.[194] The PTO also addressed arguments that the *Examination Guidelines* were applicable only to biotechnology by responding that the "[*Examination*] *Guidelines* clearly specify when a written description issue is most likely to arise . . . ."[195] Thus the PTO intends that the new *Guidelines* also be applied to all arts equally.[196]

The approach taken by the new *Guidelines* is preferable to the dual standard that had been advocated by some courts and commentators. The concurring opinion in *Barker*, for example, noted that a single standard should not be used, suggesting instead a case-by-case approach.[197] This statement is correct insofar as a case-by-case approach is needed in any written description inquiry because the outcome of the test is necessarily fact-based. But all arts must be analyzed under the same standard, lest uniquely rigorous standards for the unpredictable arts chill developments in unpredictable fields such as biotechnology.[198]

One author remarks that in the predictable arts, artisans can easily see variations of an invention that they know would work, which may not be true

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[189] *See* Patent and Trademark Office Society, *supra* note 50, at 141 ("The PTOS believes that the written description guidelines are only applicable to the unpredictable arts, in particular to a certain unpredictable areas of biotechnology . . . .").

[190] *See id*.

[191] *See id*. at 142.

[192] *Id*. (quoting Alpert v. Slatin, 134 U.S.P.Q. (B.N.A) 296 (C.C.P.A. 1962)).

[193] *See* Guidelines, 64 Fed. Reg. 71,428, 71,434 (1999).

[194] *See id.*

[195] *Id.* at 71,428.

[196] *See id.* at 71,427.

[197] *See In re* Barker, 559 F.2d 588, 594 (C.C.P.A. 1977) (Baldwin, J., dissenting); *see also supra* notes 68-72 and accompanying text.

[198] *See* Mueller, *supra* note 43, at 650.

in the unpredictable arts where the effects of variables may be unknown.[199] The author uses this idea to comment on case law developments regarding the use of the same stringent standard for both the predictable arts and the unpredictable arts.[200] As discussed earlier, however, whether those skilled in the art can see obvious variations is immaterial to the determination of what the inventor possessed at the time of filing. Thus, because the written description test is independent of whether the invention falls within the predictable or unpredictable arts, it does not make sense to have more than one standard.

If the written description requirement is applied in only rare circumstances, as suggested by the PTOS, many inventors would be guilty of claiming more than they actually invented. Because the process of prosecuting a patent application can linger on for years,[201] an inventor has ample time to visualize improvements on his original disclosure and to note what his competitors are doing. Also, the desire to take advantage of an earlier filing date for a later set of claims can easily lead to inventor overreaching if the later claims are not examined for support in the original disclosure. Thus the written description serves a vital role in protecting the public from inventors who overreach, and should not be only "rarely applied."[202]

Gentry (and the *Guidelines*) have created a single written description standard for both the predictable and unpredictable arts. The paramount concern should be the public's interest. If stricter standards will help prevent inventors from overreaching, benefits will accrue to the public from knowing the true limits of an invention, despite practitioners' concerns of narrowed patent scope.

V. THE EFFECTS OF A MORE STRINGENT WRITTEN DESCRIPTION REQUIREMENT

A. *Will Narrowed Patent Scope Create a Tragedy of the Anticommons?*

There is a danger associated with narrowed patent scope. Because a stricter written description standard can lead to a narrower patent scope, it is appropriate here to consider the possibility of a "tragedy of the anticommons." An anticommons can be considered the mirror image of a commons, which is defined as "'a scheme of universally distributed, all-encompassing

[199] *See* Pretty, *supra* note 10.

[200] *See id.*

[201] *See* DAVID PRESSMAN, PATENT IT YOURSELF 8/3 (4th ed. 1995) ("From filing to issuance, the process usually takes somewhere between six months to two years, but sometimes longer."); MERGES ET. AL, *supra* note 13, at 36 ("[T]he 'average' prosecution takes approximately two to three years.").

[202] Patent and Trademark Office Society, *supra* note 50, at 142.

privilege . . . .'"[203] Thus, a commons is created when all persons are granted rights over a resource, and no one person is allowed to exclude any other from using the resource.[204] When commons property has too many owners, a "tragedy of the commons" can ensue wherein the resource becomes overused.[205] By contrast, an "anticommons" is a property scheme wherein "multiple owners are each endowed with the right to exclude others from a scarce resource, and no one has an effective privilege of use."[206] Thus when there are too many owners with rights to exclude others, a tragedy of the anticommons can arise and a resource will be underused.[207] One author has used empirical evidence to show that once a government creates too many rights in too many owners, collecting the rights and repackaging them into usable bundles can be an arduous process.[208]

Patents rights are suited to develop into an anticommons. A patent grant is a limited monopoly wherein the inventor is awarded the right to exclude others from making and using his invention for a limited number of years.[209] A government may create an anticommons by allowing too many individuals to obtain narrow intellectual property rights in a particular art.[210] Problems can

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[203] Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621, 624 n.9 (1998) (quoting Frank I. Michelman, *Ethics, Economics and the Law of Property*, 24 NOMOS 3, 9 (1982)). Heller credits Garrett Hardin with originating the term "anticommons" in Hardin's article *The Tragedy of the Commons*, 162 SCIENCE 1243, 1244-45 (1968). *See* Heller, *supra*, at 624 n.10.

[204] *See* Heller, *supra* note 203, at 623-24.

[205] *See id*. at 624 (citing depleted fisheries, overgrazed fields, and polluted air as canonical examples).

[206] *Id*.

[207] *See id.*

[208] *See id.* at 625. The author uses an anticommons theory to explain why there is an abundance of empty storefronts in Moscow while the streets are full of vendors selling wares from portable kiosks. *See id.* at 623. The author contends that the Moscow storefront is an anticommons property – that is, in making the transition from a socialist regime to a market economy, government distributed state ownership of building rights to private individuals. *See id.* The rights are so fragmented, however, that no single individual can set up shop without the consent of all the other owners. *See id.* For example, "[i]n a typical Moscow storefront, one owner may be endowed initially with the right to sell, another to receive sale revenue, and still others to lease, receive lease revenue, occupy and determine use." *Id.* at 623. Kiosks appeared instead because the streets were unencumbered by such fragmented exclusionary rights. *See id.* at 633-35 ("One newspaper article reports: 'All this buying and selling takes place on the street because the title to most stores is unclear or because stores are occupied by moribund state enterprises. The sidewalks were free and empty, so the new entrepreneurs moved in.'") (quoting Kathy Lally, *Kiosks Provide Muscovites a Ticket VP*, BALTIMORE SUN, Dec. 13, 1992, at 3A).

[209] *See supra* text accompanying notes 1-7.

[210] *See* Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The*

thus ensue when a user wants access to a technology, only to find that there is *X* number of patents he needs to license in order to perform further research.

B. *Will Recent Case Law Create a Tragedy of the Anticommons in the Unpredictable Arts?*

It is instructive to consider whether the unpredictable art of biotechnology, which has been subject to a stricter written description standard for longer than the predictable arts, is on the road to a tragedy of the anticommons. One commentary described the transition in the biomedical research field as moving from a commons model, where the government sponsored "upstream" research and encouraged public dissemination of results, to a privatization model, where researchers are patenting their results.[211] With this new privatization system the authors warn that "government might inadvertently create an anticommons: either by creating too many concurrent fragments of intellectual property rights in potential future products or by permitting too may upstream patent owners to stack licenses on top of the future discoveries of downstream users."[212]

In an environment where patent scope is restricted, there will be more and more patents, each directed towards narrower inventions. A stricter written description requirement could therefore lead to a tragedy of the anticommons because its alleged effect of narrowing patent scope will create an environment in which an individual will have to deal with numerous owners of narrow patent rights in order to collect what he needs to move forward.[213]

Although a strict written description requirement may ultimately lead to a tragedy of the anticommons by creating narrow patent rights, a loosening of the requirement should not be the only line of defense in fighting against this development. Arguably, a less stringent written description requirement could be useful in increasing the number of broader patent grants in cases where the disputed claims differ from the claims that were filed with the original application. But a general tightening of the utility, nonobvious, and enablement requirements of patentability could help reduce the number of fragmented patent rights for all types of claims by cutting down on the overall number of patents issued.

If narrowed patent scope does lead to a tragedy of the anticommons, it may be a trade-off practitioners will have to live with in order to protect the public from overreaching inventors. Nonetheless, there is some evidence that an anticommons will never occur. For example, intellectual property pools are not uncommon, and result in uniting fragmented rights into easily obtainable

Anticommons in Biomedical Research, 280 SCIENCE 698, 699 (1998).

[211] *See id*. at 698.

[212] *Id*. at 699.

[213] *See, e.g.*, Liu, *supra* note 8, at 123; Pretty, *supra* note 10; *see also supra* Section IV-B.

and useable bundles.[214] Although governments may be ineffective in packaging patent rights into useable bundles, private parties may be successful in doing so. Thus practitioners may never suffer from the ill effects associated with an anticommons.

C. *Effects on the Patent Practice*

Commentators advise inventors to increase the level of disclosure regarding alternative embodiments of their invention or to add boilerplate language to protect their inventions in the current environment of a stringent written description standard.[215] This suggestion, however, will be ineffective in protecting against patent invalidation in a number of ways.

First, courts agree that an inventor is not limited to only the specific embodiments he discloses in his application.[216] Therefore, an inventor should not feel obligated to fill in every minute detail of his invention by increasing the level of disclosure regarding alternative embodiments. Moreover, it may be impossible for the inventor to do so. If an inventor has not conceived of an embodiment, it will be impossible for him to include it in his disclosure. As for including boilerplate language, the inventor is still at risk of invalidation because if he does not disclose how to make the variation work he may loose his patent under the enablement requirement.

One commentator has noted that the recommended listing of each of the alternative embodiments may use up so much of an inventor's time as to chill his opportunities to innovate.[217] Again, however, if the inventor has not conceived of the alternative embodiment at issue at the time of filing, it will be impossible for him to list anything in his application. No matter how detailed the application is regarding alternative embodiments, if it is evident to a court that the inventor had not conceived of the particular embodiment at issue at the time of filing, it is proper for the court to invalidate the claims under the

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[214] *See* Heller & Eisenberg, *supra* note 210, at 700 ("Recent empirical literature suggests that communities of intellectual property owners who deal with each other on a recurring basis have sometimes developed institutions to reduce transaction costs of bundling multiple licenses."); *see also* Robert P. MERGES, *Contracting Into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CAL. L. REV. 1293, 1293-94 (1996) ("Whether through copyright collectives, such as ASCAP and BMI in the music industry, or undertakings such as patent pools in automobile and aircraft manufacturing, those with a recurring need to transact in intellectual property rights invest in administrative structures that lower the costs of exchanging rights.").

[215] *See, e.g.*, Liu, *supra* note 8, at 134; Pretty, *supra* note 11, at 480 & n.10. Pretty notes that if the inventor in *Gentry* "had put in boilerplate language that the control buttons could be positioned on the console, but that other locations such as on the arms or seat frames could be used, he would have had no problems." Pretty, *supra* note 11, at 480 n.10.

[216] *See* Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1479 (Fed. Cir. 1998).

[217] *See* Liu, *supra* note 8, at 134.

written description requirement.

Another response of inventors, especially those working with DNA inventions, to the more stringent written description requirement may be to delay the filing of their application until they are able to provide a complete written description of the invention, such as the structure of the DNA.[218] This delay is unlikely to be harmful to the public, however, because the public would benefit from the more complete disclosure later, as opposed to an incomplete disclosure earlier. Besides, if knowing only the functional characteristics of a biological material does not constitute conception of an invention, the inventor does not deserve a patent yet in any event.[219]

Despite the threats of an anticommons, a chilling of innovation, and delays in filing, the stricter written description scrutiny for inventions from the predictable arts will prevent many inventors from claiming inventions that they simply had not invented at the time of original filing. Inventors should be aware that courts will inspect the specification to be sure it supports any later-added claims. Fairness to the public should be the paramount concern and, in this regard, the unification of the written description standard for the predictable and unpredictable arts is welcome progress.

VI. CONCLUSION

Prior to the decision in *Gentry*, a less stringent written description standard existed for inventions based in the predictable arts than for those inventions in the unpredictable arts. *Gentry* is perceived as unifying the standard for all arts to the stricter standard that was previously reserved for the unpredictable arts. Although there may be negative effects resulting from a stricter written description standard, including narrowed patent scope and a potential tragedy of the anticommons, the stricter standard is the better choice in terms of fairness to the public because it prevents inventors from overreaching.

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[218] *See* Amgen, Inc. v. Chugai Pharm. Co., 927 F.2d 1200, 1206 (Fed. Cir. 1991); *see also supra* notes 92-104 and accompanying text.

[219] *See Amgen, Inc.*, 927 F.2d at 1206.