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TECHNOLOGY-ASSISTED REVIEW: THE JUDICIAL PIONEERS

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I. INTRODUCTION

It has been a little over two years since the first, ground-breaking court opinion addressing technology-assisted review was issued by United States Magistrate Judge Andrew J. Peck of the Southern District of New York.¹ Indeed, Judge Peck referred to this game-changing technological development in e-discovery by the more accurate phrase “computer-assisted review.” Other synonymous phrases used during the past two years include “machine assisted review” and “artificial intelligence assisted review.” More recently, the term “predictive coding” has eclipsed all of the other phrases in the case law, but as explained below, predictive coding appears to be viewed as a form of technology-assisted review, rather than as a synonym.

Two of the most recognized experts in the field, Attorney Maura R. Grossman and Professor Gordon V. Cormack, published the seminal law review article on this subject in 2011, calling it “Technology-Assisted Review.”² Moreover, Ms. Grossman and Professor Cormack have followed their seminal work with the recently published *Grossman-Cormack Glossary of Technology-Assisted Review* (“the TAR Glossary”).³ Given that we view the TAR Glossary as the most authoritative definitional source on the subject, we adopt the phrase “Technology-Assisted Review” (abbreviated as “TAR”) throughout this paper, with the caveat that we also heed Shakespeare’s advice regarding the utility of names.⁴

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1 *Da Silva Moore v. Publicis Groupe*, 287 F.R.D. 182 (S.D.N.Y. 2012).

2 Maura R. Grossman and Gordon V. Cormack, *Technology-Assisted Review in E-Discovery Can Be More Effective and More Efficient Than Exhaustive Manual Review*, 12 RICH J.L. TECH. 1 (2011) (see also Foreword by John M. Facciola, U.S. Magistrate Judge). This article has been cited in at least eight reported judicial decisions to date.

3 Maura R. Grossman and Gordon V. Cormack, *The Grossman-Cormack Glossary of Technology-Assisted Review*, 7 FED. COURTS L. REV. 1 (2013) (hereinafter cited as “TAR Glossary”).

4 See William Shakespeare, *Romeo and Juliet*, Act II, Scene 2 (“What’s in a name? that which we call a rose By any other name would smell as sweet.”).

Since February, 2012, when Judge Peck boldly went where no judge had gone before in writing an opinion addressing TAR, we found several pioneering judges who have followed him into the final frontier. Indeed, we now have what could be considered to be a critical mass of published opinions that can collectively provide some badly needed TAR guidance to the bench and bar. Whether counsel is meeting and conferring regarding the potential use of TAR, or a court is considering the efficacy of a proposed TAR protocol, these pioneering judicial opinions are a must read.

To ease the load on lawyer and judge alike, we have endeavored to create this compilation and summary of some of the currently available published opinions addressing TAR. We salute the pioneering authors of these decisions, and while they may not all agree in approach or outcome, each and every one of them have contributed to moving the law of TAR forward in a reasoned and just way.

We begin with the definition of TAR and its younger sibling, predictive coding, as well as Judge Peck's seminal opinion in *Da Silva Moore*. We will then follow with the writings of Judge Peck's fellow judicial pioneers.

II. TECHNOLOGY-ASSISTED REVIEW DEFINED

The TAR Glossary defines TAR as follows:

Technology-Assisted Review (TAR): A process for Prioritizing or Coding a Collection of Documents using a computerized system that harnesses human judgments of one or more Subject Matter Expert(s) on a smaller set of Documents and then extrapolates those judgments to the remaining Document Collection. Some TAR methods use Machine Learning Algorithms to distinguish Relevant from Non-Relevant Documents, based on Training Examples Coded as Relevant or Non-Relevant by the Subject Matter Experts(s), while other TAR methods derive systematic Rules that emulate the expert(s)' decision-making process. TAR processes generally incorporate Statistical Models and/or Sampling techniques to guide the process and to measure overall system effectiveness.⁵

While some experts and E-Discovery vendors may place certain emphasis on portions of the above definition or may add other aspects, the Grossman-Cormack definition captures the essence of the current thinking on what Technology-Assisted Review comprises. Indeed, the most significant aspect of the TAR Glossary's definition is that it encompasses multiple TAR methods and processes.

Grossman and Cormack explain predictive coding as follows:

“Predictive Coding: An industry-specific term generally used to describe a Technology-Assisted Review process involving the use of a Machine Learning Algorithm to distinguish Relevant from Non-Relevant Documents, based on Subject Matter Expert(s)' Coding of a Training Set of Documents. See Supervised Learning and Active Learning.”⁶

⁵ *TAR Glossary*, 7 FED. COURTS L. REV. at 32.

Thus, the TAR Glossary establishes that predictive coding is not precisely synonymous with TAR, but rather describes an industry-specific term generally used to describe a particular TAR process. Indeed, predictive coding is a species of the genus TAR. Moreover, depending upon the particular e-discovery vendor's flavor of predictive coding, the term could be used to identify a particular process that differs from other processes applying the same term. In other words, there may be multiple sub-species of predictive coding.

III. JUDGE PECK'S EXPEDITION INTO THE FINAL FRONTIER: *DA SILVA MOORE V. PUBLICIS GROUPE*

The first published judicial decision addressing TAR was written by Judge Peck in the case of *Da Silva Moore v. Publicis Groupe*.⁷ *Da Silva Moore* was a sex discrimination case in which the defendant, "one of the world's 'big four' advertising conglomerates," sought to utilize TAR to reduce the massive amount of electronically stored information ("ESI") in its possession that would otherwise require human review. Judge Peck, quoting his seminal article *Search, Forward: Will manual document review and keyword searches be replaced by computer-assisted coding?*,⁸ and opting to use the term "computer-assisted review" in lieu of TAR, wrote as follows:

"My *Search, Forward* article explained my understanding computer-assisted review, as follows":

By computer-assisted coding, I mean tools (different vendors use different names) that use sophisticated algorithms to enable the computer to determine relevance, based on interaction with (i.e., training by) a human reviewer.

Unlike manual review, where the review is done by the most junior staff, computer-assisted coding involves a senior partner (or [small] team) who review and code a "seed set" of documents. The computer identifies properties of those documents that it uses to code other documents. As the senior reviewer continues to code more sample documents, the computer predicts the reviewer's coding. (Or, the computer codes some documents and asks the senior reviewer for feedback.)

When the system's predictions and the reviewer's coding sufficiently coincide, the system has learned enough to make confident predictions for the remaining documents. Typically, the senior lawyer (or team) needs to review only a few thousand documents to train the computer.

Some systems produce a simple yes/no as to relevance, while others give a relevance score (say, on a 0 to 100 basis) that counsel can use to prioritize review. For example, a score above 50 may produce 97% of the relevant documents, but constitutes only 20% of the entire document set.

⁶ *TAR Glossary*, 7 FED. COURTS L. REV. at 26.

⁷ *Da Silva Moore v. Publicis Groupe*, 287 F.R.D. 182 (S.D.N.Y. 2012).

⁸ Andrew J. Peck, *Search, Forward: Will manual document review and keyword searches be replaced by computer-assisted coding?*, L. TECH. NEWS (Oct. 2011), p. 25 and 29.

Counsel may decide, after sampling and quality control tests, that documents with a score of below 15 are so highly likely to be irrelevant that no further human review is necessary. Counsel can also decide the cost-benefit of manual review of the documents with scores of 15-50.

“My article further explained my belief that Daubert would not apply to the results of using predictive coding, but that in any challenge to its use, this Judge would be interested in both the process used and the results”:

[I]f the use of predictive coding is challenged in a case before me, I will want to know what was done and why that produced defensible results. I may be less interested in the science behind the “black box” of the vendor’s software than in whether it produced responsive documents with reasonably high recall and high precision.

That may mean allowing the requesting party to see the documents that were used to train the computer-assisted coding system. (Counsel would not be required to explain why they coded documents as responsive or non-responsive, just what the coding was.) Proof of a valid “process,” including quality control testing, also will be important.

. . . .

Of course, the best approach to the use of computer-assisted coding is to follow the Sedona Cooperation Proclamation model. Advise opposing counsel that you plan to use computer-assisted coding and seek agreement; if you cannot, consider whether to abandon predictive coding for that case or go to the court for advance approval.⁹

In *Da Silva Moore*, plaintiffs’ counsel did not reject defendant’s proposal to use predictive coding “to cull down the approximately three million electronic documents from the agreed-upon custodians . . .,” but rather had “multiple concerns” and wanted “clarification” regarding the process.¹⁰ Initially, Judge Peck offered the parties the following advice:

Key words, certainly unless they are well done and tested, are not overly useful. Key words along with predictive coding and other methodology, can be very instructive. I’m also saying to the defendants . . . if you do predictive coding, you are going to have to give your seed set, including the seed documents marked as non-responsive to the plaintiff’s counsel so they can say, well, of course you are not getting any [relevant] documents, you’re not appropriately training the computer.¹¹

The first dispute concerned defendant MSL’s preliminary proposal to review only the top 40,000 most relevant documents identified by the predictive coding software, at a projected cost of \$5.00 per document for a total cost of \$200,000.00. The court rejected this

⁹ *Da Silva Moore v. Publicis Groupe*, 287 F.R.D. 182, 183-84 (S.D.N.Y. 2012).

¹⁰ *Da Silva Moore*, 287 F.R.D. at 184.

¹¹ *Da Silva Moore*, 287 F.R.D. at 185 (hearing transcript citations omitted).

proposal, pointing out that “‘where [the] line will be drawn [as to review and production] is going to depend on what the statistics show for the results,’ since ‘[p]roportionality requires consideration of results as well as costs. And if stopping at 40,000 is going to leave a tremendous number of likely highly responsive documents unproduced, [MSL’s] proposed cutoff doesn’t work.’”¹² Thus, it appears that the court would not countenance a manual review proposal that was based solely on an arbitrary number of documents and cost cutoff.

The second dispute concerned the identification of custodians’ emails to be searched. The court employed a phased custodian approach, adopting defendant’s proposal to search thirty custodians in the first phase, comprising defendant’s president, other members of the executive team, and certain managing directors. Plaintiffs wanted additional custodians whom plaintiffs claimed would be more likely to have information bearing on discriminatory practices as to preferential job duties and assignments. Exhibiting exceptional case management skills, the court ventured deep in the weeds to understand the quality of the ESI at issue and observed that these additional custodians’ “emails would be so different from that of the other custodians,” that they should not be included in the emails subjected to predictive coding review.¹³ Indeed, the court concluded that the information sought would be more efficiently extracted through deposition testimony.¹⁴ The court also approved a two-phased approach for ESI sources, leaving what appeared to be less important or uncertain sources of ESI for the second phase. The court found the authority for multi-phasing in the proportionality rule set forth in Fed. R. Civ. P. 26(b)(2)(C).¹⁵

The court also gave attention to an issue often overlooked by American courts – foreign privacy laws blocking search and retrieval of emails. Citing to *The Sedona Conference International Principles on Discovery, Disclosure and Data Protection* (2011), the Court concluded that, because the defendant’s France-based CEO’s emails would likely be covered by French privacy and blocking laws, the CEO should not be included as a first phase custodian.¹⁶

Probably the most instructive portion of the *Da Silva Moore* decision concerns the discussion of the predictive coding protocol proposed by defendant MSL and approved by the court in a February 8, 2012 hearing:

The parties agreed to use a 95% confidence level (plus or minus two percent) to create a random sample of the entire email collection; that sample of 2,399 documents will be reviewed to determine relevant (and not relevant) documents for a “seed set” to use to train the predictive coding software. ...

To further create the seed set to train the predictive coding software, MSL coded certain documents through ‘judgmental sampling.’ The remainder of the seed set was created by MSL reviewing ‘keyword’ searches with Boolean connectors (such as ‘training and Da Silva Moore,’ or ‘promotion and Da Silva Moore’) and coding the top fifty hits from those searches. MSL agreed to provide all those documents (except

12 *Id.*

13 *Id.*

14 *Id.*

15 *Id.*

16 *Da Silva Moore*, 287 F.R.D. at 186.

privileged ones) to plaintiffs for plaintiffs to review MSL's relevance coding. In addition, plaintiffs provided MSL with certain other keywords, and MSL used the same process with plaintiffs' keywords as with the MSL keywords, reviewing and coding an additional 4,000 documents. All of this review to create the seed set was done by senior attorneys (not paralegals, staff attorneys or junior associates). MSL reconfirmed that "[a]ll of the documents that are reviewed as a function of the seed set, whether [they] are ultimately coded relevant or irrelevant, aside from privilege, will be turned over to' plaintiffs. The next area of discussion was the iterative rounds to stabilize the training of the software. MSL's vendor's predictive coding software ranks documents on a score of 100 to zero, i.e., from most likely relevant to least likely relevant. MSL proposed using seven iterative rounds; in each round they would review at least 500 documents from different concept clusters to see if the computer is returning new relevant documents. After the seventh round, to determine if the computer is well trained and stable, MSL would review a random sample (of 2,399 documents) from the discards (i.e., documents coded as non-relevant) to make sure the documents determined by the software to not be relevant do not, in fact, contain highly-relevant documents. For each of the seven rounds and the final quality-check random sample, MSL agreed that it would show plaintiffs all the documents it looked at including those deemed not relevant (except for privileged documents).

Plaintiffs' vendor noted that "we don't at this point agree that this is going to work. This is new technology and it has to be proven out." Plaintiffs' vendor agreed, in general, that computer-assisted review works, and works better than most alternatives. Indeed, plaintiffs' vendor noted that "it is fair to say [that] we are big proponents of it." The Court reminded the parties that computer-assisted review 'works better than most of the alternatives, if not all of the [present] alternatives. So the idea is not to make this perfect, it's not going to be perfect. The idea is to make it significantly better than the alternatives without nearly as much cost.'

The Court accepted MSL's proposal for the seven iterative reviews, but with the following caveat:

But if you get to the seventh round and [plaintiffs] are saying that the computer is still doing weird things, it's not stabilized, etc., we need to do another round or two, either you will agree to that or you will both come in with the appropriate QC information and everything else and [may be ordered to] do another round or two or five or 500 or whatever it takes to stabilize the system.¹⁷

Notwithstanding plaintiffs having purportedly agreed to the ESI protocol discussed in the February 8th hearing, they filed objections two weeks later alleging that the protocol was essentially forced upon them by the court. Plaintiffs' first objection was based on the argument that producing counsel needed to certify the production as "complete and correct" under FRCP 26(g)(1)(A). The court explained that plaintiffs' were wrong

¹⁷ *Id.* at 186-87 (Hearing transcript citations omitted).

because that certification only applied to initial disclosures under FRCP 26(a)(1). The court noted that the provision applicable to discovery responses, FRCP 26(g)(1)(B), incorporates the proportionality principle of FRCP 26(b)(2)(C).

Plaintiffs' second objection was that the court's acceptance of defendants' proposed ESI Protocol was contrary to Federal Rule of Evidence 702. Judge Peck observed that FRE 702 and *Daubert*¹⁸ are rules for admissibility of evidence at trial and "simply are not applicable to how documents are searched for and found in discovery."¹⁹ The Court further explained that "The admissibility of specific emails at trial will depend upon each email itself (for example whether it is hearsay, or a business record or party admission), not how it was found during discovery."²⁰

The most reasonable basis for objection offered by plaintiffs in *Da Silva Moore* is the same one that perhaps all but a privileged few in the legal profession would currently have: we just don't understand what this 'black box' called predictive coding is and "there is no way to be certain if MSL's method is reliable." In an effort to mitigate this concern, the court encouraged complete transparency in defendant's process – with defendant disclosing how it coded every e-mail used in the seed set (both relevant and irrelevant).²¹ The court ultimately ruled that plaintiffs' concerns were premature, but left the door open for plaintiffs to raise concerns again during or after the predictive coding process, "(which the Court will be closely supervising)."²²

IV. JUDGE PECK'S "FURTHER ANALYSIS AND LESSONS FOR THE FUTURE"

Much like Captain James T. Kirk would record his thoughts into the Captain's Log as he travelled through space at warp speed, Judge Peck gave us the benefit of his thoughts as he launched into the new frontier of TAR. Here is a summary of some of his most compelling observations:

1. TAR "is not a magic, Staples-Easy-Button, solution appropriate for all cases. The technology exists and should be used where appropriate, but it is not a case of machine replacing humans; it is the process used and the interaction of man and machine that the courts needs to examine."²³
2. Judge Peck teaches us that "recall," a measure of completeness, is the fraction of relevant documents identified during a review, while "precision," a measure of accuracy, is the fraction of identified documents that are relevant. "The goal is for the review method to result in higher recall and higher precision than another review method, at a cost proportionate to the "value" of the case."²⁴

18 *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993).

19 *Da Silva Moore*, 287 F.R.D. at 188-89.

20 *Id.* at 189.

21 *Id.*

22 *Id.*

23 *Id.*

24 *Id.* at 189-90, citing Maura R. Grossman & Gordon V. Cormack, *Technology-Assisted Review in E-Discovery Can Be More Effective and More Efficient Than Exhaustive Manual Review*, 12 RICH. J.L. & TECH., Spring 2011, at 8-9.

3. While some lawyers still think that linear (i.e., manual) review is the gold standard, “statistics clearly show that computerized searches are at least as accurate, if not more so, than manual review.”²⁵ Moreover, Grossman-Cormack’s seminal article noted that “technology-assisted reviews require, on average, human review of only 1.9% of the documents, a fifty-fold savings over manual review,” thus establishing significant cost savings with TAR over manual review.²⁶
4. While keyword searches have earned a place in the world of ESI production, there are too many cases in which “the way lawyers choose keywords is the equivalent of the child’s game of ‘Go Fish.’” Another problem with keyword searching “is that they often find large quantities of irrelevant ESI. The court gave examples of keywords and the number of “hits” in which they resulted (e.g., “Da Silva Moore”: 201,179 hits, “training”: 165,208 hits). Manual review of so many hits would be quite costly and many would be irrelevant. Moreover, data shows that “keyword searches are not very effective.”²⁷
5. In light of the foregoing, Judge Peck concluded: “Computer-assisted review appears to be better than the available alternatives, and thus should be used in appropriate cases. **While this Court recognizes that computer-assisted review is not perfect, the Federal Rules of Civil Procedure do not require perfection.**”²⁸
6. Moreover, Judge Peck emphasized the importance of cooperation and transparency in connection with ESI protocols, pointing out that the Peck Court “strongly endorses *The Sedona Conference Cooperation Proclamation.*” A critical lesson for counsel proposing the use of TAR is found in Judge Peck’s observation that “MSL’s transparency in its proposed ESI search protocol made it easier for the Court to approve the use of predictive coding.” Judge Peck realized that not all experienced ESI counsel would be willing to be as transparent as MSL, “such transparency allows the opposing counsel (and the Court) to be more comfortable with computer-assisted review, reducing fears about the so-called ‘black box’ of the technology. ***This Court highly recommends that counsel in future cases be willing to at least discuss, if not agree to, such transparency in the computer-assisted review process.***”²⁹

During the course of Judge Peck’s earnest study of TAR, he has come up with the following guidelines for courts in addressing TAR proposals:

25 *Da Silva Moore*, 287 F.R.D. at 190, citing Herbert L. Roitblatt, Anne Kershaw & Patrick Oot, *Document Categorization in Legal Electronic Discovery: Computer Classification vs. Manual Review*, 61 J. AM. SOC’Y FOR INFO. SCI. & TECH. 70, 79 (2010).

26 *Da Silva Moore*, 287 F.R.D. at 190, citing Maura R. Grossman & Gordon V. Cormack, *Technology-Assisted Review in E-Discovery Can Be More Effective and More Efficient Than Exhaustive Manual Review*, 12 RICH. J.L. & TECH., Spring 2011, at 43. [Emphasis supplied].

27 *Da Silva Moore*, 287 F.R.D. at 190-91, citing David L. Blair & M. E. Maron, *An Evaluation of Retrieval Effectiveness for a Full-Text Document-Retrieval System*, 28 COMM. ACM 289 (1985) (Searchers believed they met the goals, but their average recall was just 20%). Judge Peck noted that “This result has been replicated in the TREC Legal Track studies over the past few years.”

28 *Da Silva Moore*, 287 F.R.D. at 191 (emphasis added).

29 *Da Silva Moore*, 287 F.R.D. at 192 (emphasis added).

1. It is unlikely that a court will be able to approve an advance proposed stopping point for the TAR process or based on an arbitrary number of documents and/or their relevance ratings. The stopping point can only be determined after training the TAR software and verifying the quality of the results.³⁰
2. Staging discovery, i.e., multiple phases of ESI sources and key custodians, is an effective way to control discovery costs. However, the court must be willing in appropriate cases to grant discovery extensions when necessary.³¹
3. “If you are knowledgeable about and tell the other side who your key custodians are and how you propose to search for the requested documents, opposing counsel and the Court are more apt to agree to your approach (at least as phase one without prejudice).”³²
4. It is very helpful for counsel to have their e-discovery vendors present at court hearings where ESI Protocol is to be discussed. In Judge Peck’s words, “bring your geek to court.” “It also is important for the vendors and/or knowledgeable counsel to be able to explain complicated ediscovery concepts in ways that make it easily understandable to judges who may not be tech-savvy.”³³

Finally, Judge Peck’s conclusion summarizes the importance of his *Da Silva Moore* opinion as follows:

What the Bar should take away from this Opinion is that computer-assisted review is an available tool and should be seriously considered for use in large-data-volume cases where it may save the producing party (or both parties) significant amounts of legal fees in document review. Counsel no longer have to worry about being the “first” or “guinea pig” for judicial acceptance of computer-assisted review. As with keywords or any other technological solution to ediscovery, counsel must design an appropriate process, including use of available technology, with appropriate quality control testing, to review and produce relevant ESI while adhering to Rule 1 and Rule 26(b)(2)(C) proportionality. Computer-assisted review now can be considered judicially-approved for use in appropriate cases.³⁴

V. THE JUDICIAL PIONEERS: POST-*DA SILVA MOORE* TECHNOLOGY-ASSISTED REVIEW OPINIONS

A. *Global Aerospace Inc. v. Landow Aviation, L.P.* – Judge Chamblin

In *Global Aerospace Inc. v. Landow Aviation, L.P.*,³⁵ the court allowed defendants to use predictive coding over plaintiffs’ objections, stating:

³⁰ *Id.*

³¹ *Id.*

³² *Id.* at 193.

³³ *Id.* at 193.

³⁴ *Id.*

³⁵ 2012 WL 1431215, No. CL 61040 (Va. Cir. Ct., Apr. 23, 2012).

Having heard argument with regard to the Motion [Defendants], pursuant to Virginia Rules of Supreme Court 4:1(b) and (c) and 4:15, it is hereby ordered Defendants shall be allowed to proceed with the use of predictive coding for purposes of the processing and production of electronically stored information, with processing to be completed with 60 days and production to follow as soon as practicable and in no more than 60 days. This is without prejudice to a receiving party raising with the court an issue as to completeness or the contents of the production or the ongoing use of predictive coding.³⁶

In their brief, defendants argued that they had:

[A]n estimated 250 gigabytes (GB) of reviewable ESI from its computer systems, which could easily equate to more than two million documents. At average cost and rates of review and effectiveness, linear first-pass review would take 20,000 man hours, cost two million dollars, and locate only sixty percent of the potentially relevant documents. As one alternative, keyword searching might be more cost-effective but likely would retrieve only twenty percent of the potentially relevant documents and would require Landow to incur substantial unnecessary costs for document review. Predictive coding, on the other hand, is capable of locating upwards of seventy-five percent of the potentially relevant documents and can be effectively implemented at a fraction of the cost and in a fraction of the time of linear review and keyword searching. Further, by including a statistically sound validation protocol, Landow's counsel will thoroughly discharge the "reasonable inquiry" obligations of Rule 4:1(g).³⁷

Plaintiffs claimed in opposition that "[C]omputerized tools are supplements to the ordinary review process. No computer program is an adequate substitute for having human beings review and sort the documents."³⁸ Plaintiffs further stated that "Defendants should produce all responsive emails and other electronic documents, not just the 75%, or less, that the "predictive coding" computer program might select."³⁹ Despite plaintiffs' concerns, the court granted the protective order sought by defendants and allowed the use of predictive coding.⁴⁰

B. *National Day Laborer Organizing Network v. U.S. Immigration and Customs Enforcement Agency, et al.* – Judge Scheindlin

Judge Scheindlin, who was the original judicial pioneer of e-discovery, addressed TAR in *National Day Laborer Organizing Network v. U.S. Immigration and Customs Enforcement Agency, et al.*,⁴¹ which concerned a Freedom of Information Act request from a number of federal agencies regarding the Secure Communities program. The case examined the adequacy of the searches performed by the various agencies, and suggested that the FBI

³⁶ *Global Aerospace Inc.* 2012 WL 1431215 at *1.

³⁷ *Defendants' Memorandum in Support of Motion for Protective Order Approving the Use of Predictive Coding*, 2012 WL 1419842, No. CL 61040, *1 (Va. Cir. Ct., Apr. 9, 2012).

³⁸ *Plaintiffs' Opposition to the Landow Defendants' Motion for Protective Order Regarding Electronic Documents and "Predictive Coding"*, 2012 WL 1419848, No. CL 61040, *1 (Va. Cir. Ct., Apr. 16, 2012).

³⁹ *Id.*

⁴⁰ *Global Aerospace Inc.* 2012 WL 1431215.

⁴¹ 877 F. Supp. 2d 87 (S.D.N.Y. 2012).

might have employed “sophisticated search techniques to ensure that the manual review was actually capturing the universe of responsive documents” as “[s]uch tests would have given the Court significantly more confidence regarding the adequacy of these manual reviews.”⁴² The court further suggested that keyword searching is not effective and that:

[B]eyond the use of keyword search, parties can (and frequently should) rely on latent semantic indexing, statistical probability models, and machine learning tools to find responsive documents. Through iterative learning, these methods (known as “computer assisted” or “predictive” coding) allow humans to teach computers what documents are and are not responsive to a particular FOIA or discovery request and they can significantly increase the effectiveness and efficiency of searches.⁴³

Although the court did not require the federal agencies to use such techniques in amending responses to the FOIA requests, the court stated that “If [the parties] wish to and are able to, then they may agree on predictive coding techniques and other more innovated ways to search.”⁴⁴

C. *EORHB, Inc. v. HOA Holdings LLC – Vice Chancellor Laster*

In *EORHB, Inc. v. HOA Holdings LLC*,⁴⁵ the court, *sua sponte*, ordered:

The parties shall confer regarding a case schedule. Absent a modification of this order for good cause shown, the parties shall (i) retain a single discovery vendor to be used by both sides, and (ii) conduct document review with the assistance of predictive coding. If the parties cannot agree on a single discovery vendor with expertise in predictive coding, the parties shall each submit up to two vendor candidates to the Court.⁴⁶

In a later order, the court entered a stipulated order allowing plaintiffs to “conduct document review using traditional methods” because, “based on the low volume of relevant documents expected to be produced in discovery by [Plaintiffs], the cost of using predictive coding assistance would likely be outweighed by any practical benefit of its use.”⁴⁷

D. *Gabriel Technologies Corp. v. Qualcomm Inc. – Judge Battaglia*

In *Gabriel Technologies Corp. v. Qualcomm Inc.*,⁴⁸ the court awarded fees and costs to defendants after a summary judgment, finding that the case was “exceptional” under 35 U.S.C. § 285.⁴⁹ The court included the amount defendants expended on TAR:

The third aspect of Defendants’ requested fees is \$2,829,349.10 attributable to computer assisted, algorithm-driven document review. Defendants provide the following explanation for the resulting fees: “Over the course of this litigation, Defendants collected almost

⁴² *Id.* at 103.

⁴³ *Id.* at 109.

⁴⁴ *Id.* at 111.

⁴⁵ 2012 WL 4896670, No. 7409-VCL (Del. Ch., Oct. 15, 2012).

⁴⁶ *Id.* at *1.

⁴⁷ 2013 WL 1960621, No. 7409-VCL (Del. Ch., May 6, 2013).

⁴⁸ 2013 WL 410103, No. 08cv1992 AJB (MDD) (S.D.Cal., Feb 1, 2013).

⁴⁹ *Gabriel Technologies Corp. v. Qualcomm Inc.*, 2013 WL 410103, No. 08cv1992 AJB (MDD), *3-5 (S.D.Cal., Feb 1, 2013).

12,000,000 records – mostly in the form of Electronically Stored Information (ESI)... Rather than manually reviewing the huge volume of resultant records, Defendants paid H5 to employ its proprietary technology to sort these records into responsive and non-responsive documents.” After the algorithm determined whether documents were responsive or unresponsive to discovery requests, Black Letter attorneys reviewed the responsive documents for confidentiality, privilege, and relevance issues. For this reason, the review performed by H5 and Black Letter accomplished different objectives with the H5 electronic process minimizing the overall work for Black Letter. Again, the Court finds Cooley’s decision to undertake a more efficient and less time-consuming method of document review to be reasonable under the circumstances. In this case, the nature of Plaintiffs’ claims resulted in significant discovery and document production, and Cooley seemingly reduced the overall fees and attorney hours required by performing electronic document review at the outset. Thus, the Court finds the requested amount of \$2,829,349.10 to be reasonable.⁵⁰

E. *Chevron v. Donziger* – Judge Kaplan

In *Chevron v. Donziger*,⁵¹ the court required nonparty (and defendants’ counsel in related action in Ecuador) Patton Boggs LLP to respond to a subpoena duces tecum.⁵² In considering (and denying) Patton Boggs’ claim of undue burden and request for cost shifting, the court ruled:

At the September 2012 hearing, the Court urged the parties to analyze, in their subsequent submissions with respect to burden, whether and to what extent predictive coding could “reduce the burden and effort” required to comply with the Subpoena. Apart from one footnote, PB’s submission ignored the subject entirely. The logical inference is that PB failed to address the subject because it would not have aided its argument.⁵³

The court also noted that “Predictive coding is an automated method that credible sources say has been demonstrated to result in more accurate searches at a fraction of the cost of human reviewers.”⁵⁴

F. *In Re Biomet M2a Magnum Hip Implant Prod. Liab. Litig.* – Judge Miller

In MDL litigation titled *In re Biomet M2a Magnum Hip Implant Products Liability Litigation*, the court issued two orders concerning the use of predictive coding.⁵⁵ In the first order, the court considered the plaintiffs’ motion regarding the sufficiency of defendant’s document review process.⁵⁶ Defendant used key-word searching to cull responsive documents from 19.5 million documents down to 3.5 million.⁵⁷ Defendant removed duplicate documents, and then used predictive coding to identify relevant

⁵⁰ *Id.* at *10.

⁵¹ 2013 WL 1087236, No. 11 Civ. 0691(LAK) (S.D.N.Y. March 15, 2013).

⁵² *Id.* at *3.

⁵³ *Id.* at *32.

⁵⁴ *Id.* at *255.

⁵⁵ *In re Biomet*, 2013 WL 1729682, No. 3:12–MD–2391 (N.D. Ind. Apr. 18, 2013); 2013 WL 6405156, No. 3:12–MD–2391 (N.D. Ind. Aug. 21, 2013).

⁵⁶ *In re Biomet*, 2013 WL 1729682.

⁵⁷ *Id.* at *1.

documents.⁵⁸ Plaintiffs asserted that defendant should have to start its review over because the use of key-word searching “has tainted the process.”⁵⁹ The court ruled:

The issue before me today isn't whether predictive coding is a better way of doing things than keyword searching prior to predictive coding. I must decide whether Biomet's procedure satisfies its discovery obligations and, if so, whether it must also do what the Steering Committee seeks. What Biomet has done complies fully with the requirements of Federal Rules of Civil Procedure 26(b) and 34(b)(2). I don't see anything inconsistent with the Seventh Circuit Principles Relating to the Discovery of Electronically Stored Information. Principle 1.02 requires cooperation, but I don't read it as requiring counsel from both sides to sit in adjoining seats while rummaging through millions of files that haven't been reviewed for confidentiality or privilege.⁶⁰

In denying plaintiffs' motion, the Court determined as follows:

It might well be that predictive coding, instead of a keyword search, at Stage Two of the process would unearth additional relevant documents. But it would cost Biomet a million, or millions, of dollars to test the Steering Committee's theory that predictive coding would produce a significantly greater number of relevant documents. Even in light of the needs of the hundreds of plaintiffs in this case, the very large amount in controversy, the parties' resources, the importance of the issues at stake, and the importance of this discovery in resolving the issues, I can't find that the likely benefits of the discovery proposed by the Steering Committee equals or outweighs its additional burden on, and additional expense to, Biomet.⁶¹

Four months later, the *Biomet* court again addressed an ESI dispute between the parties.⁶² The Plaintiffs Steering Committee brought a motion to compel Defendant “to produce the discoverable documents used in the training of the ‘predictive coding’ algorithm. Biomet reveals only that the discoverable documents used in the seed set already have been disclosed to the Steering Committee; Biomet won't identify the seed set beyond that.”⁶³ The court explained that, “As I understand it, a predictive coding algorithm offers up a document, and the user tells the algorithm to find more like that document or that the user doesn't want more documents like what was offered up.”⁶⁴ The court first determined that plaintiffs could not be asking for the entire seed set, as that could include privileged or irrelevant documents.⁶⁵ However, even focusing the request to deal only with discoverable documents, all of which had been produced but not identified as part of the seed set, the court could not find authority to order defendant to comply, stating, “I'm puzzled as to the authority behind the Steering Committee's request.”⁶⁶ The plaintiffs cited to *The Sedona Conference Cooperation Proclamation*⁶⁷ in support of their position. The court considered the *Cooperation Proclamation* and the Seventh Circuit project cited by Plaintiffs, but ultimately held as follows:

58 *Id.*

59 *Id.*

60 *Id.* at *2.

61 *Id.* at *3.

62 *In re Biomet*, 2013 WL 6405156, No. 3:12-MD-2391 (N.D. Ind. Aug. 21, 2013).

63 *Id.* at *1.

64 *Id.*

65 *Id.*

66 *Id.*

67 10 Sedona Conf. J. 331 (2009 Supp.).

[N]either the Sedona Conference nor the Seventh Circuit project expands a federal district court's powers, so they can't provide me with authority to compel discovery of information not made discoverable by the Federal Rules. Still, Biomet's position is troubling. Biomet suggests no way in which telling the Steering Committee which of the documents already produced were in the seed set would harm it. Based on what I have been given in the parties' memoranda, Biomet is right that it doesn't have to identify the seed set, but the Steering Committee is right that Biomet's cooperation falls below what the Sedona Conference endorses. An unexplained lack of cooperation in discovery can lead a court to question why the uncooperative party is hiding something, and such questions can affect the exercise of discretion. But I don't have any discretion in this dispute. I won't order Biomet to reveal which of the documents it has disclosed were used in the seed set, but I urge Biomet to re-think its refusal.⁶⁸

G. *Gordon v. Kaleida Health and Hinterberger v. Catholic Health System, Inc.* – Judge Foschio

In *Gordon v. Kaleida Health* and *Hinterberger v. Catholic Health System, Inc.*, Magistrate Judge Foschio of the Western District of New York addressed predictive coding in companion cases concerning New York wage and hour laws.⁶⁹ The plaintiffs and defendants were represented by the same counsel in both cases, and Judge Foschio issued two decisions in each case addressing ediscovery issues and predictive coding. *Gordon I* and *Hinterberger I* concerned a dispute over Plaintiffs' e-discovery and predictive coding consultant.⁷⁰ The dispute over the vendor significantly delayed the parties' predictive coding protocol, and *Gordon II* and *Hinterberger II* concern plaintiffs' motion to either compel defendants to meet and confer or to adopt plaintiffs' predictive coding protocol.⁷¹ The court observed:

For well-over a year, the parties have attempted, without success, to agree on how to achieve a cost-effective review of Defendants' voluminous e-mails, estimated at 200-300,000 using a key-word search methodology. At the last of a series of ESI discovery status conferences with the court, ... the court expressed dissatisfaction with the parties' lack of progress toward resolving issues related to completion of review and production of Defendants' e-mails using the key-word search method, and pointed to the availability of predictive coding, a computer assisted ESI reviewing and production method.⁷²

⁶⁸ *Id.* at *2.

⁶⁹ See *Gordon v. Kaleida Health*, 2013 WL 2250506, No. 08-CV-378S(F) (W.D.N.Y. May 21, 2013) ("Gordon I"); *Gordon v. Kaleida Health*, 2013 WL 2250579, No. 08-CV-378S(F) (W.D.N.Y. May 21, 2013) ("Gordon II"); *Hinterberger v. Catholic Health System, Inc.*, 2013 WL 2250591, No. 08-CV-380S(F) (W.D.N.Y. May 21, 2013) ("Hinterberger I"); *Hinterberger v. Catholic Health System, Inc.*, 2013 WL 2250603, No. 08-CV-380S(F) (W.D.N.Y. May 21, 2013) ("Hinterberger II").

⁷⁰ *Gordon I*, 2013 WL 2250506; see also *Hinterberger I*, 2013 WL 2250591. Defendants hired the same vendor, approximately one year prior to Plaintiffs' retention of the vendor, to scan boxes of documents and to "objectively code" them. Defendants moved to disqualify Plaintiffs' expert and Plaintiffs' counsel due to this issue. The court declined to disqualify either Plaintiffs' expert or Plaintiffs' counsel, finding, among other reasons, that scanning and objectively coding documents did not constitute "expert" work but was ministerial in nature and that there was no evidence that any confidential information was conveyed to Plaintiffs. *Id.*

⁷¹ *Gordon II*, 2013 WL 2250579 at *1; *Hinterberger II*, 2013 WL 2250603 at *1.

⁷² *Id.*

Due to the dispute over plaintiffs' consulting expert, plaintiffs claimed that defendants refused to meet and confer regarding a predictive coding protocol.⁷³ However, defendants did send a proposed protocol to plaintiffs and indicated that they would also send a list of email custodians.⁷⁴

Plaintiffs "contend[ed] that where a party intends to use predictive coding to assist in the review and production of ESI, it is necessary that the parties negotiate a proposal to guide the use of predictive coding software for the case."⁷⁵ Specifically, "Plaintiffs maintain[ed] Defendants' position excludes Plaintiffs' access to important information regarding Defendant's selection of so-called 'seed set documents' which are used to 'train the computer' in the predictive coding search method."⁷⁶ Defendants claimed "that courts do not order parties in ESI disputes to agree to specific protocols a computer-based review of ESI based on the general rule that ESI production is within the 'sound discretion' of the producing party."⁷⁷ Defendants also stated that the *Da Silva Moore* court "did not direct defendants in that case to provide plaintiffs with the 'seed set documents' defendants intended to use in connection with predictive coding, rather, defendants volunteered to provide such data."⁷⁸ Since defendants indicated their willingness to meet and confer regarding the protocol once the dispute regarding plaintiffs' consulting expert was resolved, and "[b]ased on Defendants' expressed awareness of Defendants' discovery obligations, the court also need not, as Plaintiffs request, remind Defendants of relevant considerations regarding Defendants' use of predictive coding regarding ESI document production obligations."⁷⁹ The court dismissed Plaintiffs' motion without prejudice.⁸⁰

H. *In the Matter of the Search of Information Associated with the Facebook Account Identified by the Username Aaron.Alexis that is Stored at Premises Controlled by Facebook, Inc. – Judge Facciola*

Judge Facciola, one of the forerunners of all judicial e-discovery pioneers, was presented with an opportunity to give his thoughts on TAR in *In the Matter of the Search of Information Associated with the Facebook Account Identified by the Username Aaron.Alexis that is Stored at Premises Controlled by Facebook, Inc.*⁸¹ There, Judge Facciola issued an opinion "explain[ing] the Court's reasons for issuing [a] modified search and seizure warrant," having previously found that the government's request was overbroad.⁸² The court explained its concerns about how information that is not relevant to the criminal case is dealt with, and the modified search warrant required that "[a]ll records and content that the government determines [were] NOT within the scope of the investigation, as described above, must either be returned to Facebook, Inc., or, if copies (physical or electronic), destroyed."⁸³ The court was specifically concerned about information seized that related to third parties.⁸⁴ In discussing the problems with overly broad electronic seizures, the court expounded as follows:

73 *Id.*

74 *Id.*

75 *Id.* At *2.

76 *Id.*

77 *Id.*

78 *Id.*

79 *Id.* at *3 (citations omitted).

80 *Id.*

81 2013 WL 7856600, Case No. 13-MJ-742(JMF) (D.D.C. Nov. 26, 2013).

82 *Facebook*, 2013 WL 7856600 at *1.

83 *Id.* at *3.

84 *Id.* at *4.

Finally, since the 2009 amendment to Rule 41, there has been a sea change in the manner in which computers, which now contain enormous amounts of data, are searched with technology assisted review replacing other forms of searching, including the once thought gold standard of file-by-file and document-by document review. Thus, the premise of the 2009 amendment – that law enforcement had to open every file and folder to search effectively – may simply no longer be true. Indeed, this Court finds it hard to believe that a law enforcement agency of remarkable technical ability such as the FBI is opening every file and folder when it seizes a computer that contains a terabyte of data. The Court cannot imagine that it has the time or personnel to do it, nor see any reason to do it when there are more efficient means to do what its agents have to do. Thus, the boilerplate that has appeared in every search warrant application for as long as law enforcement has been searching computers insisting that the agents must open every file and folder may simply be incorrect and therefore an illegitimate premise for the kind of searching law enforcement will actually do.⁸⁵

The court suggested that in the future, the government might consider using “a special master with authority to hire an independent vendor to use computerized search techniques,” or to have a “search protocol...designed to uncover only the information for which it has probable cause.”⁸⁶ The court concluded that “If the government cannot adopt stricter search parameters in future applications, it may find this Court unwilling to issue any search and seizure warrants for electronic data that ignore the constitutional obligations to avoid ‘general’ electronic warrants that are as offensive to the Fourth Amendment as the searches that led to its enactment.”⁸⁷

I. *Federal Housing Finance Agency v. HSBC North America Holdings, Inc.* – Judge Cote

In *Federal Housing Finance Agency v. HSBC North America Holdings Inc.*,⁸⁸ the court denied a request for reconsideration of a discovery order.⁸⁹ In discussing the request for reconsideration, the court expounded support for predictive coding:

Indeed, at the earliest stages of this discovery process, JPMorgan Chase was permitted, over the objection of FHFA, to produce its documents through the use of predictive coding. The literature that the Court reviewed at that time indicated that predictive coding had a better track record in the production of responsive documents than human review, but that both processes fell well short of identifying for production all of the documents the parties in litigation might wish to see.⁹⁰

⁸⁵ *Id.* at *8.

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ 2014 WL 584300 2014 WL 584300, Nos. 11 Civ. 6189 (DLC), 11 Civ. 6190 (DLC), 11 Civ. 6193 (DLC), 11 Civ. 6195 (DLC), 11 Civ. 6198 (DLC), 11 Civ. 6200 (DLC), 11 Civ. 6201 (DLC), 11 Civ. 6202 (DLC), 11 Civ. 6203 (DLC), 11 Civ. 6739 (DLC), 11 Civ. 7010 (DLC) (S.D.N.Y. Feb. 14, 2014).

⁸⁹ *Federal Housing Finance Agency*, 2014 WL 584300 at *1.

⁹⁰ *Id.* at *3.

In denying the request to challenge the completeness of document productions, the court stated that “[N]o one could or should expect perfection from the [discovery] process. All that can be legitimately expected is a good faith, diligent commitment to produce all responsive documents uncovered when following the protocols to which the parties have agreed, or which a court has ordered.”⁹¹

VI. EPILOGUE - LESSONS FROM THE JUDICIAL PIONEERS

The opinions of the judicial pioneers discussed above manifest a virtual unanimous consensus of support for technology-assisted review. These judicial trail-blazers embrace technology-assisted review for two main reasons. First, empirical data scientifically establishes that TAR equals or exceeds human manual review in search and production reliability. In addition to Judge Peck, several later judicial pioneers cited to sources that assert that predictive coding is more reliable than key-word searching or manual review.⁹² Second, and perhaps most importantly, TAR reduces the expense of document production, especially in cases involving many gigabytes and/or terabytes of electronically stored information. Other courts have followed Judge Peck’s lead in noting the significant cost savings possible with predictive coding.⁹³ Moreover, it is notable that at least two courageous judicial explorers allowed a party to use predictive coding over the objections of the opposition,⁹⁴ while two other pioneering courts raised the use of predictive coding *sua sponte*.⁹⁵

Da Silva Moore used the phrase “computer-assisted review,” but the majority of the later pioneers used the term “predictive coding.”⁹⁶ As new forms of TAR evolve utilizing more sophisticated artificial intelligence techniques and algorithms, predictive coding may rapidly become as *passé* as keyword searching. If predictive coding is today’s “new black,” it could just as easily become tomorrow’s floppy disk. The important takeaway is not that new technology always fails us in the end, but rather a new generation of technology, that is faster, better and cheaper, will always save us in the end.

Future judicial travelers into the deep space of TAR will need to resolve the very contentious issue of transparency – how much cooperation and sharing of information about a party’s TAR process is enough? Where should a court draw the line between good faith compliance with *The Sedona Conference Cooperation Proclamation*, and violation of the attorney work product doctrine? Specifically, should parties be **required** over its objection to share information about the composition and coding of its seed set, or a subset of the seed set? The *Biomet* court encouraged the recalcitrant party to share non-privileged and relevant documents from the seed set, but found that it “did not have any discretion” to compel such cooperation.⁹⁷ Judge Foschio raised the issue of whether the seed set must be shared in *Gordon II* and *Hinterberger II*, but did not resolve it, ultimately ordering the parties to meet and confer further.⁹⁸ While Judge Peck had before him a producing party

91 *Id.* at *2.

92 *See, e.g., National Day Laborer Organizing Network*, 877 F. Supp. 2d 87; *Chevron*, 2013 WL 1087236; *Federal Housing Finance Agency*, 2014 WL 584300.

93 *Gabriel Technologies Corp.*, 2013 WL 410103; *Chevron*, 2013 WL 1087236.

94 *Global Aerospace Inc.*, 2012 WL 1431215; *Federal Housing Finance Agency*, 2014 WL 584300.

95 *EORHB, Inc.*, 2012 WL 4896670; *Chevron*, 2013 WL 1087236.

96 *Global Aerospace Inc.*, 2012 WL 1431215; *National Day Laborer Organizing Network*, 877 F. Supp. 2d 87; *EORHB, Inc.*, 2012 WL 4896670; *Chevron*, 2013 WL 1087236; *In re Biomet*, 2013 WL 1729682, 2013 WL 6405156; *Gordon II*, 2013 WL 2250579; *Hinterberger II*, 2013 WL 2250603; *Federal Housing Finance Agency*, 2014 WL 584300. *But see Gabriel Technologies Corp.*, 2013 WL 410103, *10 (“computer-assisted, algorithm-driven document review”); *National Day Laborer Organizing Network*, 877 F. Supp. 2d 87, 109 (“‘computer assisted’ or ‘predictive coding’”); *Facebook, Inc.*, 2013 WL 7856600, *8 (“technology assisted review”).

97 *In re Biomet*, 2013 WL 6405156 at *2.

98 *Gordon II*, 2013 WL 2250579 at *3; *Hinterberger II*, 2013 WL 2250603 at *3.

that volunteered transparency, his parting advice to future TAR-nizens is that the more transparency that you are willing to give, the more cooperation from opposing counsel, and the more approval from the court, you will be likely to get. We could aptly name this principle “Peck’s Golden Rule of Transparency.”

As the opinions of the ten judicial pioneers discussed above appear to show, TAR is a true litigation game-changer that is here to stay. Professional responsibility requires understanding and competency in its application on the part of the litigation team – a standard of care best met with, rather than without, competent e-discovery counsel. It remains to be seen whether TAR marches forward with the same force as e-discovery has over the past decade, or whether willful blindness, Luddite-like fear of technology, and/or addiction to unchecked legal bills will create obstacles in the path of TAR’s manifest destiny. We thank all of the judicial pioneers of TAR, past, present and future, for showing us all the way forward.



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