

PATENTLY CONFUSING: THE FEDERAL CIRCUIT'S INCONSISTENT TREATMENT OF CLAIM SCOPE AS A LIMIT ON THE BEST MODE DISCLOSURE REQUIREMENT

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I. INTRODUCTION

More than a decade ago, one practitioner expressed the view that while the Federal Circuit had settled several issues related to the best mode disclosure requirement, the contours of the requirement had been left “confused and muddled . . . making a determination of the bounds of disclosure uncertain and imprecise.”¹ This article demonstrates—via a comprehensive review and analysis of Federal Circuit opinions discussing the best mode requirement—that little has changed over the past ten years. Unfortunately, the best mode requirement remains a patchwork of conflicting legal principles, inconsistently applied. This article concludes by proposing a corrective course of action for the Federal Circuit to follow.

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¹ Christopher S. Marchese, *Promoting the Progress of the Useful Arts by Narrowing Best Mode Disclosure Requirements in Patent Law*, 54 U. Pitt. L. Rev. 589, 592 (1993); see also *Wahl Instruments, Inc. v. Acvious, Inc.*, 950 F.2d 1575, 1579 (Fed. Cir. 1991); Donald S. Chisum, *Best Mode Concealment and Inequitable Conduct in Patent Procurement: A Nutshell, A Review of Recent Federal Circuit Cases and a Plea for Modest Reform*, 13 Santa Clara Computer & High Tech. L.J. 277, 279 (1997). The *Wahl* court acknowledged that “the term ‘mode’ and the phrase ‘carrying out the invention’ are not definable with precision.” 950 F.2d at 1579.

II. OVERVIEW OF THE BEST MODE REQUIREMENT

A. *The Statutory and Policy Basis of the Best Mode Requirement*

To obtain a patent, an applicant must disclose the invention in accordance with 35 U.S.C. § 112.² “Under Section 112, the inventor must adequately set forth and describe three items: (1) the invention (the description requirement); (2) the manner and process of making and using the invention (the enablement requirement); and (3) the best mode contemplated by the inventor of carrying out his invention (the best mode requirement).”³

The purpose of the statutory disclosure requirements, in general, and the best mode requirement, in particular, is to compensate the public for the cost of the monopoly conferred on a patentee.⁴ As Judge Rich explained in *In re Nelson*:

One cannot read the wording of section 112 without appreciating that strong language has been used for the purpose of compelling complete disclosure. There always exists, on the part of some people, a selfish desire to obtain patent protection without making a full disclosure, which the law, in the public interest, must guard against. Hence section 112 calls for description in “full, clear, concise, and exact terms” and the “best mode” requirement does not permit an inventor to disclose only what he knows to be his second-best embodiment, retaining the best for himself.⁵

The law imposes a severe penalty for failing to comply with the requirements set forth in section 112: a declaration of patent invalidity.⁶ A

² The statute provides:

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 (2000).

³ Donald S. Chisum, *Chisum on Patents* vol. 3, § 7.01 (M. Bender & Co. 1992) (quoting 35 U.S.C. § 112).

⁴ See *Christianson v. Colt Induss. Operating Corp.*, 870 F.2d 1292, 1302 n. 8 (7th Cir. 1989) (“[T]he best mode requirement is intended to allow the public to compete fairly with the patentee following the expiration of the patents.”).

⁵ 280 F.2d 172, 184 (C.C.P.A. 1960); see also *Dana Corp. v. IPC LP*, 860 F.2d 415, 418 (Fed. Cir. 1988) (“The purpose of the best mode requirement is to ensure that the public, in exchange for the rights given the inventor under the patent laws, obtains from the inventor a full disclosure of the preferred embodiment of the invention.”).

⁶ See 35 U.S.C. § 282(3).

best mode (or enablement) violation is an absolute defense to an accusation of infringement, “no matter how egregious the infringer’s conduct.”⁷

B. Fundamental Principles of Best Mode Analysis

The best mode and enablement requirements of section 112 are “separate and distinct” from one another.⁸ The “essence of [the enablement requirement] is that a specification [of a patent] shall disclose an invention in such a manner as will enable one skilled in the art to make and utilize it.”⁹ In contrast, the “sole purpose of [the best mode] requirement is to restrain inventors from applying for patents while at the same time concealing from the public preferred embodiments of their inventions which they have in fact conceived.”¹⁰

Thus, a patent can be enabling but still fail to satisfy the best mode requirement.¹¹ *Spectra-Physics, Inc. v. Coherent, Inc.*¹² is frequently cited as illustrating this point.¹³ In *Spectra-Physics*, two patents were at issue.¹⁴ One patent was directed to a gas laser with an improved laser discharge tube; the other patent described a method of fabricating the laser.¹⁵ Both patents emphasized the importance of the bond between copper cups and the laser discharge tube wall.¹⁶ The patents disclosed (in the specifications) three methods for attaching the cups to the discharge tube: low-temperature pulse soldering, moly-manganese brazing, and TiCuSil brazing.¹⁷ The six-stage

⁷ Chisum, *supra* n. 1, at 279.

⁸ *In re Gay*, 309 F.2d 769, 772 (C.C.P.A. 1962).

⁹ *Id.*

¹⁰ *Id.*; *see also Christianson*, 870 F.2d at 1302 n. 8; *supra* nn. 3-4 and accompanying text.

¹¹ A patent can be invalidated for failing to fulfill the best mode requirement even though the patent is enabling. *See* text accompanying *supra* nn. 6-7.

¹² 827 F.2d 1524 (Fed. Cir. 1987).

¹³ *See* Chisum, *supra* n. 1, at 280-81; *see also* Roy E. Hofer & L. Ann Fitzgerald, *A Review of Recent Decisions of the United States Court of Appeals for the Federal Circuit: Article: New Rules for Old Problems: Defining the Contours of the Best Mode Requirement in Patent Law*, 44 Am. U. L. Rev. 2309, 2325 (1995); Richard M. Mescher, *Patent Law: Best Mode Disclosure—Genetic Engineers Get Their Trade Secret and Their Patent Too?—Amgen, Inc. v. Chugai Pharm. Co.*, 18 U. Dayton L. Rev. 177, 182 (1992).

¹⁴ 827 F.2d at 1526.

¹⁵ *Id.* at 1526-29.

¹⁶ *Id.* at 1529.

¹⁷ *Id.* at 1533.

TiCuSil brazing method was preferred by the inventors but was not detailed in the patent.¹⁸ The Federal Circuit panel explained that the patents satisfied the enablement requirement nonetheless: “Because the patents disclose the alternatives of moly-manganese brazing and pulse soldering, their failure to also disclose Coherent’s TiCuSil braze cycle is not fatal to enablement under [section] 112.”¹⁹ However, the court ultimately held the patents invalid for failing to disclose the best mode of attaching the copper cups to the ceramic discharge tube (i.e., the TiCuSil brazing method).²⁰ Echoing the language of *In re Gay*, the *Spectra-Physics* court highlighted the difference between the enablement and best mode requirements: “[W]here only an alternative embodiment is enabled, the disclosure of the best mode may be inadequate. But that is a question separate and distinct from the question [of] whether the specification enabled one to make the invention at all.”²¹

In *Chemcast Corp. v. Arco Industries Corp.*, a panel of the Federal Circuit firmly established that “a proper best mode analysis has two components.”²² The first step is to determine whether an inventor, at the time the patent application was filed, “knew of a mode of practicing his *claimed* invention that he considered to be better than any other.”²³ The purpose of this first-step is to “resolve[] whether the inventor must disclose any facts *in addition to those sufficient for enablement*.”²⁴ If a court finds that an inventor contemplated a preferred mode, the second-part of the best mode analysis focuses on whether “the disclosure [was] adequate to enable *one skilled in the art* to practice the best mode.”²⁵

To summarize, there are two questions to be answered in a best mode analysis: (1) Is there a best mode of the invention that the inventor was

¹⁸ *Id.* at 1529, 1532.

¹⁹ *Id.* at 1533.

²⁰ *Id.* at 1537.

²¹ *Id.* at 1534 (quoting *In re Gay*, 309 F.2d at 722). The court described the problem in *Spectra-Physics* as “one in which the patent specifications disclose more than one means for making the claimed invention, but do not adequately disclose the best means actually known to the inventors.” *Id.* at 1532.

²² 913 F.2d 923, 927 (Fed. Cir. 1990).

²³ *Id.* at 928 (emphasis added). “[A]n inventor need not disclose the *optimum* mode, but only the one she subjectively prefers.” Marchese, *supra* n. 1, at 592.

²⁴ *Chemcast*, 913 F.2d at 928 (emphasis added).

²⁵ *Id.* This two-step test is not at all at odds with the principle that enablement and best mode are distinct statutory requirements. In the second part of the test, a court simply employs the same standards to judge the adequacy of best mode disclosure as it does to assess the adequacy of enablement.

required to disclose? (2) Did the disclosure adequately *enable* one skilled in the art to practice the best mode of the invention?²⁶

III. CLAIM SCOPE AND THE BEST MODE REQUIREMENT

In answering the first question posed by a best mode analysis, the Federal Circuit has often grappled with the extent to which the scope of the claimed invention limits “the disclosure required to comply with the best mode requirement.”²⁷ The Federal Circuit is divided over the issue, with various panels of the court having articulated inconsistent rules.²⁸

A. *Early Federal Circuit Decisions*

The Federal Circuit first dealt with the interaction between claim scope and the best mode requirement in *DeGeorge v. Bernier*, overturning a decision by the Board of Patent Appeals and Interferences of the United States Patent and Trademark Office.²⁹ DeGeorge’s application claimed circuitry designed for use with a word processor in order to produce the automatic indentation of a block of text.³⁰ The Board found DeGeorge in violation of the best mode requirement for failing to specify a preferred word processor with which his circuitry “should be employed.”³¹ However, the Federal Circuit panel concluded that the DeGeorge claims, properly construed, did not include a word processor: “[F]ailure to meet the best mode requirement here should not arise from an absence of information on the word processor.”³² Thus, *DeGeorge*, by implication, stands for the

²⁶ Whether or not the best mode is enabled implicates the same tests as the *independent* “enablement” requirement of § 112 discussed above.

²⁷ *Chemcast*, 913 F.2d at 927.

²⁸ Other commentators have reached a similar conclusion, although their reasoning is substantially different from the analysis herein. See e.g. Marchese, *supra* n. 1, at 603-04.

²⁹ 768 F.2d 1318, 1319 (Fed. Cir. 1985). When several inventors file patent applications claiming the same subject matter, an interference proceeding is declared to determine which inventor should be awarded the claims based on priority. The Board of Patent Interferences adjudicates this dispute.

³⁰ *Id.* at 1320.

³¹ *Id.* at 1325.

³² *Id.*

proposition that an inventor is not required to disclose unclaimed subject matter.³³

Two years later, in *Christianson v. Colt Industries Operating Corp.*, the Federal Circuit was again confronted with a best mode dispute.³⁴ At issue were patents for nine M-16 rifle parts.³⁵ While the Colt patents disclosed how to make the parts, the patents did not reveal the “manufacturing or production information” necessary to make the parts interchangeable or to make the “160-part M-16 rifle.”³⁶ Colt did not dispute that “mass-production information it . . . developed on dimensions and tolerances” was necessary to make the parts interchangeable and conceded that “successful [M-16] sales . . . require interchangeability of its 160 parts.”³⁷ Since the Colt patents did not claim the M-16 rifle, “nor [did] any patent of record make any reference to ‘a rifle like the M-16,’”³⁸ the court concluded that Colt’s patents did not violate the best mode requirement: “The requirement for disclosure of sufficient information to enable one skilled in art to practice the best mode of the *claimed* invention is and has been proven fully adequate for over 150 years. . . . [T]he best mode for making and using and carrying out the *claimed inventions* does not entail or involve either the M-16 rifle or interchangeability.”³⁹ *Christianson* is entirely consistent with *DeGeorge*.⁴⁰

³³ Admittedly, this is a broad reading of the holding in *DeGeorge*. It is also the most reasonable reading of that case, however, given its following statement: “The purpose of the best mode requirement ‘is to restrain inventors from applying for patents while at the same time concealing from the public *preferred embodiments of their inventions* which they have in fact conceived.’ Compliance with the best mode requirement exists when an inventor discloses his preferred embodiment.” *Id.* at 1324 (quoting *In re Gay*, 309 F.2d at 772) (emphasis added) (citations omitted). *DeGeorge*, then, teaches that courts must focus on the preferred *embodiment* of the *claimed* invention. The inventor need not disclose, for example, his unclaimed, preferred *method of making* the preferred embodiment of the claimed invention. This understanding comports with the statutory “bargain” struck between the public and the inventor.

³⁴ 822 F.2d 1544, 1547 (Fed. Cir. 1987).

³⁵ *Id.*

³⁶ *Id.* at 1560.

³⁷ *Id.*

³⁸ *Id.* at 1561.

³⁹ *Id.* at 1562-63. “The law is not so foolish as to require that a patent on a single part of a 160-part weapon must include instructions on how to make the *weapon*.” *Id.* at 1561. “The ‘best mode’ for making and using the *claimed* parts relates to their use in a rifle, any rifle. There is nothing anywhere in the present record indicating that any of the patents fail to meet that requirement. Again, there was no testimony or evidence relating to the best mode of practicing the *claimed inventions*.” *Id.* at 1563 (emphasis added). From the preceding language one might believe that the court defined “carrying out”—the statutory language associated with the best mode requirement—as “making and

B. Expansion of the Best Mode Requirement

1. *Spectra-Physics v. Coherent*

Spectra-Physics was decided by the Federal Circuit within two months of *Christianson*.⁴¹ Recall that the court in *Spectra-Physics* held two patents invalid for failing to disclose adequately the TiCuSil brazing method, a preferred technique employed in the construction of a claimed laser.⁴² In finding a best mode violation, the court virtually ignored the first-step of best mode analysis, assuming without discussion that the patentees were required to disclose their preferred brazing method.⁴³ The court's brief comment on whether Coherent was obligated to disclose the TiCuSil method *at all* was confined to one sentence in the "Introduction" section of the opinion: "If . . . the applicant develops specific instrumentalities or techniques which are recognized at the time of filing as the best way of carrying out the invention, then the best mode requirement imposes an obligation to disclose that information to the public as well."⁴⁴ Thus, this panel read "carrying out" to include "making" despite the fact that the patentee would have been unable to exclude others from practicing TiCuSil brazing (independent from the specifically claimed laser). In contrast, *DeGeorge* plainly stated that

using." Such a conclusion would be erroneous, for the *Christianson* court went on to explain that "[t]he patent system has conferred on Colt no exclusivity or economic advantage respecting Colt's dimensions, tolerances, and drawings necessary for interchangeability. . . . Christianson has shown simply no basis whatever for arguing that Colt did not fulfill its section 112 *quid pro quo* in obtaining the involved patents." *Id.* The best mode inquiry must always be centered on whether the patentee has concealed, from the public, knowledge of some improved version of the invention which the public can be excluded from practicing. On the separate issue of enablement, the court also concluded in favor of Colt: "Patents are not production documents, and nothing in the patent law requires that a patentee must disclose data on how to mass-produce the invented product." *Id.* at 1562 (emphasis added). In so holding, the court distinguished between a disclosure which enables one skilled in the art to practice, as opposed to mass-produce, the invention; only the former is required. *See id.*

⁴⁰ One commentator explains that *Christianson* stands for the "rule" that the "best mode requirement does not require an inventor to disclose how to use the claimed product in the 'best' way." Hofer & Fitzgerald, *supra* n. 13, at 2325.

⁴¹ *Spectra-Physics*, 827 F.2d at 1524.

⁴² *See* text accompanying *supra* nn. 12-21.

⁴³ *See Spectra-Physics*, 827 F.2d at 1535-37 ("The appropriate question then is . . . whether TiCuSil brazing was *adequately* disclosed.").

⁴⁴ *Id.* at 1532 (citing, amongst other pre-Federal Circuit cases, *Flick-Reedy Corp. v. Hydro-Line Mfg. Co.*, 351 F.2d 546, 550-51 (7th Cir. 1965)).

“[c]ompliance with the best mode requirement exists when an inventor discloses his preferred embodiment.”⁴⁵ In *Spectra-Physics* the inventor did *not* prefer a laser constructed with TiCuSil brazing to one constructed with a different means.⁴⁶

Unfortunately, the court’s analysis failed to consider, in explicit terms, the scope of the patent claims.⁴⁷ It is also important to note that the TiCuSil brazing method was “preferred because it requires only one step and avoids the need for premetalization.”⁴⁸ Indeed, there is no indication in the court’s opinion that the TiCuSil method was preferred for any reason relating to the ultimate performance or quality of the laser.⁴⁹

⁴⁵ 768 F.2d at 1324-25.

⁴⁶ See 827 F.2d at 1530; see also Gordon T. Arnold, *Best Mode Disclosure: Does the Information Improve the Operation or Effectiveness of the Claimed Invention?*, 1 Tex. Intell. Prop. L.J. 63, 65 (1993) (“It can be argued that the preferred embodiment of what the inventor considered to be the invention was disclosed. . . . Apparently, therefore, it was the concealment of the preferred embodiment of the preferred method of making the claimed invention that turned the case.”). Arnold proposes an alternative “way of interpreting the case”: “[B]ecause the claimed invention included a functional limitation for making the structure, the preferred method of making was a mode of carrying out the invention.” *Id.* Arnold himself rejects this, noting that “*Spectra-Physics* shows that at least some judges on the Federal Circuit want to see the disclosure of something more than the preferred structure.” *Id.* at 66. Even if the latter proposed understanding of the case is in fact what the panel intended, the decision would still be flawed, with which Arnold appears to concur. *Id.* (“The problem becomes where to stop. No client wants a patent lawyer to write a production specification, but [after *Spectra-Physics*] disclosing only the preferred embodiment along with enablement of a generally claimed invention may not be enough.”).

⁴⁷ *Spectra-Physics*, 827 F.2d at 1527-31. While the patent claiming the laser itself included a limitation specifying “means for attaching” copper cups to a ceramic tube, the TiCuSil brazing method was *not* claimed specifically. See *id.* at 1527-28; Chisum, *supra* n. 1, at 285 n. 30 and accompanying text (explaining that the *Spectra-Physics* panel held that a “failure to disclose specific braze cycle constituting preferred means of attachment violated best mode *even though no particular attachment means claimed*”) (emphasis added). To the extent that one who used the TiCuSil brazing method in constructing a device not related to the claimed laser would presumably *not* be infringing the patents, it is difficult to understand why the inventors ought to be obligated to disclose TiCuSil brazing where that method did not improve the claimed invention. See *supra* n. 46.

⁴⁸ *Spectra-Physics*, 827 F.2d at 1530.

⁴⁹ Surprisingly, Hofer and Fitzgerald derive the following (erroneous) rule for product claims from *Spectra-Physics*: “If an inventor considers a specific technique to be the best way of making an invention, and use of that technique improves the quality or performance of the product, the technique must be disclosed.” Hofer & Fitzgerald, *supra* n. 13, at 2327 (emphasis added).

2. *Randomex, Inc. v. Scopus Corp.*

Shortly following *Spectra-Physics*, two different Federal Circuit panels further muddled the role of claim scope in best mode analysis. In *Randomex, Inc. v. Scopus Corp.*, the disputed patent was “directed to a portable apparatus for cleaning disk packs” which utilized an unclaimed cleaning solution.⁵⁰ While the patent specification disclosed several types of solutions with which the apparatus could be used, the inventor did not disclose which solution he preferred.⁵¹ The court again glossed over the initial question of whether *any* cleaning solution need be revealed, and devoted almost its entire opinion to explaining that Randomex’s disclosure was adequate (i.e., that the patent satisfied the second prong of a best mode analysis).⁵²

Before finding the patent disclosure satisfactory, the court invalidated a jury question that the district court had used to find the Randomex patent in violation of the best mode requirement. Calling the jury question “useless” (for the purposes of a best mode inquiry), the court offered the following explanation:

It is concealment of the best mode of practicing the *claimed invention* that section 112 para. 1 is designed to prohibit. Here the claimed invention is a portable machine for cleaning computer disk packs. Those of ordinary skill in this art are not users of the end device. The world is full of cleaning fluids produced by persons skilled in the cleaning fluid art, who know what are proper or improper uses for each cleaning fluid. . . . Those skilled in other arts [i.e., the use of disk cleaning machines] would simply ask those who knew [about cleaning fluids].⁵³

Had the court simply disposed of the case on the grounds that the “claimed invention” did not include any cleaning fluid, its holding would have been completely consistent with the earlier decision of *DeGeorge*. The court’s decision, however, rests on the finding that the preferred cleaning solution was disclosed adequately. Thus, contrary to the holding of *DeGeorge*, the court indicated that the best mode requirement demands disclosure of unclaimed subject matter, albeit only in some instances and in a limited way.⁵⁴

⁵⁰ 849 F.2d 585, 586 (Fed. Cir. 1988).

⁵¹ *See id.* at 589. In addition, the Randomex patent omitted the formula of the preferred cleaning solution. *Id.*

⁵² *See id.* at 589-90.

⁵³ *Id.* at 588-89.

⁵⁴ *See id.* at 589-90. The court used the following illustration to explain when a patent would have to disclose unclaimed subject matter:

Hofer and Fitzgerald posit that the *Randomex* court was “perhaps influenced” by the earlier decision of *Christianson*, noting that the *Randomex* court did not require a full disclosure of the preferred cleaning fluid formula “details.”⁵⁵ Indeed, to the extent that the court did not require *Randomex* to disclose the exact formula of the preferred cleaning solution, its decision is consistent with *Christianson*. However, the *Randomex* panel *did* require the patent to specify an example of the “preferred” cleaning fluid.⁵⁶

In contrast, both *DeGeorge* and *Christianson* teach that the *best mode* requirement *never* mandates disclosure of unclaimed subject matter where that subject matter does not reflect a preferred embodiment of the invention to which the patent is directed.⁵⁷ *DeGeorge* did not require the inventor in that case to disclose a specific example of an unclaimed word processor with which the claimed circuitry could be used. Likewise, the *Christianson* opinion did not invalidate patents covering gun parts for failing to mention the type of gun with which the parts could “best” be used. These difficulties are perhaps what lead Hofer and Fitzgerald themselves to point out an alternative way of viewing the position of the court in *Randomex*: “For unclaimed elements necessary to use an invention, the inventor must disclose their existence and provide a general description, but need not provide detailed information.”⁵⁸ This “rule,” which accurately represents the holding in *Randomex*, unquestionably imposes a heightened disclosure requirement as compared with *DeGeorge* and *Christianson*. However, the “rule” is more troubling because it confuses the separate and distinct requirements of enablement and best mode.⁵⁹

[I]f one should invent a new and improved internal combustion engine, the best mode requirement would require a patentee to divulge the fuel on which it would run best. This patentee, however, would not be required to disclose the formula for refining gasoline or any other petroleum product. Every requirement is met if the patentee truthfully stated that the engine ran smoothly and powerfully on Brand X super-premium lead free “or equal.”

Id. at 590.

⁵⁵ Hofer & Fitzgerald, *supra* n. 13, at 2328.

⁵⁶ See *Randomex*, 849 F.2d at 589-90.

⁵⁷ See text accompanying *supra* nn. 29-32, 39, 46.

⁵⁸ Hofer & Fitzgerald, *supra* n. 13, at 2328.

⁵⁹ See text accompanying *supra* nn. 8-11.

3. *Dana Corp. v. IPC LP*

In *Dana Corp. v. IPC LP*, a Federal Circuit panel invalidated a patent covering a rubber valve stem seal.⁶⁰ In particular, the court held that the patent failed to satisfy the best mode requirement because it did not disclose an unclaimed rubber fluoride treatment.⁶¹ The inventor's experiments demonstrated that the fluoride treatment was “*necessary* to [the] satisfactory performance of [the] seal.”⁶² Because the treatment was “*necessary*” for the seal to function, why the court chose to invalidate the patent based on a best mode violation is inexplicable; *Dana* presents a prototypical enablement violation.⁶³ Any patent which is not enabling, *a fortiori*, violates the best mode requirement of 35 U.S.C. § 112.⁶⁴ That the court improperly decided *Dana* on best mode grounds, when the disputed subject matter was *not* claimed, merely served to further obfuscate the relationship between claim scope and the best mode requirement.

As a result, *Dana* does not contribute to a refinement of the contours of the best mode requirement with respect to claim scope. The *Dana* situation is comparable to an experiment lacking a control group. The best mode requirement mandates something beyond mere enablement; the additional obligations imposed by the best mode requirement can only be “*discovered*” *when the enablement requirement is satisfied*, and the dispute surrounds only the best mode requirement. It is nonsensical to discuss whether a patent adequately sets forth the best mode when it, in fact, enables *no mode*. Hence the flawed nature of the court's opinion in *Dana*—the problem with the patent was really one of enablement, which requires the disclosure of unclaimed subject matter, if necessary “to enable any person skilled in the art . . . to make and use” the invention.⁶⁵

⁶⁰ 860 F.2d at 416.

⁶¹ *Id.* at 419-20.

⁶² *Id.* at 418 (emphasis added).

⁶³ See *White Consol. Induss., Inc. v. Vega Servo-Control, Inc.*, 713 F.2d 788, 791 (Fed Cir. 1983). In *White Consol.*, the court upheld the district court's invalidation of a patent for “noncompliance with the enablement requirement of 35 U.S.C. § 112.” *Id.* at 790. In so holding, the Federal Circuit panel commented that they did not need to “consider the correctness of the finding of noncompliance with the best mode requirement.” *Id.* at 790 n. 1.

⁶⁴ If the statutory enablement requirement is not met, the patent does not simply fail to enable the *best* mode. Rather, the patent fails to enable *any* mode.

⁶⁵ *White Consol.*, 713 F.2d at 790 (quoting 35 U.S.C. § 112). Correctly formulated, *Dana*'s duty to disclose the fluoride treatment arose from the enablement requirement. See Marchese, *supra* n. 1, at 605 n. 95.

4. *Northern Telecom, Inc. v. Datapoint Corp.*

In *Northern Telecom, Inc. v. Datapoint Corp.*,⁶⁶ the court confronted a set of facts remarkably similar to those considered in *Randomex*.⁶⁷ In *Datapoint*, the patent at issue claimed a programmable, processor-based batch data entry terminal which “provided an improved way of entering, verifying, and storing data.”⁶⁸ The patent specification explained that the invention stored data on cassettes “of the type which are almost universally available for audio purposes.”⁶⁹ The alleged infringer (Datapoint) argued that the patent was invalid for failing to state a best mode: the patent did not disclose the inventor’s preferred type of audio tape.⁷⁰ The district court, agreeing with Datapoint, found that the patentee did not disclose its preferred tape cassettes which were “of its own design and specifications and that these were different from standard audio tapes in their yield strength and magnetic characteristics.”⁷¹ The patentee, on the other hand, maintained that the best mode was enabled given that commercial audio tape was available on the market which met the patent specifications.⁷²

Affirming the district court’s decision, the Federal Circuit panel invalidated several claims of the patent due to a best mode violation.⁷³ The panel ruled that the patentee should have furnished either the brand name or the detailed specifications of its preferred commercial audio tape.⁷⁴

To support its terse conclusion, the court cited *Spectra-Physics*⁷⁵ and *Dana*⁷⁶ without elaboration.⁷⁷ Both cases are inapposite. At most, *Spectra-Physics* stands for the proposition that if there are “specific instrumentalities or techniques which are recognized at the time of filing as the best way of carrying out the invention, then the best mode requirement imposes an

⁶⁶ See 908 F.2d 931 (Fed. Cir. 1990).

⁶⁷ 849 F.2d at 585; see text accompanying *supra* nn. 50-59 (discussing *Randomex*).

⁶⁸ 908 F.2d at 933.

⁶⁹ *Id.* at 940.

⁷⁰ See *id.*

⁷¹ *Id.* (Significantly, the court did not explain *why* the patentee preferred a specific type of tape.).

⁷² See *id.*

⁷³ See *id.* at 940-41.

⁷⁴ See *id.* at 940.

⁷⁵ See 827 F.2d at 1524; see also text accompanying *supra* nn. 41- 49 (discussing *Spectra-Physics*).

⁷⁶ See 860 F.2d at 415; see also text accompanying *supra* nn. 60-65 (discussing *Dana*).

⁷⁷ See 908 F.2d at 940-41.

obligation to disclose that information to the public as well.”⁷⁸ In *Spectra-Physics*, the inadequately disclosed technique was used in the *construction* of the *claimed* laser.⁷⁹ In contrast, the undisclosed audio tape in *Datapoint* was neither specifically claimed by the patent, nor, more importantly, was the preferred tape necessary to construct or improve the *claimed* device itself.⁸⁰ Furthermore, as argued above, *Spectra-Physics* possibly was decided contrary to controlling precedent.⁸¹ *Dana* likewise does not aid the court’s logic because that case involved an enablement violation, not a best mode violation.⁸²

Surprisingly, the panel declined to cite *Randomex*,⁸³ which seems to support squarely the outcome in *Datapoint*. Recall that, in *Randomex*, the court held that a patent for a *device* used to clean computer disks had to disclose the inventor’s preferred, but unclaimed, cleaning fluid.⁸⁴ The *Datapoint* panel should have noted that the preferred audio tape was analogous to the cleaning fluid solution in *Randomex*. Perhaps, however, the *Datapoint* panel purposely declined to cite *Randomex* because the disclosure of the cleaning fluid in the latter case was held to have been adequately made. That is, *Randomex* only required that an inventor “disclose [the] existence [of unclaimed subject matter necessary for the use of a claimed device] and provide a general description, but need not provide detailed information.”⁸⁵ On the other hand, it appears that even the *Randomex* panel would have required the patentee in *Datapoint* to disclose, at the very least, the brand name of the preferred audio tape for use with the patented device. Whether or not *Randomex* provides support for the court’s decision in *Datapoint*, the holdings of both cases are not consistent with *DeGeorge* and *Christianson*, neither of which is mentioned in *Datapoint*.

⁷⁸ 827 F.2d at 1532 (begging the question whether “carrying out” means “make and use”).

⁷⁹ Recall, however, that the court did not explain how the use of the preferred brazing method resulted in an improved laser. *See id.* at 1527-30. “The TiCuSil active metal process is preferred because it requires only one step and avoids the need for premetalization.” *See id.* at 1530.

⁸⁰ *See* 908 F.2d at 933.

⁸¹ 827 F.2d at 1527-32; *see* text accompanying *supra* nn. 44-49 (discussing *Spectra-Physics*).

⁸² 860 F.2d at 415, 418-20; *see* text accompanying *supra* nn. 60-65 (discussing *Dana*).

⁸³ 849 F.2d at 585.

⁸⁴ *Id.* at 589-90.

⁸⁵ A general description was provided by the patent specification. Hofer & Fitzgerald, *supra* n. 13, at 2328.

C. Chemcast—A Failed Attempt to Clarify Best Mode Jurisprudence

As discussed in Section I,⁸⁶ a unanimous 1990 Federal Circuit panel (in *Chemcast Corp. v. Arco Industries Corp.*) explicitly articulated a two-step “proper best mode analysis.”⁸⁷ The panel affirmed the district court’s invalidation of Chemcast’s patent for failing to meet the best mode requirement.⁸⁸ The patent, which covered a grommet, failed to specify the “(1) the particular type, (2) the hardness, and (3) the supplier and trade name, of the [preferred] material used to make the locking portion of the grommet.”⁸⁹ The preferred material was PVC Reynosol Compound R-4467.⁹⁰ While Chemcast argued that the Reynosol material was unclaimed, the Federal Circuit held differently: “Chemcast is mistaken in its claim interpretation. . . . [T]he information the applicant is accused of concealing . . . describes the preferred embodiment of a *claimed* element.”⁹¹ Thus, in *Chemcast*, the court’s decision ultimately rested on a finding that the undisclosed subject matter (i.e., the preferred material for the grommet) was subject to the best mode requirement because it was related to a claim limitation.⁹² Interestingly, the *Chemcast* court failed to explain *why* the inventor preferred a particular material. It is true that the hardness measurement of the Reynosol compound was not the same hardness measurement revealed in the specification, but the court did not indicate that the variation was of any significance in terms of the quality or functionality of the grommet.⁹³

⁸⁶ See *supra* § I.

⁸⁷ The two-step test was implicitly utilized by earlier Federal Circuit panels. 913 F.2d at 927-28; see text accompanying *supra* nn. 21-26.

⁸⁸ See *Chemcast*, 913 F.2d at 926, 930.

⁸⁹ *Id.* at 926.

⁹⁰ See *id.* at 929.

⁹¹ *Id.* at 928 (emphasis added).

⁹² *Id.* at 929 (“The question is not whether those skilled in the art could make or use the [patented] grommet without knowledge of the Reynosol compound R-4467; it is whether they could practice [the inventor’s] contemplated best mode which, the court found, included specifically the Reynosol compound. . . . Because Chemcast used only R-4467, because certain characteristics of the grommet material were claimed elements of the . . . invention, and because [the inventor] himself did not know the formula, composition, or method of manufacture of R-4467, section 112 obligated [the inventor] to disclose the specific supplier and trade name of his preferred material.”).

⁹³ See *id.* at 930. Perhaps that is why the court was forced to say that “where the inventor has failed to disclose the *only* mode he ever contemplated of carrying out his invention,

A detailed examination of the *Chemcast* framework reveals several difficulties. First, the court quoted *Randomex* in support of the proposition that claim scope is an “objective limitation on the extent of the disclosure required to comply with the best mode requirement.”⁹⁴ However, the *Randomex* quote was dicta, a statement made by the court only in the course of finding that a faulty jury question had been used by the lower court.⁹⁵ Thus, the *Chemcast* opinion quite effectively obscured the fact that the *Randomex* court ultimately required the patent in that case to disclose *unclaimed* subject matter.⁹⁶

Second, the *Chemcast* panel’s exposition of the two-step best mode analysis was, at best, imprecise, and, at worst, inconsistent. The court stated that the first component is “whether, at the time the inventor filed his patent application, he knew of a mode of practicing his *claimed invention* that he considered to be better than any other.”⁹⁷ The court labeled that part of the inquiry as “wholly subjective.”⁹⁸ The first component is not, however, “wholly subjective” because the scope of the “*claimed invention*” is an “objective inquiry” and is acknowledged by the court as such several times.⁹⁹ The *Chemcast* court further obfuscated its opinion by saying that the second part of the best mode analysis involves “assessing the *adequacy* of the disclosure, as opposed to its necessity, . . . [and] depends upon the scope of the claimed invention.”¹⁰⁰ However, in the preceding paragraph of its opinion, the court, quoting *Christianson*, indicated that the question of claim scope was a part of the first step of a best mode analysis: “[T]he focus of the best mode requirement . . . is on the *claimed invention*. Thus, *before* determining whether there is evidence of concealment, the scope of the

the best mode requirement is violated.” *Id.* (emphasis added) (citing *Dana*, 860 F.2d at 418-20, and *Spectra-Physics*, 827 F.2d at 1531). This new standard is problematic in light of the preferred embodiment rule of *DeGeorge*. See Arnold, *supra* n. 46, at 71 (opining that, in dicta, the *Chemcast* panel “specifically repudiates the preferred embodiment rule”).

⁹⁴ “It is concealment of the best mode of practicing the *claimed invention* that section 112 para. 1 is designed to prohibit.” 913 F.2d at 927 (quoting *Randomex*, 849 F.2d at 588). The *Chemcast* panel also resurrected *Christianson* and *DeGeorge*, cases ignored in *Datapoint*. See *id.*

⁹⁵ *Randomex*, 849 F.2d at 589.

⁹⁶ *Id.* at 589-90 (explaining that *Randomex* cannot be harmonized with *DeGeorge* and *Christianson*, a feat which *Chemcast*, 913 F.2d at 927, attempts).

⁹⁷ *Chemcast*, 913 F.2d at 928 (emphasis added).

⁹⁸ *Id.*

⁹⁹ See *id.* at 927-28.

¹⁰⁰ *Id.* at 928.

invention must be delimited.”¹⁰¹ The distinction is subtle, yet crucial. If claim scope is an element of the first-step in best mode analysis, claim scope will serve to limit “whether the inventor must disclose *any* facts in addition to those sufficient for enablement.”¹⁰² But if claim scope is included in the second component of best mode analysis, greater disclosure will be required: since the second part centers around “assessing the adequacy of disclosure,” claim scope will dictate not “if” to disclose, but merely “how much” to disclose.¹⁰³ While *Randomex* might support positioning claim scope in the second component, *DeGeorge* and *Christianson* do not.¹⁰⁴

Finally, Judge Mayer, writing for the unanimous *Chemcast* panel, stated: “most of the cases in which we have said that the best mode requirement was violated addressed situations where an inventor failed to disclose non-claimed elements that were nevertheless necessary to practice the best mode of carrying out the claimed invention.”¹⁰⁵ Only two cases were cited for this claim: *Dana* and *Spectra-Physics*. The *Dana* decision, however, is inapposite, having mischaracterized an enablement violation as a best mode violation.¹⁰⁶ Moreover, knowledge of the unclaimed TiCuSil brazing method in *Spectra-Physics* was *not* necessary to practice the claimed invention.¹⁰⁷ Indeed, Judge Mayer’s statement “begs the question”—what is the definition of the phrase “best mode of carrying out the claimed invention”?¹⁰⁸ The statute is not self-explicating and leaves unanswered whether the “best mode of carrying out the invention” ever includes unclaimed subject matter. While the enablement requirement may compel the disclosure of non-claimed elements, *DeGeorge* and *Christianson*, cited

¹⁰¹ *Id.* at 927 (quoting *Christianson*, 870 F.2d at 1301 (emphasis added)).

¹⁰² *Id.* at 928 (emphasis added).

¹⁰³ *See id.*

¹⁰⁴ *Randomex*, 849 F.2d at 589-90; *see* text accompanying *supra* nn. 50-59 (discussing *Randomex*). In *DeGeorge*, for example, the patent indicated that the circuitry was for use with a word processor but did not indicate a specific type. 768 F.2d at 1325. Indeed, the only reason the *DeGeorge* patent specified a word processor at all was to comply with the enablement requirement. *Id.* at 1323-24 (“DeGeorge does disclose the portion of the preexisting device, *e.g.*, word processor, to be altered to accommodate the [claimed] TCCPI circuit. DeGeorge need not disclose all circuit details of a word processor or the like.”).

¹⁰⁵ 913 F.2d at 928.

¹⁰⁶ 860 F.2d at 415; *see* text accompanying *supra* nn. 54-64.

¹⁰⁷ 827 F.2d at 1532; *see supra* text accompanying n. 46.

¹⁰⁸ 913 F.2d at 928.

with approval by *Chemcast*, deny that the best mode imposes any independent obligation to reveal non-claimed subject matter.¹⁰⁹

D. *Post-Chemcast Confusion*

1. *Engel Industries, Inc. v. The Lockformer Co.*

In *Engel Industries, Inc. v. The Lockformer Co.*,¹¹⁰ the next case addressing the relationship between claim scope and the best mode requirement, the Federal Circuit implicitly retreated to its earlier opinions in *DeGeorge* and *Christianson*. Overturning the district court below, the *Engel* panel refused to find a best-mode violation and emphatically declared: “The best mode inquiry is directed to what the applicant regards as the invention, which in turn is measured by the claims. Unclaimed subject matter is not subject to the disclosure requirements of § 112; the reasons are pragmatic: the disclosure would be boundless, and the pitfalls endless.”¹¹¹ The court did not cite *DeGeorge* or *Christianson*—notable omissions simply because the holding in *Engel* is virtually identical to the holding of those earlier cases.¹¹²

2. *Wahl Instruments, Inc. v. Acvious, Inc.*

Surveying the cacophonous array of Federal Circuit best mode opinions, the court in *Wahl* announced a new test, purportedly ground in precedent:

¹⁰⁹ *Id.* at 927; see Arnold, *supra* n. 46, at 71 (explaining that Judge Mayer’s statement can be read as requiring “disclosure of preferred methods of making, preferred non-claimed devices or compositions for use with the claimed structure, as well as preferred ingredients”).

¹¹⁰ See 946 F.2d 1528 (Fed. Cir. 1991).

¹¹¹ *Id.* at 1531.

¹¹² See Hofer & Fitzgerald, *supra* n. 13, at 2330-31 (positing a conflict between *Chemcast* and *Engel* and concluding that “*Chemcast* remains as precedent because only *en banc* Federal Circuit decisions can overrule prior Federal Circuit holdings”). Their conclusion is incorrect for several reasons. First, Hofer and Fitzgerald failed to consider that any statement about unclaimed subject matter in *Chemcast* is arguably dicta. See text accompanying *supra* n. 92; see also Arnold, *supra* n. 46, at 71. Indeed, Hofer and Fitzgerald acknowledge as much in their discussion of *Chemcast*. Hofer & Fitzgerald, *supra* n. 13, at 2329 (“The [*Chemcast*] court considered the omitted information to be within the scope of the claims . . .”). Second, to the extent that *Engel* merely emphasized the court’s earlier decision in *DeGeorge*, which preceded *Chemcast*, *Engel* should be considered controlling precedent, not *Chemcast*.

Under our case law, there is no mechanical rule that a best mode violation occurs because the inventor failed to disclose particular manufacturing procedures beyond the information sufficient for enablement. One must look at the scope of the invention, the skill in the art, the evidence as to the inventor's belief, and all of the circumstances in order to evaluate whether the inventor's failure to disclose particulars of manufacture gives rise to an inference that he concealed information which one of ordinary skill in the art would not know.¹¹³

To the extent that the *Wahl* court merely acknowledged the ad hoc nature of Federal Circuit decisions in controversies surrounding the best mode requirement, the above statement is accurate.¹¹⁴ However, no prior Federal Circuit opinion ever professed a "totality of the circumstances" test such as the one arguably promulgated by *Wahl*.¹¹⁵ The *Wahl* panel notably failed to discuss the best mode framework articulated by *Chemcast*.¹¹⁶

As a corollary to its newly promulgated best mode test, the court in *Wahl* attempted to clarify when the best mode provision requires disclosure of unclaimed subject matter: "[T]he inventor's manufacturing materials or sources or techniques used to make a device may vary from wholly irrelevant to critical."¹¹⁷ The crucial point, according to the *Wahl* panel, is whether the disputed subject matter is "a particular method of making which substantially improves the operation or effectiveness of his invention."¹¹⁸ If so, "failure to disclose such [a] peripheral development may well lead to invalidation" based on a best mode violation.¹¹⁹ The *Wahl* court cited only *Spectra-*

¹¹³ 950 F.2d at 1580.

¹¹⁴ The court cited only two cases for its novel proposition cited in the text above: *Engel* and *Randomex*. See *id.* As explained earlier, *Engel* only echoed *DeGeorge*. See text accompanying *supra* n. 111. Furthermore, *Randomex* is inconsistent with the earlier *DeGeorge* decision. See *supra* § III(B)(2). By citing only *Engel* and *Randomex*, and by doing so without comment, the Federal Circuit in *Wahl* apparently understood the conflicting nature of its opinions. Unfortunately, rather than committing to controlling precedent (i.e., *DeGeorge* and *Engel*), the *Wahl* panel explains the inconsistencies with a new formulation of best mode analysis. See Marchese, *supra* n. 1, at 609-14. According to Marchese, *Engel* and *Wahl* are "inconsistent." See *id.* at 609. However, that is not entirely accurate. *Wahl* attempted to construct a theory of best mode which might be used to explain both *Engel* and *Randomex*. Thus, *Wahl* is not "inconsistent" with either case. Rather, it is *Engel* and *Randomex*, the cases cited in *Wahl*, that are inconsistent with each other.

¹¹⁵ See Arnold, *supra* n. 46, at 77.

¹¹⁶ See 950 F.2d at 1579-80.

¹¹⁷ *Id.* at 1579.

¹¹⁸ *Id.* (contrasting "production specifications," details that "an inventor is not required to supply").

¹¹⁹ *Id.*

*Physics*¹²⁰ to support its distinction between unclaimed methods that enhance the “effectiveness” of an invention (and are therefore relevant to a best mode dispute) and information which constitutes mere “production specifications,” the disclosure of which is not required.¹²¹

Spectra-Physics is entirely inapposite. The TiCuSi brazing method, the subject of the alleged best mode violation in *Spectra-Physics*, was indeed unclaimed as *Wahl* suggests.¹²² However, that brazing process was preferred solely “because it require[d] only one step and avoid[ed] the need for premetalization.”¹²³ Contrary to the *Wahl* panel’s assertion, *Spectra-Physics* never suggested that unclaimed subject matter needs to be disclosed only if it “substantially improves the operation or effectiveness” of the invention.¹²⁴ In fact, then, the *Wahl* rule—that unclaimed subject matter must somehow enhance the invention to be relevant to a best mode challenge—would have necessitated a different outcome in *Spectra-Physics*.

While the *Wahl* court might have erred in its reliance on *Spectra-Physics*, its reasoning is persuasive nonetheless:

Any process of manufacture requires the selection of specific steps and materials over others. The best mode does not necessarily cover each of these selections. To so hold would turn a patent specification into a detailed production schedule, which is not its function A step or material or source or technique considered “best” in a manufacturing circumstance may have been selected for a non-“best mode” reason, such as the manufacturing equipment was on hand, certain materials were available, prior relationship with supplier was satisfactory, or other reasons having nothing to do with development of the invention.¹²⁵

¹²⁰ See 827 F.2d at 1524.

¹²¹ *Wahl*, 950 F.2d at 1579.

¹²² 827 F.2d at 1527-32; see text accompanying *supra* nn. 41-49 (discussing *Spectra-Physics*).

¹²³ *Spectra-Physics*, 827 F.2d at 1530.

¹²⁴ *Wahl*, 950 F.2d at 1579.

¹²⁵ *Id.* at 1581.

Therefore, the best mode requirement does not mandate that an inventor disclose a “method of manufacture . . . selected solely for cost/volume reasons. How to mass produce the device is not . . . a best mode of his invention or part of what he invented.”¹²⁶

Wahl is also significant because it appears to be the first case in which a Federal Circuit panel identified the cause of confusion in best mode jurisprudence: “The words in the statute are not without ambiguity. This case illustrates that the term ‘mode’ and the phrase ‘carrying out the invention’ are not definable with precision.”¹²⁷

3. *United States Gypsum Co. v. National Gypsum Co.*

A unanimous Federal Circuit panel correctly invalidated the patent at issue in *United States Gypsum*.¹²⁸ In that case, National Gypsum raised the best mode issue as a defense to an infringement suit brought by United States Gypsum (USG).¹²⁹ USG’s patent covered a “lightweight joint compound” which consisted of, amongst other ingredients, “expanded perlite which has been treated with a silicon compound to render it water insensitive.”¹³⁰ National Gypsum argued that the patent failed to disclose the inventor’s preferred perlite: Sil-42.¹³¹ USG countered that Sil-42 was selected “only because it was available in large quantities” and therefore, based on *Wahl*, the omission of Sil-42 did not constitute a best mode violation.¹³²

¹²⁶ *Id.* at 1582. This aspect of *Wahl* has been affirmed and discussed by subsequent Federal Circuit panels. See e.g. *U.S. Gypsum Co. v. Natl. Gypsum Co.*, 74 F.3d 1209, 1213 (Fed. Cir. 1996) (“Disclosure concerning the best mode of practicing an invention must be distinguished for best mode purposes from disclosure for optimum commercial production. The former is required; the latter is not.”). In *Young Dental Manufacturing Co. v. Q3 Special Products, Inc.*, the court distinguished between “production details” and “routine details.” 112 F.3d 1137, 1144 (Fed. Cir. 1997). “[T]rue production details . . . [refer] to commercial considerations that do not relate to the quality or nature of the invention, such as equipment on hand or prior relationships with suppliers.” *Id.* While the court has often labeled them “production details . . . [r]outine details are details that are apparent to one of ordinary skill in the art.” *Id.* The *Young* court stressed that a distinction ought to be made between production and routine details because the latter “do relate to the quality or nature of the invention.” *Id.* (emphasis added).

¹²⁷ *Wahl*, 950 F.2d at 1579.

¹²⁸ 74 F.3d at 1216.

¹²⁹ *Id.* at 1211.

¹³⁰ *Id.* at 1211 n. 5.

¹³¹ *Id.* at 1211-12.

¹³² *Id.* at 1213.

In reaching its conclusion that USG should have disclosed the Sil-42 as its preferred perlite, the panel rejected USG's reliance on *Wahl*.¹³³ The panel found that the "selection of Sil-42 perlite was not a 'routine manufacturing choice' made 'because of expected volume of production' or 'reasons of cost.'"¹³⁴ Rather, "Sil-42 perlite was essential to improving the invention; the material was not selected as a matter of commercial expediency."¹³⁵

That the preferred perlite (Sil-42) was itself not the claimed invention was not decisive, nor ought it have been.¹³⁶ The crucial fact was that Sil-42 was the preferred type of perlite for use in the *claimed* lightweight joint compound.¹³⁷ Indeed, it is that fact which makes the court's decision in *United States Gypsum* not inconsistent with its holdings in *DeGeorge*¹³⁸ and *Christianson*.¹³⁹ In those cases, the patentee omitted details that were *not* relevant to the effectiveness or quality of an embodiment of the *claimed* invention.¹⁴⁰ In contrast, the USG patent omitted information (the use of Sil-42) that was necessary to manufacture a superior embodiment of the *claimed* joint compound.¹⁴¹

On the surface, the holding in *United States Gypsum* seems to track the *Spectra-Physics* and *Chemcast* decisions. In all three cases, the omitted information was germane to claim limitations (e.g., the material used to make the locking portion of the grommet in *Chemcast*, and the TiCuSil brazing method in *Spectra-Physics*) but not specifically claimed.¹⁴² However, in *Chemcast* and *Spectra-Physics*, the best mode violation was based on the

¹³³ *Id.*

¹³⁴ *Id.* (citing *Wahl*, 950 F.2d at 1581).

¹³⁵ *Id.*

¹³⁶ Indeed, the best mode requirement was created precisely to discourage the type of behavior in which USG engaged. While not legally relevant *per se*, the court pointed out that "all the formulations [of the joint compound] that [the inventor] sent to the attorney listed Sil-42 perlite as a component" but that "a USG executive instructed the attorney to omit from the application any reference to Sil-42." *Id.* at 1211.

¹³⁷ *Id.* at 1213.

¹³⁸ 768 F.2d 1318; *see supra* § III(A).

¹³⁹ 822 F.2d 1544; *see supra* § III(A).

¹⁴⁰ *Christianson*, 822 F.2d at 1563; *DeGeorge*, 786 F.2d at 1325; *see supra* § III(A).

¹⁴¹ *U.S. Gypsum*, 74 F.3d at 1213-14 (noting that the inventor had a "best mode of practicing the *claimed* invention" (emphasis added)).

¹⁴² *See supra* §§ III(B)(1), III(C). The Sil-42 itself was not claimed by the USG patent. *U.S. Gypsum*, 74 F.3d at 1211.

failure of the patents to disclose information that did *not* enhance the properties or effectiveness of the specifically claimed invention.¹⁴³

Recall that Hofer and Fitzgerald derived the following principle from the court's holding in *Spectra-Physics*: "If an inventor considers a specific technique to be the best way of making an invention, *and use of that technique improves the quality or performance of the product*, the technique must be disclosed."¹⁴⁴ There are two difficulties with that statement. First, the "rule" cannot be derived from *Spectra-Physics* in that the TiCuSil brazing method did not improve the quality or performance of the invention at issue.¹⁴⁵ Additionally, while the "rule" itself arguably characterizes the holding of *United States Gypsum*, it is not clear whether the rule is accurate at all, in light of a later Federal Circuit opinion.¹⁴⁶ That is, the rule as framed by Hofer and Fitzgerald states a condition that the technique improves the quality or performance of the invention, which, if satisfied, is "sufficient" to require disclosure.¹⁴⁷ However, the rule, correctly framed, should state the condition as a "necessary" one: the best mode requirement mandates the disclosure of information *only* if it would improve the inherent quality or performance of the claimed product.

This "revision" of the rule posited by Hofer and Fitzgerald is reflected in the Federal Circuit's discussion of the best mode requirement in *Young Dental Manufacturing Co. v. Q3 Special Products, Inc.*, in which the court reiterated that "[t]he best mode requirement does not apply to 'production details.'"¹⁴⁸ *Young Dental* explained that "production details" refers to "commercial considerations that do not relate to the quality or nature of the invention." "Routine details," on the other hand, "do relate to the quality or nature of the invention" but do not need to be disclosed because they "are details that are apparent to one of ordinary skill in the art."¹⁴⁹ Thus, according to *Young Dental*, there are three categories of

¹⁴³ See *supra* §§ III(B)(1), III(C). Moreover, *United States Gypsum* is distinguishable from *Randomex*. In *Randomex*, the court explained that a hypothetical patent on a gasoline engine would have to disclose the best type of gas for use with the claimed engine. 849 F.2d at 590 n. *. However, in the hypothetical case, the unclaimed gas (like the unclaimed cleaning fluid in *Randomex*) does not enhance the quality of the claimed device itself. *Id.* In *United States Gypsum*, the use of unclaimed Sil-42 improved the claimed joint compound. 74 F.3d at 1212.

¹⁴⁴ Hofer & Fitzgerald, *supra* n. 13, at 2327 (emphasis added); see *supra* n. 49.

¹⁴⁵ See *supra* n. 49 and accompanying text.

¹⁴⁶ See *infra* nn. 148-150 and accompanying text.

¹⁴⁷ Hofer & Fitzgerald, *supra* n. 13, at 2327.

¹⁴⁸ 112 F.3d at 1144 (quoting *Wahl*, 950 F.2d at 1579-80).

¹⁴⁹ *Id.*

information: (1) details that relate to the quality of the invention but are not apparent to one of ordinary skill in the art (disclosure mandatory); (2) details that relate to the quality of the invention and apparent to one of ordinary skill in the art (no disclosure requirement); (3) details that do not relate to the quality of the invention (no disclosure requirement).¹⁵⁰ This understanding of the best mode requirement arguably dictates an outcome in *Chemcast* different than the one actually reached by the panel.

Recall that *Chemcast* primarily stands for the following rule: “where the inventor has failed to disclose the *only* mode he ever contemplated of carrying out his invention, the best mode requirement is violated.”¹⁵¹ But, *Young Dental* teaches that there is no best mode violation where the lack of disclosure involves details that do not relate to the quality of the invention.¹⁵² The district court in *McGinley* implicitly found the holdings of *Minco* and *Chemcast* not to be mutually exclusive, but that is neither intuitive nor correct.¹⁵³ The *Chemcast* panel accused the patentee of “confus[ing] enablement and best mode.”¹⁵⁴ However, it is the court that was mistaken: *the court conceded that the patent was enabling and yet declared that only one undisclosed mode was contemplated by the inventor*—those two facts are mutually exclusive.¹⁵⁵

Chemcast’s argument was simply the same principle articulated by *Young Dental* and *Minco*—that a failure to disclose a preferred mode does not necessarily create a best mode violation.¹⁵⁶ Rather, the preferred embodiment must, *in fact*, “be better” than an alternative contemplated embodiment. In *Chemcast*, there was no finding that the preferred “material used to make the locking portion of the grommet” was better than the materials disclosed by the specification.¹⁵⁷ That the inventor of the grommet

¹⁵⁰ *Id.*

¹⁵¹ *Chemcast*, 913 F.2d at 930.

¹⁵² 112 F.3d at 1144; *see also Minco, Inc. v. Combustion Engr., Inc.*, 95 F.3d 1109, 1116 (Fed. Cir. 1996) (explaining that “the record must first show [the inventor’s] appreciation of the superiority of one mode over those modes disclosed in the specification” for there to be a best mode violation) (citing *Glaxo Inc. v. Novopharm Ltd.*, 52 F.3d 1043, 1050 (Fed. Cir. 1995)); *McGinley v. Franklin Sports, Inc.*, 75 F. Supp. 2d 1218, 1230 (D. Kan. 1999) (finding no best mode violation and noting that “the allegedly undisclosed preferred embodiment must be, at the very least, better than, and ultimately superior to, the disclosed embodiment”).

¹⁵³ *See* 75 F. Supp. 2d at 1230-32.

¹⁵⁴ 913 F.2d at 929.

¹⁵⁵ *See id.* at 929-30.

¹⁵⁶ *Id.* at 928.

¹⁵⁷ *Id.* at 928-29.

in practice used only a specific material should not have provided a sufficient basis for a best mode violation. The court might have found instead that, because the inventor did not know that the material disclosed in the specification would in fact function at all, the patentee violated the enablement requirement. The court, however, rather than find an enablement violation, chose instead to hold that the patent failed the best mode requirement despite the fact that there was no evidence that the preferred mode was “better.”¹⁵⁸ There is no rationale to support why a party should be exempt from having to prove, in advancing a best mode claim, that the nondisclosed embodiment is “better”—even in the case where the inventor arguably had not considered any other embodiment.¹⁵⁹

While *Young Dental* does not explicitly reject the idea of a fourth category—details that do not relate to the quality of the invention but which are more than mere “production details” or “commercial concerns”—it is difficult to envision the nature of such information. If the omitted (and putatively non-commercial) details do not relate to an improvement in the performance or characteristics of a device, for example, those details cannot relate to a preferred embodiment. Perhaps, then, one might postulate that the focus need not be on “embodiments” of the specifically claimed invention and that “carrying out” conveys “making” or “using.” Such an expansive reading of the statute, however, in light of *Wahl* and *Young Dental*, would force courts to engage in the difficult and imprecise task of deciding which steps in “constructing” or “using” are considerations that are “non-commercial” and which are not.

¹⁵⁸ See *id.* at 929-30.

¹⁵⁹ See *Wahl*, 950 F.2d at 1581-82 (“A step or material or source or technique considered ‘best’ in a manufacturing circumstance may have been selected for a non-‘best mode’ reason . . . reasons having nothing to do with development of the invention. . . . The record is devoid of [any proof] that embedment molding had to be disclosed because [the inventor] thought it was ‘best’ for any reason related to his invention other than the commercialization of a particular embodiment. . . . Had the filing of the patent application occurred before a commercial device was made by embedment molding, that best mode argument would be nonexistent. That he filed after a device was made by that method solely for commercialization purposes does not destroy the validity of his claims.”); see also *id.* at 1579 (“[I]f the inventor develops or knows of a particular method of making which *substantially improves the operation or effectiveness of his invention*, failure to disclose such [a] peripheral development *may well lead to invalidation.*”) (emphasis added).

E. Back to the Future

Federal Circuit decisions issued in the late-1990s are characterized by a marked shift towards reading the best mode requirement as mandating less disclosure, in line with *DeGeorge* and *Christianson*. That is not to say that the Federal Circuit somehow began to favor patent holders, or that panels are arriving at decisions in a “results oriented” manner—after all, *DeGeorge* and *Christianson* are controlling precedent.¹⁶⁰ The problem, however, is that the Federal Circuit has returned to those early principles *sub silentio*, leaving a disjointed collage of decisions.

1. *Applied Medical Resources Corp. v. Untied States Surgical Corp.*

Chief Judge Mayer, writing for a unanimous Federal Circuit panel in *Applied Medical*, quoted the *Chemcast* framework at length and then made the following observation regarding the relationship between the best mode requirement and claim scope: “[W]here the invention relates only to a part of, or one aspect of, a device, an applicant is not required to disclose a nonclaimed element necessary to the operation of the overall device, but not necessary to the operation of the invention to which the patent is directed.”¹⁶¹ Unfortunately, while not inconsistent with *DeGeorge* and *Christianson*, Judge Mayer failed to cite any precedent for this statement of law.¹⁶² Moreover, the statement conflicts with the holdings of both *Spectra-Physics* and *Randomex*.¹⁶³

In *Spectra-Physics*, the inventor did not fail to disclose the preferred embodiment of the invention to which the patent was directed (an ion laser).¹⁶⁴ Rather, the patent did not disclose an unclaimed “preferred method of making” and the court invalidated the patent on that basis.¹⁶⁵ Again, it is important to remember that the “preferred method of making” (i.e., TiCuSil

¹⁶⁰ See John R. Allison & Mark A. Lemley, *How Federal Circuit Judges Vote in Patent Validity Cases*, 27 Fla. St. U. L. Rev. 745 (summarizing the results of a study of Federal Circuit judge voting patterns, and concluding that “[j]udges do not fit easily into ‘pro-patent’ or ‘anti-patent’ categories, or into ‘affirmers’ and ‘reversers’”).

¹⁶¹ *Applied Med. Resources Corp. v. U.S. Surgical Corp.*, 147 F.3d 1374, 1377 (Fed. Cir. 1998).

¹⁶² See *id.*

¹⁶³ See *supra* §§ III(B)(1), (2).

¹⁶⁴ *Supra* § III(B)(1).

¹⁶⁵ *Id.*

brazing) in *Spectra-Physics* was neither specifically claimed itself, nor did it improve the device to which the patent was ultimately directed (i.e., the laser).¹⁶⁶

Can the holding in *Spectra-Physics* be reconciled with Judge Mayer's above quoted statement in *Applied Medical*? In other words, *Applied Medical* decidedly focused on "the invention to which the patent is directed," while *Spectra-Physics* did not.¹⁶⁷ In fact, *Applied Medical* held that where an invention "relates only to a part of, or one aspect of, a device," even where the patent claims contain a limitation referencing the "overall device," details relating to the operation of the overall device need not be disclosed.¹⁶⁸ Thus, not only did *Applied Medical* mirror the holding of *DeGeorge*, with which *Spectra-Physics* conflicted, but *Applied Medical* arguably demands more of a showing from parties advancing a best mode violation than did *Christianson*.¹⁶⁹

Judge Mayer's statement is also problematic in light of *Randomex*.¹⁷⁰ In *Randomex*, the disk cleaning solution was not part of the claimed invention.¹⁷¹ The claimed invention (i.e., a device used to clean computer disks) was merely one component of an overall device: the claimed device *plus* the unclaimed solution for use with the device.¹⁷² According to *Applied Medical* then, no details concerning the cleaning solution need be disclosed.¹⁷³ Yet, the *Randomex* panel assumed that the cleaning solution had to be disclosed at least in general terms.¹⁷⁴ Judge Mayer would not have required its disclosure.

¹⁶⁶ *Supra* n. 49 and accompanying text.

¹⁶⁷ *Applied Med.*, 147 F.3d at 1377.

¹⁶⁸ *Id.* (holding that such details need not be disclosed even where the "nonclaimed element [is] necessary to the operation of the overall device") (emphasis added).

¹⁶⁹ *See Christianson*, 822 F.2d at 1561. In *Christianson*, "no claim in any patent of record relates to or even mentions the M-16 or any other particular rifle" with which the claimed gun parts were designed to work." *Id.* In contrast, in *Applied Medical*, the claims at issue contained a limitation relating to the overall device. 147 F.3d at 1377 ("Surgical correctly notes that each asserted claim contains a trocar seal limitation and that the patents disclose a preference for a soft, stretchy and sticky seal made of low durometer polymer material.").

¹⁷⁰ *See Randomex*, 849 F.2d 585; *supra* § III(B)(2).

¹⁷¹ *Randomex*, 849 F.2d at 586; *see also Arnold*, *supra* n. 46, at 68 (noting that "the solution was not part of the invention").

¹⁷² *Randomex*, 849 F.2d at 586.

¹⁷³ *See* 147 F.3d at 1377.

¹⁷⁴ 849 F.2d at 589-90; *see Arnold*, *supra* n. 46, at 67-68 (noting that "the solution was not part of the invention").

Applied Medical did state that “an applicant is obliged to disclose nonclaimed elements necessary to the operation or carrying out of the invention to which the patent is directed.”¹⁷⁵ However, the panel cited only *Dana* for that proposition.¹⁷⁶ While one might hypothesize that this principle, which was determined to be inapplicable in *Applied Medical*, explains the outcomes of *Spectra-Physics* and *Randomex*, it cannot. First, TiCuSil brazing was not “necessary” to the claimed laser in any way.¹⁷⁷ And, while the cleaning fluid was necessary to properly *utilize* the disk cleaning device in *Randomex*, from where, other than *Randomex* itself, is it known that “carrying out”—the statutory language—includes “operation” or “utilization”? *Applied Medical* cannot provide the answer, in that the above quoted excerpt “begs the question” by employing the same language as the statute itself: “carrying out”—a term which is not self-defining.¹⁷⁸ Additionally, the two principles articulated in *Applied Medical* will often collide: at what point does “use” or “operation” make the device merely “a part of” or an “aspect of” another “overall device”? The answer to that question cannot be framed in a manner which could be predictably applied by patent drafters, and judges would be left to make ad-hoc evaluations. Finally, *Dana*, properly analyzed, sheds no light on the best mode requirement.¹⁷⁹ That being said, Judge Mayer’s latter statement of best mode law in *Applied Medical*, for which no case was cited as support, comports with both *DeGeorge* and *Christianson*, but not with Judge Mayer’s own dissent in *Randomex*.

2. *Northern Telecom Ltd. v. Samsung Electronics Co.*

The panel began its discussion of the best mode requirement by proclaiming that the Federal Circuit has “repeatedly held” that “the contours of the best mode requirement are defined by the scope of the claimed invention.”¹⁸⁰ The patent at issue claimed a “process for plasma etching of aluminum and aluminum oxide in the presence of a gaseous trihalide.”¹⁸¹ The

¹⁷⁵ 147 F.3d at 1377.

¹⁷⁶ *Id.* (citing 860 F.2d at 418).

¹⁷⁷ See *supra* n. 49 and accompanying text.

¹⁷⁸ 147 F.3d at 1377.

¹⁷⁹ See *supra* n. 65 and accompanying text.

¹⁸⁰ *N. Telecom Ltd. v. Samsung Elecs. Co.*, 215 F.3d 1281, 1286 (Fed. Cir. 2000) (citing *Engel Induss.*, 946 F.2d at 1531). As explained above, *Engel* accurately reflects the holdings of *DeGeorge* and *Christianson*. See text accompanying *supra* n. 112.

¹⁸¹ 215 F.3d at 1287.

patentee, Northern Telecom, admitted: (1) that it did not disclose the use of an aluminum silicon alloy; and (2) that knowledge of the aluminum silicon alloy was necessary to use the process in the manufacture of fine line semiconductor devices.¹⁸² Northern Telecom contended, however, that its concessions were “irrelevant to the best mode inquiry since its patent [was] not drawn to a process for manufacturing fine line semiconductor devices.”¹⁸³ The panel also observed that Northern Telecom’s patent did “not prohibit Samsung from manufacturing semiconductor devices with fine lines.”¹⁸⁴

Samsung argued that Northern Telecom’s process was designed for use in fine line etching; therefore “the best mode of avoiding the sparring phenomenon—which occurs at a step remote from the patented gaseous etching step—must be disclosed in the inventors’ patent.”¹⁸⁵ The panel rejected Samsung’s argument holding that “the district court misunderstood the invention at hand. . . . Fine line etching is simply not part of the claimed invention.”¹⁸⁶ Samsung relied on *Dana* and *Datapoint* in alleging the best mode violation.¹⁸⁷ The Federal Circuit panel distinguished those cases as involving “situation[s] in which the omitted best mode related directly to the claimed invention.”¹⁸⁸

The most notable part of the *Samsung* opinion, however, is dicta discussing *Dana* and *Datapoint* further. The panel claimed that “*Dana* and *Datapoint* are consistent with other decisions of this court in which we have held that unclaimed matter that is unrelated to the operation of the claimed invention does not trigger the best mode requirement.”¹⁸⁹ As an example, the *Samsung* panel argued that *Datapoint* was consistent with *Randomex*, which the court characterized as holding “that an inventor’s deliberate concealment of a preferred cleaning fluid formula did not violate the best mode requirement because his ‘invention neither added nor claimed to add

¹⁸² *See id.*

¹⁸³ *Id.* (noting that the “claimed process is advantageous in the manufacture of semiconductor devices, without regard to line width”).

¹⁸⁴ *Id.*

¹⁸⁵ *Id.*

¹⁸⁶ *Id.*

¹⁸⁷ *Id.* at 1288 (citing *Dana*, 860 F.2d at 419, and *Datapoint*, 908 F.2d at 940-41).

¹⁸⁸ 215 F.3d at 1288 (explaining that the asserted best modes in those cases “related not only to the claimed utility of the invention . . . but also to a specific claim limitation . . .”).

¹⁸⁹ *Id.* at 1289. As explained above, *Dana* involved an enablement violation, which the court mischaracterized as a best mode violation, and therefore does not provide any illumination of the contours of the best mode requirement. *See* text accompanying *supra* n. 65.

anything to the prior art respecting cleaning fluid.”¹⁹⁰ That description of the *Randomex* holding, however, is inaccurate and misleading. The court would have readers believe that the patentee in that case was exempt from disclosing information concerning the preferred cleaning fluid. Yet *Randomex* did not absolve the inventor from disclosure *per se*. In truth, *Randomex* merely held that the patent’s disclosure was adequate.¹⁹¹

Finally, the *Samsung* panel cited *DeGeorge* with approval and attempted to reconcile the latter’s holding with that of *Datapoint*.¹⁹² As argued above, *Datapoint* is not reconcilable with *DeGeorge*.¹⁹³ The *Samsung* approach focused on the fact that the “asserted best mode in *Datapoint* directly related both to the claimed utility...and a specific claim limitation,”¹⁹⁴ whereas the patent claims in *DeGeorge* “properly construed . . . [did] not include a word processor.”¹⁹⁵ *Samsung* is correct that the patent at issue in *DeGeorge* was interpreted as being silent to a specific claim limitation relating to a word processor. However, the language at issue in *DeGeorge* was necessarily part of the preamble.¹⁹⁶ And, by the *Samsung* panel’s own admission with regard to the patent-in-suit, “[t]he preamble of the claim clearly and unambiguously sets forth the utility of the claimed invention”¹⁹⁷ Thus, the crucial difference according to *Samsung* between the patent in *DeGeorge* and the one at issue in *Datapoint* is the presence of a claim limitation.¹⁹⁸ Yet, in *Applied Medical*, not discussed by

¹⁹⁰ 215 F.3d at 1289 (quoting *Randomex*, 849 F.2d at 590).

¹⁹¹ See *supra* § III(B)(2). *Samsung* posits that *Datapoint* and *Randomex* are not inconsistent because they are distinguishable. While the latter are arguably not inconsistent in *result*, the *Samsung* panel’s explanation of the *Randomex* holding is erroneous. If the two decisions are not inconsistent, it is because their holdings are so similar. See *supra* nn. 83-85 and accompanying text.

¹⁹² See 215 F.3d at 1289 (quoting *DeGeorge*, 768 F.2d at 1325).

¹⁹³ *Samsung* also suggests that *DeGeorge* and *Randomex* are consistent. This, too, is problematic to the extent that the holdings in *Randomex* and *Datapoint* are almost identical.

¹⁹⁴ 215 F.3d at 1289.

¹⁹⁵ *Id.* (quoting 768 F.2d at 1325).

¹⁹⁶ 768 F.2d at 1322 (“If, however, ‘having’ is viewed as a participle combined with ‘printing mechanism . . . of characters,’ it would be an adjective phrase in the claim preamble modifying ‘data processing system printer,’ and the word processor would not be part of the claimed invention.”).

¹⁹⁷ 215 F.3d at 1287 (explaining that the utility of the patent at issue in *Samsung* was “‘etching aluminum and aluminum oxide’”).

¹⁹⁸ And, by implication, not the utility specified in the preamble.

Samsung, a claim limitation was held to be irrelevant in light of the fact that the patents were not directed to the trocar and seal specifically.¹⁹⁹

3. *Mentor H/S, Inc. v. Medical Device Alliance, Inc.*

The opinion in this case contains only a short discussion of the best mode requirement.²⁰⁰ However, it is notable because it contains the Federal Circuit's strongest statement about the relationship between claim scope and the best mode requirement since *Engel*. Judge Lourie, writing for a unanimous Federal Circuit panel, and citing *Applied Medical*, stated: "An applicant is *only* obliged to disclose unclaimed elements when they are necessary to the operation of the invention."²⁰¹

There are, however, some significant differences between the original statement in *Applied Medical* (cited by *Mentor*) and its reformulation in *Mentor* as articulated by Judge Lourie. The original statement in *Applied Medical* reads: "[A]n applicant is obliged to disclose nonclaimed elements necessary to the operation or carrying out of the invention to which the patent is directed."²⁰² Amongst other alterations to the *Applied Medical* version, the *Mentor* panel added the word "only," and deleted the phrases "or carrying out of the invention" and "to which the patent is directed." *Mentor* is inconsistent with *Applied Medical* unless the meaning of Judge Lourie's more recent statement is held to be equivalent to its "source" in *Applied Medical*.

The differences between the two closely-worded statements cannot be dismissed easily as meaningless semantics. "[T]he invention to which the patent is directed" is an important phrase for it suggests that claim limitations are not as relevant as *Samsung*, for example, might suggest.²⁰³ Read in

¹⁹⁹ 147 F.3d at 1377 (explaining that "Surgical correctly notes that each asserted claim contains a trocar seal limitation" but holding that the decisive fact was that it was "evident from the patents that they are directed to the inventions of a seal pre-dilator, a seal protector, and a seal floater"). One might be tempted to read *Datapoint* as holding that the omitted information, alleged in a best mode violation argument, must relate both to the claimed utility *and* a claim limitation (i.e., both are necessary and neither is sufficient). However, that putative holding would fail to explain *Spectra-Physics*, *Randomex*, and *Chemcast*, in which the omitted information did not relate to an inherently improved embodiment of the invention to which the patent was directed.

²⁰⁰ 244 F.3d 1365, 1374-75 (Fed. Cir. 2001).

²⁰¹ *Id.* at 1375 (emphasis added) (citing *Applied Med.*, 147 F.3d at 1377). Interestingly, two out of the three judges on the *Mentor* panel were also on the *Applied Medical* panel, including Chief Judge Mayer, the author of *Applied Medical*. 147 F.3d at 1376.

²⁰² 147 F.3d at 1377.

²⁰³ *Id.*

context, it is evident that Judge Lourie did not intend to change the meaning of the *Applied Medical* version, at least with regard to the deletion of that phrase. Indeed, Judge Lourie points out that “the invention is *directed* to a method of using ultrasonic vibration to create heat and melt fat” and not to “the particular circuitry” that was the focus of the alleged best mode violation.²⁰⁴ Judge Lourie did not address the defendant’s argument that the circuitry was “directly related” to a claim limitation.²⁰⁵

The *Applied Medical* panel, however, unlike *Mentor*, did not explicitly qualify its statement with the word “only,” implying that there might be other situations in which “an applicant is obliged to disclose nonclaimed elements.”²⁰⁶ According to *Mentor*, on the other hand, it is only the enablement requirement which compels disclosure of unclaimed elements. That is, if the invention can be constructed without the disclosure of the unclaimed elements, the elements need not be disclosed (i.e., the best mode requirement never mandates the disclosure of unclaimed elements). In addition, and more importantly, both *Applied Medical* and *Mentor* agree that an element may be “unclaimed” even if it is somehow part of a claim limitation—the focus is placed on the “invention to which the patent is directed.”²⁰⁷

4. *Eli Lilly & Co. v. Barr Laboratories, Inc.*

Yet again, a panel of the Federal Circuit prefaced its discussion of the best mode requirement with a statement of general principle to which the court has not always been faithful. Judge Gajarsa, writing for another unanimous panel and citing *Spectra-Physics*, stated, “The best mode requirement creates a statutory bargained-for-exchange by which a patentee obtains the right to exclude others from practicing the claimed invention for a certain time period, and the public receives knowledge of the preferred embodiments for practicing the claimed invention.”²⁰⁸ *Spectra-Physics*, however, does not clearly support Judge Gajarsa’s description of the best mode requirement in that *Spectra-Physics* required *more* than the disclosure

²⁰⁴ 244 F.3d at 1375 (emphasis added).

²⁰⁵ *Id.* Defendants postulated that the circuit was “directly related” to the second step of claim 1 of “‘ultrasonically vibrating said probe at substantially high frequencies and low amplitudes, creating localized tissue separation and frictional heat,’ because the circuit is necessary to create the optimal conditions for frictional heating and melting fat.” *Id.*

²⁰⁶ 147 F.3d at 1377.

²⁰⁷ *Id.*

²⁰⁸ *Eli Lilly & Co. v. Barr Laboratories, Inc.*, 251 F.3d 955, 963 (Fed. Cir. 2001) (citing *Spectra-Physics*, 827 F.2d at 1532) (quoting *In re Gay*, 309 F.2d at 772).

of the inventor's "preferred embodiment." As one commentator explained it, *Spectra-Physics* objected to the "concealment of the preferred embodiment of the preferred method of making the claimed invention."²⁰⁹

While Barr advanced two best mode challenges, only one dealt with the role of claim scope: that the Lilly patent failed to disclose the inventor's preferred method for synthesizing a starting material (p-trifluoromethylphenol) used in making the compound to which the patent ultimately was directed (fluoxetine hydrochloride).²¹⁰ The court upheld the validity of the Lilly patents:

Neither patent . . . claims p-trifluoromethylphenol itself or a method for synthesizing it. Thus, while the best mode for developing fluoxetine hydrochloride involves use of p-trifluoromethylphenol, the claimed inventions do not cover p-trifluoromethylphenol and the patents do not accord Lilly the right to exclude others from practicing [the inventor's] method for synthesizing p-trifluoromethylphenol. *As a result*, the best mode requirement does not compel disclosure of [the] unclaimed method for synthesizing p-trifluoromethylphenol.²¹¹

Thus, the *Lilly* panel focused on the "bargain" between the patentee and the public: because the patentee could not exclude the public from practicing the omitted technique, the patentee was not required to disclose it. This holding is perfectly consistent with the Federal Circuit's early decisions in *DeGeorge* and *Christianson*, but conflicts with *Spectra-Physics*—the patentee in that case could not have excluded the public from practicing the TiCuSil brazing method yet a best mode violation was still found.²¹² Likewise, under the *Lilly* test, it is unclear why the patent at issue in *Chemcast* had to disclose a material used in making the *claimed* grommet when the patentee could not have precluded the public from using that same material in other, *unclaimed* objects (i.e., the *Chemcast* patent was not, in the language of *Applied Medical*, "directed to" the manufacture of the undisclosed material).²¹³

The *Lilly* panel contrasted its ruling with *Datapoint*, describing the latter case as one "in which an inventor failed to disclose unclaimed subject matter that was necessary for carrying out the best mode of the invention."²¹⁴ But that superficial assessment of *Datapoint* again merely "begs the question" whether the best mode of an invention ever includes unclaimed subject matter? *Applied Medical* and *Mentor* agree that if the unclaimed information is necessary to practice the invention (i.e., enablement), the

²⁰⁹ Arnold, *supra* n. 46, at 65-66 (original emphasis).

²¹⁰ 251 F.3d at 964.

²¹¹ *Id.* (emphasis added).

²¹² See *supra* § III(B)(1).

²¹³ See text accompanying *supra* nn. 86-97.

²¹⁴ 251 F.3d at 964 (citing *Datapoint*, 908 F.2d at 940-41).

unclaimed details must be disclosed.²¹⁵ However, those cases conclude that the *best mode requirement* never mandates the disclosure of unclaimed details.

Applied Medical is oddly cited by *Lilly* for the following proposition: “[I]f the best mode for carrying out a claimed invention involves novel subject matter, then an inventor must disclose a method for obtaining that subject matter even if it is unclaimed.”²¹⁶ However, that statement by the *Lilly* panel finds *no support* in *Applied Medical*.²¹⁷ To the contrary, *Applied Medical*, as interpreted by *Mentor*, holds that an “applicant is *only* obliged to disclose unclaimed elements when they are necessary to the operation of the invention.”²¹⁸ In other words, while the enablement requirement perhaps necessitates the disclosure of unclaimed subject matter, the best mode requirement does not.

IV. RECENT FEDERAL CIRCUIT DECISIONS

The two most recent Federal Circuit decisions extensively discussing the best mode requirement both attempt to reconcile the court’s various, and often-conflicting, panel decisions. Unfortunately for patent practitioners, these latest opinions, issued within months of each other during the summer of 2002, failed to acknowledge the analytical inconsistencies amongst prior Federal Circuit panel decisions. Consequently, best mode precedent remains sufficiently variegated that a range of legal propositions can be advanced with equal sincerity and support (depending upon the factual circumstances of a particular case). The cases discussed above cannot be harmonized and the Federal Circuit forthrightly should acknowledge that.

In *Teleflex, Inc. v. Ficosa North America Corp.*, Ficosa appealed the denial of its motion for summary judgment, in which it had argued that the patent at issue was invalid due to a best mode violation. The Federal Circuit panel affirmed the district court’s opinion in its entirety.²¹⁹

²¹⁵ See *supra* n. 201 and accompanying text.

²¹⁶ 251 F.3d at 964 (citing *Applied Med.*, 147 F.3d at 1377).

²¹⁷ The only statement in *Applied Medical* which could possibly serve as the basis for the *Lilly* panel’s assertion does not contain the word “best mode.” 147 F.3d at 1377 (“[W]e observe that an applicant is obliged to disclose nonclaimed elements necessary to the operation or carrying out of *the invention to which the patent is directed.*”) (emphasis added). *Applied Medical* does not say that “nonclaimed elements necessary to the operation or carrying out of the *best mode of the invention*” need to be disclosed.

²¹⁸ *Mentor*, 244 F.3d at 1375 (citing *Applied Med.*, 147 F.3d at 1377) (emphasis added).

²¹⁹ 299 F.3d 1313, 1317 (Fed. Cir. 2002).

The patent at issue covered a component of a two piece shift cable installed by General Motors in certain sport utility vehicles. The cable “connects the shift knob with the automatic transmission of the sport utility vehicle so that when a driver moves the shift knob, e.g., from ‘Park’ to ‘Drive,’ the transmission is engaged.”²²⁰ The best mode violation alleged by Ficosa involved a singled part of the shift cable—the “clip,” which, as its name suggests, served the function of holding two parts of the device together. Ficosa argued that the inventor “knew of a ‘best way’ of practicing the invention, including providing the clip with a particular thickness and matching the hardness of the clip” to the hardness of an element of the device to which the clip attached.²²¹ Teleflex, for its part, did not dispute that the thickness and hardness matching details were not disclosed, but argued that the those details were nothing more than “a function of GM’s [manufacturing] requirements.”²²² Thus, according to Teleflex, “the thickness and hardness of the materials of the clip [were] specific to the particular commercial embodiment of GM’s . . . program, and thus not the best mode of the invention of ‘182 patent.”²²³

Quite understandably, Ficosa relied on *Chemcast* (“[W]here the inventor has failed to disclose the only mode he has ever contemplated of carrying out his invention, the best mode requirement is violated”), while Teleflex countered with *Christianson* (“[T]he ‘best mode’ is that of practicing the *claimed* invention. It has nothing to do with mass production or with *sales* to customers having particular requirements.”).²²⁴

The Federal Circuit’s discussion of the best mode requirement began, much like this article, with a discussion of the purpose of the best mode requirement: “The best mode requirement creates a statutory bargained-for exchange by which a patentee obtains the right to exclude others from practicing the claimed invention for a certain time period, and the public receives knowledge of the preferred embodiments for practicing the claimed invention.”²²⁵ The opinion recited the now familiar “two-pronged” formulation of a best mode inquiry: (1) “whether the inventor considered a particular mode of practicing the invention to be superior to all

²²⁰ *Id.* at 1318.

²²¹ *Id.* at 1329.

²²² *Id.* (“Teleflex contends that the inventor explained that in the absence of GM’s specific requirements, the invention of the ‘182 patent would work with any particular thickness or hardness.”)

²²³ *Id.*

²²⁴ *Id.* (quoting *Chemcast*, 913 F.2d at 930, and *Christianson*, 822 F.2d at 1563 (emphasis in original)).

²²⁵ *Id.* at 1330 (citing *Eli Lilly*, 251 F.3d at 963).

other modes at the time of filing” (the “subjective” prong); and (2) “whether the inventor adequately disclosed the mode he considered to be superior” (the “objective” prong).²²⁶ Interestingly, and in contrast to other previous formulations, the *Teleflex* panel deleted any mention of claim scope from its formulation, adding, in the following paragraph, that “[w]ith respect to both the first and second prongs, [t]he best mode inquiry is directed to what the applicant regards as the invention, which in turn is measured by the claims.”²²⁷

Leaving aside, for the moment, the court’s outline of the “Contours of the Best Mode Requirement,” the court held, in applying the requirement, that because “[t]he claims do not mention any particular material, hardness, or material matching” or “any particular thickness” for the clip, “the information alleged to be part of the best mode and alleged to be missing from the disclosure is unclaimed subject matter.”²²⁸ Thus, the court concluded that “the relationship between the alleged missing information and the claimed invention does not implicate the best mode requirement.”²²⁹ The court also held that the “the clip thickness and hardness matching information” was simply “another example of production details that the law excepts from best mode disclosure.”²³⁰

What is disturbing about *Teleflex* is not the result reached by the court, but how it deals with binding precedent. The court’s result is admittedly consistent with *Young Dental*, which held that there can be no best mode violation where the lack of disclosure involves details that are unrelated to the quality of the invention.²³¹ However, as discussed above,

²²⁶ *Id.*

²²⁷ *Id.* at 1330-31 (quoting *Engel Induss.*, 946 F.2d at 1531).

²²⁸ *Id.* at 1332.

²²⁹ *Id.* Twice in support of its holding, the court states that clip thickness and hardness matching of the materials were not “necessary to carry out the invention,” but was instead “dictated by the customer requirements.” *Id.* The court, however, did not explain *why* the alleged information *would have to be* “necessary for operability of the invention.” *Id.* That omission is even more striking in light of the court’s statement that “this court has repeatedly disclaimed a link between enablement and best mode.” *Id.* at 1330. That is, if a patent fails to disclose information “necessary to carry out the invention,” the patent would be invalid for lack of enablement. However, the mere fact that missing information is not “necessary to carry out the invention” does not *ipso facto* mean that the information is exempt from disclosure under the best mode requirement. Indeed, such information might not be necessary, but the best mode requirement serves “to restrain inventors from applying for patents while at the same time concealing from the public *preferred embodiments* of their inventions which they have in fact conceived.” *Id.* (quoting *In re Gay*, 309 F.2d at 772) (emphasis added).

²³⁰ 299 F.3d at 1333 (citing *Eli Lilly*, 251 F.3d at 965).

²³¹ 112 F.3d at 1144.

Young Dental cannot be reconciled so easily, if at all, with *Chemcast*.²³² While *Young Dental* clearly held that the preferred embodiment must *in fact* “be better” than an alternative embodiment, considered or practiced by the inventor, recall that, in *Chemcast*, there was no finding that the preferred “material used to make the locking portion of the grommet” was somehow “better” than the materials disclosed by the specification.²³³ Indeed, the key postulate of the *Chemcast* panel—upon which the appellant in *Teleflex* focused its argument—was that “where the inventor has failed to disclose the only mode he ever contemplated of carrying out his invention, the best mode requirement is violated.”²³⁴ The *Teleflex* panel acknowledged this argument of appellant Ficosa in its overview of the parties’ positions,²³⁵ but failed to deal explicitly with it later in its opinion. Indeed, the *Teleflex* panel never attempted to distinguish the facts of the case before it from the *Chemcast* fact pattern, and a reader of the *Teleflex* opinion is left to struggle with why *Chemcast* does not dictate a different outcome in *Teleflex*.

Nonetheless, *Teleflex* is hardly devoid of value. To the contrary, the *Teleflex* panel critically recognized (despite its extensive citations to cases holding the contrary) that “we *have* found violations of the best mode requirement for failure to disclose subject matter not strictly within the bounds of the claims”²³⁶ Unfortunately, and erroneously, Judge Linn, the author of the *Teleflex* opinion, qualified that confession by stating that “even in [those] cases the alleged best mode information bore a strong relationship to the claimed invention or implicated questions of concealment.”²³⁷ The latter qualification is an obvious attempt by the court to reconcile those cases in which a best mode violation was not found (due perhaps to the limited scope of the claims), with cases in which a best mode inquiry was unrestrained by claim scope.

Judge Linn’s qualification and attempted reconciliation is unsound, both as a matter of law and public policy. First, *Teleflex*, rather than rejecting the line of cases which conflicted with *DeGeorge* and *Engel*, as contrary to earlier and therefore binding precedent, instead acknowledged the *ad hoc*—some might say “random”—nature of the court’s best mode decisions. That is, by declaring that a best mode violation properly *can*

²³² See *supra* § III(D)(3).

²³³ *Chemcast*, 913 F.2d at 928-29.

²³⁴ *Teleflex*, 299 F.3d at 1329 (quoting *Chemcast*, 913 F.2d at 930).

²³⁵ 299 F.3d at 1329 (“Ficosa relied on the statement of this court in *Chemcast Corp* . . .”). The panel never explains why Ficosa’s reliance was misplaced, i.e., why *Chemcast* is distinguishable.

²³⁶ 299 F.3d at 1331 (emphasis added).

²³⁷ *Id.*

occur even where the undisclosed information is not “strictly within the bounds of the claims” (i.e., so long as the “information bore a strong relationship to the claimed invention”) invites litigants to engage in a philosophical and futile debate about what constitutes “a strong relationship to the claimed invention.” While it is admirable that the court confessed that it has “found violations of the best mode requirement for failure to disclose subject matter not strictly within the bounds of the claims,” the court’s decision will have the effect of merely increasing uncertainty amongst litigants and patent prosecutors regarding how much information is subject to the best mode disclosure requirement.

The real problem is that the two lines of cases are not reconcilable; moreover, the *Teleflex* panel chose simply to insert a long string-citation in place of what should have been a carefully crafted and detailed discussion. The first case cited by the court was *Nobelpharma AB v. Implant Innovations, Inc.*²³⁸ In that case, the court affirmed the lower court’s decision granting Implant’s motion for judgment of invalidity as a matter of law based on the patent’s failure to disclose the best mode of practicing the invention.²³⁹ As with *Dana*, *Nobelpharma* is not a useful case in terms of understanding the role of claim scope in a best mode inquiry.²⁴⁰ First, the Federal Circuit in *Nobelpharma* held that the record “unambiguously indicate[d] that when he filed his patent application, [the inventor] was aware that a variety of undisclosed machining parameters *were critical to the production of a functional implant . . .*”²⁴¹ The information that the inventor failed to disclose was not merely “a preferred method of making the claimed invention,” but was “critical” to making “a functional implant.”²⁴² The patent, therefore, should have been invalidated for an enablement violation, not a best mode violation.²⁴³ As explained above in the discussion of *Dana*, every enablement violation *a fortiori* constitutes a best mode violation (i.e., an enablement violation is the failure to disclose *any* mode, let alone a preferred mode). *Nobelpharma*, as a result, cannot support the *Teleflex* panel’s approach to reconciling the aforementioned divergent lines of cases.²⁴⁴

²³⁸ 141 F.3d 1059 (Fed. Cir. 1998).

²³⁹ *Id.* at 1061.

²⁴⁰ See *supra* nn. 60-65 and accompanying text.

²⁴¹ 141 F.3d at 1065 (emphasis added).

²⁴² *Id.*

²⁴³ See *supra* nn. 60-65 and accompanying text.

²⁴⁴ *Nobelpharma* contains neither a discussion of the scope of the claims at issue, nor a discussion of the role of claim scope in a best mode inquiry. In fact, when reciting the two-pronged test of the best mode inquiry, the court stated that “[d]etermining whether a

The same critique is equally applicable to the remaining cases cited by *Teleflex* in support of its implicit claim that the Federal Circuit's jurisprudence on claim scope and the best mode requirement is consistent. For example, *Spectra Physics* is cited as a case in which the concealed information was "necessary to the enjoyment of the invention."²⁴⁵ That quote, however, which *Teleflex* places in a *Spectra Physics* parenthetical citation, could not be more misleading. The Federal Circuit in *Spectra Physics* never concluded that the undisclosed information was "necessary to the enjoyment of the invention." Rather, that language was used by the lower court—the Federal Circuit was merely quoting the language *in support* of its conclusion. Indeed, in the very next paragraph, the Federal Circuit panel stated that "the inventions as broadly claimed could be practiced without knowledge of [the undisclosed information]"²⁴⁶

V. CONCLUSIONS AND A MODEST PROPOSAL

The foregoing analysis demonstrates that the Federal Circuit's best mode decisions cannot be explained by a consistent set of principles. The state of best mode law has not changed, let alone improved, from its condition in 1993 when one practitioner observed that the various and muddled Federal Circuit best mode tests "allow[] both sides in litigation to argue vigorously."²⁴⁷ The hope of that same commentator—that a later

patent fails to comply with the best mode requirement and is thus invalid involves two *factual* inquiries." 141 F.3d at 1064 (emphasis added). The *Nobelpharma* panel was evidently unconcerned with the *legal* question of whether the scope of the claims at issue limited the amount of disclosure necessary pursuant to the best mode requirement. The undisclosed information, in any case, was clearly within the scope of the claims, as discussed in the text. See *id.* at 1062 ("The implants described and claimed in the patent are preferably made of titanium and have a network of . . . 'micropits' . . . [which] allow a secure connection to form between the implant and growing bone tissue through a process called 'osseointegration.'"); see also *id.* at 1065 (explaining that absent the "undisclosed parameters," a "functional implant"—"i.e., one that would allow for osseointegration"—could not be produced).

²⁴⁵ *Teleflex*, 299 F.3d at 1331 (quoting *Spectra-Physics*, 827 F.2d at 1537).

²⁴⁶ 827 F.2d at 1537 (referring to the "six stage braze cycle"); see also *id.* at 1530 ("The TiCuSil active metal process is preferred because it requires only one step and avoids the need for premetalization.").

²⁴⁷ Arnold, *supra* n. 46, at 78; see also Marchese, *supra* n. 1, at 634 ("[T]he scope of the [best mode] requirement has become confused and clouded, leading to uncertainty and unpredictability for inventors attempting to comply with disclosure requirements."). One recent law review article, on the other hand, suggests that the Federal Circuit has resolved most of the best mode doctrinal controversy with its ruling in *Samsung*. See Michael R. Franzinger, *Best Mode Requirement: Northern Telecom Ltd. v. Samsung*

Federal Circuit “pronouncement” eventually would resolve the apparent conflicts in best mode jurisprudence and reduce the uncertainty of patent drafters forced to cope with an incoherent legal landscape—has remained unfulfilled.²⁴⁸

Indeed, Judge Rader, in a noteworthy concurrence in *Bayer v. Schein Pharmaceuticals, Inc.*,²⁴⁹ appears to substantially agree with the general critique and theme of this article: “Up to the point of acknowledging the claimed invention, this *Bayer* opinion reflects well *the bulk* of this court’s best mode jurisprudence.”²⁵⁰ According to Judge Rader, *Bayer*’s attempt to reconcile Federal Circuit best mode decisions “inexplicably and without support in the statute or case law, . . . widens its best mode net to capture the properties of the claimed invention and further sweeps in any material effect on those properties.”²⁵¹ In contrast to the *Bayer* majority, it seems that Judge Rader would have forthrightly stated that *Chemcast* (and *Dana*) “does not override prior binding case law.”²⁵²

Judge Rader, however, does not give credit where it is due in blaming *Bayer* for creating both a “new” test and “new conflicts with many cases.”²⁵³ As this article demonstrates—and as Judge Rader himself suggests in critiquing *Chemcast* and *Dana*—more than one panel bears responsibility for the state of best mode law.²⁵⁴ The conflicts to which Judge Rader alludes

Electronics Co., 16 Berkeley Tech. L.J. 165 (2001). While it is true that *Samsung* “augments the line of cases applying the best mode requirement only to that which is in the claims” (i.e., the invention to which the patent is directed), *Samsung* fails to clarify the best mode doctrine, despite Franzinger’s generous claim to the contrary. *Id.* at 180. That *Samsung* happens to be consistent with another or several previously rendered opinions hardly justifies the conclusion that *Samsung* “helps to clarify the best mode doctrine.” *Id.* See also *id.* at 181 (conceding that “this case may not ultimately settle the controversy”); but see Hofer and Fitzgerald, *supra* n. 13, at 2348-49 (expressing the opinion that, as of 1995, “with the advent of the Federal Circuit, doctrinal stability in this area has been increased”).

²⁴⁸ Arnold, *supra* n. 46, at 78; cf. Chisum, *supra* n. 1, at 318 (“One is tempted to suggest that the best mode and inequitable conduct concepts should be completely reviewed and revised, but experience over the past few years has shown that substantial reform of any significant feature of U.S. patent law is politically difficult.”).

²⁴⁹ 301 F.3d 1306, 1323-28 (Fed. Cir. 2002).

²⁵⁰ *Id.* at 1324 n. 1 (emphasis added) (criticizing *Chemcast* and admitting that “this court has purported to apply the best mode beyond the scope of the claims . . .”).

²⁵¹ *Id.* at 1324.

²⁵² *Id.* at 1324 n. 1, 1324-25 (criticizing *Dana* as “insidious and destructive as a hidden land mine”).

²⁵³ *Id.* at 1326.

²⁵⁴ *Id.* at 1328 (urging the court to focus on “the totality of this Circuit’s best mode cases, as opposed to a few cases that found a violation . . .”).

have existed for quite some time; *Bayer* merely highlights them. Judge Rader concludes his concurrence with an attempt to minimize the effects of *Bayer*:

Fortunately, both this court's failure to find a best mode in this case and the wealth of prior case law render this *Bayer* case mostly dicta. Otherwise, the next district judge encountering a best mode case would have to ask several imponderable questions: What is the Federal Circuit rule for the reach of the best mode rule? Even under this case, what is the test to identify a best mode – scope of the claimed invention, necessary relationship to performance of the claimed invention, or material effect on the properties of the claimed invention? What is a "property?" What is a "material effect?" How "material" is "material?"²⁵⁵

Judge Rader's characterization of *Bayer* as consisting of "of mostly dicta" does nothing to obviate his legitimate concerns precisely because *Bayer* did *not*—contrary to Judge Rader's insistence—"plant any *new* traps in the best mode minefield."²⁵⁶ Rather, the "traps" and jurisprudential inconsistencies were there already. *Bayer* merely serves as a catalyst in crystallizing the troubled state of best mode law in the Federal Circuit.

Which of the various formulations and interpretations of the best mode requirement ought Federal Circuit panels adopt?²⁵⁷ The answer is straightforward: *DeGeorge*. As the earliest panel decision, it is binding precedent unless overturned by the Federal Circuit *en banc*.²⁵⁸ According to *DeGeorge*, the "best mode of carrying out the invention" means that an inventor need only disclose the preferred embodiment of the invention to which the patent is directed.²⁵⁹ Although this more restrictive reading of the statute seems to be the trend amongst recent decisions, panels continue to disingenuously insist that previous Federal Circuit opinions discussing the best mode requirement are consistent and harmonious.²⁶⁰

Inventors, patent drafters, and litigators alike would be well-served by a candid repudiation of those cases erroneously decided contrary to the principles articulated in *DeGeorge* (and in cases not inconsistent with

²⁵⁵ *Id.*

²⁵⁶ *Id.* (emphasis added).

²⁵⁷ Of course, patent practitioners would derive more benefit from an *en banc* best mode decision.

²⁵⁸ *Newell Cos., Inc. v. Kenney Mfg. Co.*, 864 F.2d 757, 765 (Fed. Cir. 1988).

²⁵⁹ *See supra* n. 33; *see also Bayer*, 301 F.3d at 1325, 1327-28 (Rader, J., concurring) ("Because the best mode requirement is a trap for the unwary, the Federal Circuit has wisely followed the statutory 'scope of the claimed invention' rule to confine the reach of this snare.").

²⁶⁰ *Bayer* is a case in point; indeed, even J. Rader's concurrence is guilty on this count. *See Bayer*, 301 F.3d at 1328 (contrasting the "totality" of best mode cases with "a few cases that found a [best mode] violation . . .").

DeGeorge). Unfortunately, the justification for a narrow reading of the best mode requirement must be based on “economic” or “public policy” grounds.²⁶¹ While the costs and benefits associated with a particular approach cannot be measured with accuracy,²⁶² the *DeGeorge* rule—which inquires whether the alleged best mode falls within the scope of the claims—nonetheless aptly enforces the “bargain” reached between the public and the patentee by requiring disclosure of only that know-how from which the public is excluded during the life of the patent.²⁶³

²⁶¹ See Marchese, *supra* n. 1, at 634-36 (extolling the virtues of a “bright-line rule” which narrowly construes the best mode requirement and “compels inventors to expose their preferred embodiments for only [specifically] claimed matter . . .”); see also *Bayer*, 301 F.3d at 1325-26, 1328 (Rader, J., concurring). Moreover, “[t]he legislative history of the 1952 provision dealing with the best mode requirement is sparse, and there is no evidence that it was intended to increase the quality and quantity of the disclosure necessary for obtaining a patent.” Albert L. Jacobs, Jr., *The Best Mode Requirement: What the Law Is and What It Should Be*, 16 Hous. J. Intl. L. 533, 563 (1994) (citing Chisum, *supra* n. 3, at vol. 2, § 7.05 n. 1b). The text itself is equally unhelpful. With regard to enablement, the statute twice uses the phrase “make and use.” However, when discussing the best mode requirement, the statute uses a different phrase: “carrying out.” Therefore, one could argue that “carrying out” must not mean “make” or “use.” On the other hand, the dictionary definition and the common meaning of the phrase “carrying out” militate in favor of the broader reading. See e.g. *The Random House College Dictionary* 207 (Rev. ed., Random House 1979) (defining “carry out” as “to put into operation”); see also *Bayer*, 301 F.3d at 1315 (recognizing that the Federal Circuit, on at least one occasion, has defined “carrying out” as “making and using”). J. Rader writes that “the most important words in [the best mode requirement] are ‘his invention.’” *Id.* at 1323-24 (“These words invoke the claims.”). That is demonstrably not true; it seems to this author that in a textualist approach, the most important words are “carrying out.” That is, the phrase “the invention” is used in the enablement and written description requirements as well. Of course, the “invention” is always defined by the claims—it has the same meaning in all three disclosure requirements. Acknowledging that the phrase “his invention” invokes the claims does not move the interpretive ball forward. Even when the contours of the claim are precise and straightforward, the question still remains what does “carrying out” mean? If “carrying out” means “using,” the best mode requirement would mandate, for example, that an inventor disclose his preferred, but *unclaimed*, method of “using” a *claimed* “device”—an outcome with which J. Rader no doubt would take issue.

²⁶² See Jerry R. Selinger, *In Defense of “Best Mode”: Preserving the Benefit of the Bargain for the Public*, 43 Cath. U. L. Rev. 1071, 1105 (1994).

²⁶³ “In most instances, the best mode requirement is self-enforcing. If an inventor does not disclose a critical trade secret within the best mode requirement, that nondisclosure puts the value of the entire patented invention at risk. . . . Competitors in the same technology can, and invariably will, discover the undisclosed trade secret and claim it in a separate patent application. When that application ripens into a patent, the competitor will have a blocking patent that could compromise much of the value of the original patent.

Therefore, an informed patent will never withhold a genuine best mode.” *Bayer*, 301 F.3d at 1325 (Rader, J., concurring).