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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RONY CALO, GIJS GELEIJNSE and ALEKSANDRA TESANOVIC

Appeal 2020-000564
Application 14/368,368
Technology Center 3600

Before KARA L. SZPONDOWSKI, SCOTT B. HOWARD, and STEVEN M. AMUNDSON, *Administrative Patent Judges*.

HOWARD, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 9, 10, and 21–33, which constitute all of the claims pending in this application. Claims 1–8 and 11–20 have been cancelled. Final Act. 2.[2] We have jurisdiction under 35 U.S.C. § 6(b).

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[1] We use the word "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Koninklijke Philips N.V. Appeal Br. 3.

[2] We refer to the Specification filed June 24, 2014 ("Spec."); Final Office Action mailed Jan. 17, 2019 ("Final Act."); Appeal Brief filed May 13, 2019

We AFFIRM and institute a new ground of rejection under the provisions of 37 C.F.R. § 41.50(b).

THE INVENTION

The disclosed and claimed invention is directed to "systems and methods for reducing early readmission" for hospitalized heart failure patients. *See* Spec. ¶¶ 1, 3.

Claim 9, reproduced below, is illustrative of the claimed subject matter:

> 9. A system for facilitating treatment of a patient via creation of a personalized risk model configured with psychosocial risk factors derived from unmodifiable risk factors of the patient, the system comprising:
>
> a memory storing a plurality of validated risk models; and
>
> a processor configured to:
>
> receive patient data for a patient and a validated risk model;
>
> apply the validated risk model to the patient data to determine a plurality of risk factors related to the patient for a personalized risk model;
>
> classify each of the plurality of risk factors as at least one of a medical risk factor, an unmodifiable psychosocial risk factor, and a modifiable psychosocial risk factor, wherein an unmodifiable psychosocial risk factor is not directly addressable during hospitalization and a modifiable psychosocial risk factor is directly addressable during hospitalization, wherein a given risk factor of the plurality of risk factors is classified as a given unmodifiable psychosocial risk factor;

("Appeal Br."); Examiner's Answer mailed Sept. 6, 2019 ("Ans."); and the Reply Brief filed Nov. 1, 2019 ("Reply Br.").

> decompose the given unmodifiable psychosocial risk factor into a plurality of modifiable psychosocial risk factors, wherein the plurality of modifiable psychosocial risk factors are non-physiological factors;
>
> supplement the validated risk model with the plurality of modifiable psychosocial risk factors to create the personalized risk model for the patient such that the personalized risk model is configured with the plurality of modifiable psychosocial risk factors, the personalized risk model being the supplemented validated risk model;
>
> receive a result of treatment related to at least one of the plurality of modifiable psychosocial risk factors of the personalized risk model;
>
> determine an overall risk level related to the patient based on (i) the personalized risk model and (ii) the result of treatment;
>
> determine whether the overall risk level breaches a threshold level; and
>
> responsive to the overall risk level breaching the threshold level, provide treatment information indicating a further treatment for the patient, the treatment information being provided based on at least a further one of the plurality of modifiable psychosocial risk factors of the personalized risk model.

REFERENCES

The prior art relied upon by the Examiner as evidence in rejecting the claims on appeal is:

Name	**Reference**	**Date**
Langheier	US 2006/0173663 A1	Aug. 3, 2006
Jenkins	US 2007/0244375 A1	Oct. 18, 2007

Name	Reference	Date
Albert	US 2011/0246220 A1	Oct. 6, 2011
Philbin	"Prediction of Hospital Readmission for Heart Failure: Development of a Simple Risk Score Based on Administrative Data"	1999

REJECTIONS

Claims 9, 10, and 21–33 stand rejected under 35 U.S.C. § 101 as directed to patent-ineligible subject matter. Final Act. 2.

Claims 9, 10, 21–23, 25–29, and 31–33 stand rejected under 35 U.S.C. § 103 as unpatentable over Langheier, Jenkins, and Albert. Final Act. 5.

Claims 30 and 24 stand rejected under 35 U.S.C. § 103 as unpatentable over Langheier, Jenkins, Albert, and Philbin. Final Act. 9.

ANALYSIS

We have reviewed the Examiner's rejection in light of Appellant's arguments that the Examiner erred. In reaching this decision, we consider all evidence presented and all arguments made by Appellant.

Section 101 Rejection

An invention is patent-eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. However, the U.S. Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: "[l]aws of nature, natural phenomena, and abstract ideas" are not patentable. *E.g.*, *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Court's two-part framework, described in *Mayo* and *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is "directed to." *See Alice*, 573 U.S. at 219 ("On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.,* the use of a third party to mitigate settlement risk."); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) ("Claims 1 and 4 in petitioners' application explain the basic concept of hedging, or protecting against risk.").

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding rubber products" (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); "tanning, dyeing, making waterproof cloth, vulcanizing India rubber, smelting ores" (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1853))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Court held that "a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula." *Diehr*, 450 U.S. at 187; *see also id.* at 191 ("We view respondents' claims as nothing more than a process for molding rubber products and not as an

attempt to patent a mathematical formula."). Having said that, the Court also indicated that a claim "seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment." *Id.* (citation omitted) (citing *Benson* and *Flook*); *see, e.g.*, *id.* at 187 ("It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.").

If the claim is "directed to" an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where "we must examine the elements of the claim to determine whether it contains an 'inventive concept' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Alice*, 573 U.S. at 221 (quotation marks omitted). "A claim that recites an abstract idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Id.* (alterations in original) (quoting *Mayo*, 566 U.S. at 77). "[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

B. USPTO Section 101 Guidance

In January 2019, the U.S. Patent and Trademark Office (USPTO) published revised guidance on the application of § 101. 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) ("2019 Revised Guidance").[3] "All USPTO personnel are, as a matter of

[3] In response to received public comments, the Office issued further guidance on October 17, 2019, clarifying the 2019 Revised Guidance. USPTO, *October 2019 Update: Subject Matter Eligibility* (the "October

internal agency management, expected to follow the guidance." *Id.* at 51; *see also* October 2019 Update at 1.

Under the 2019 Revised Guidance and the October 2019 Update, we first look to whether the claim recites:

> (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes) ("Step 2A, Prong One"); and
>
> (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h) (9th ed. rev. 08.2017 Jan. 2018)) ("Step 2A, Prong Two").[4]

2019 Revised Guidance, 84 Fed. Reg. at 52–55.

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look, under Step 2B, to whether the claim:

> (3) adds a specific limitation beyond the judicial exception that is not "well-understood, routine, conventional" in the field (*see* MPEP § 2106.05(d)); or

2019 Update") (available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf).

[4] This evaluation is performed by (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception, and (b) evaluating those additional elements individually and in combination to determine whether the claim as a whole integrates the exception into a practical application. *See* 2019 Revised Guidance - Section III(A)(2), 84 Fed. Reg. 54–55.

> (4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

2019 Revised Guidance, 84 Fed. Reg. at 52–56. Furthermore, the Memorandum "extracts and synthesizes key concepts identified by the courts as abstract ideas to explain that the abstract idea exception includes the following groupings of subject matter, when recited as such in a claim limitation(s) (that is, when recited on their own or per se)":

> (a) Mathematical concepts—mathematical relationships, mathematical formulas or equations, mathematical calculations;
>
> (b) Certain methods of organizing human activity—fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions); and
>
> (c) Mental processes—concepts performed in the human mind (including an observation, evaluation, judgment, opinion).

Id. at 52 (footnotes omitted).

USPTO Step 2A, Prong 1

The Examiner determines that the claims can be performed "in the mind but for the recitation of generic computer components," and are

directed to mental processes. Final Act. 3. Specifically, the Examiner finds that the claim "[b]roadly recite[s] steps such as 'receiving,' 'applying,' 'classifying,' 'decomposing,' 'supplementing,' 'determining,' and 'providing treatment information' [that] can be performed in the mind." Ans. 4.

Appellant argues that "nearly all of the limitations of the independent claims cannot be practically performed in the human mind or are based on such limitations." Appeal Br. 9; *see* Reply Br. 3–4.

We are not persuaded by Appellant's arguments that the Examiner erred. Representative claim 9—with emphasis added—is reproduced below:

> 9. A system for facilitating treatment of a patient via *creation of a personalized risk model configured with psychosocial risk factors derived from unmodifiable risk factors of the patient*, the system comprising:
>
> a memory storing a plurality of validated risk models; and
>
> a processor configured to:
>
> receive patient data for a patient and a validated risk model;
>
> *apply the validated risk model to the patient data to determine a plurality of risk factors related to the patient for a personalized risk model*;
>
> *classify each of the plurality of risk factors as at least one of a medical risk factor, an unmodifiable psychosocial risk factor, and a modifiable psychosocial risk factor, wherein an unmodifiable psychosocial risk factor is not directly addressable during hospitalization and a modifiable psychosocial risk factor is directly addressable during hospitalization, wherein a given risk factor of the plurality of risk factors is classified as a given unmodifiable psychosocial risk factor*;

> *decompose the given unmodifiable psychosocial risk factor into a plurality of modifiable psychosocial risk factors, wherein the plurality of modifiable psychosocial risk factors are non-physiological factors*;
>
> *supplement the validated risk model with the plurality of modifiable psychosocial risk factors to create the personalized risk model for the patient such that the personalized risk model is configured with the plurality of modifiable psychosocial risk factors, the personalized risk model being the supplemented validated risk model*;
>
> receive a result of treatment related to at least one of the plurality of modifiable psychosocial risk factors of the personalized risk model;
>
> *determine an overall risk level related to the patient based on (i) the personalized risk model and (ii) the result of treatment*;
>
> *determine whether the overall risk level breaches a threshold level*; and
>
> *responsive to the overall risk level breaching the threshold level, provide treatment information indicating a further treatment for the patient, the treatment information being provided based on at least a further one of the plurality of modifiable psychosocial risk factors of the personalized risk model*.

Appeal Br. 20–21 (emphasis added). Claim 25 similarly recites the method steps of claim 9. *Id.* at 22–23. Claim 33 similarly recites a "system comprising: a memory . . . and a processor configured to" perform steps commensurate the steps highlighted in claim 9. *Id.* at 25–26.

As relevant here, the Guidance explains that "mental processes" include "concepts performed in the human mind (including an observation, evaluation, judgment, opinion)." 2019 Revised Guidance, 84 Fed. Reg. at 52.

The emphasized limitations above can each be practically performed in the human mind. Specifically, the claim limitations identified above are directed to (i) applying a risk model to received data to determine a patient's risk factors; (ii) classifying the determined patient risk factors; (iii) decomposing classified patient risk factors into other risk factors; (iv) supplementing the risk model with the decomposed risk factors to create a personalized risk model; (v) determining the overall patient risk level based on the created personalized risk model and received data; (vi) determining whether the determined overall patient risk level breaches a threshold level; and (vii) providing further treatment information when the overall patient risk level breaches a threshold level. Each of these steps, both individually and as a combination, can be performed by a medical professional who assesses patient data to determine patient risk and develop further treatment for the patient (i.e., can be practically performed in the human mind).

Accordingly, we conclude that claims 9, 25, and 33 recite a method and related system to assess patient data to determine patient risk and develop further treatment for the patient, which is an example of an observation, evaluation, judgment, or opinion performed in the human mind, as identified in the 2019 Revised Guidance, and thus an abstract idea.

USPTO Step 2A, Prong 2

In determining whether claim 9 is "directed to" the identified abstract ideas, we next consider whether claim 9 recites additional elements that integrate the judicial exception into a practical application. For the reasons set forth below, we discern no additional element (or combination of

elements) recited in claim 9 that integrates the judicial exception into a practical application. *See* 2019 Revised Guidance, 84 Fed. Reg. at 54–55.

Claim 9 also recites the following data-collecting limitations: "receive patient data for a patient and a validated risk model" and "receive a result of treatment related to at least one of the plurality of modifiable psychosocial risk factors of the personalized risk model." Appeal Br. 20–21. Claims 25 and 33 recite similar limitations. *Id.* at 22–23, 25–26.

We determine that the claimed data-collecting limitations constitute insignificant extra-solution activity. As an example of insignificant extra-solution activity, the Federal Circuit has held that mere data-gathering steps "cannot make an otherwise nonstatutory claim statutory." *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370 (Fed. Cir. 2011) (quoting *In re Grams*, 888 F.2d 835, 839–40 (Fed. Cir. 1989)). Consistent with Court decisions, the MPEP identifies "gathering data" as an example of insignificant pre-solution activity. MPEP § 2106.05(g).

Appellant argues that the claims are integrated into a practical application because the

> claimed invention not only accounts for patient data for its computation of the risk factors, but also accounts for accuracy of prior risk factors related to the personalized risk model for the final determination of the overall risk level, thereby increasing the accuracy of determinations of the risk of readmissions by a care level transition recommendation system.

Appeal Br. 10; *see* Appeal Br. 11–12 (citing *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016)). Specifically, Appellant argues that "the claimed inventions provide an improvement over the foregoing prior computer systems by enabling a more dynamic and improved treatment determination." Reply Br. 5; *see also* Reply Br. 6, 7.

According to Appellant, the "claimed invention involves the non-conventional step of 'decompos[ing] the given umodifiable psychosocial risk factor." Appeal Br. 14.

We are not persuaded. The Examiner properly concludes that "reducing the risk of readmission rate of hospitalized heart failure patients is not a *technical solution*" and that "there is no improvement in computer-related technology." Ans. 4. Contrary to Appellant's argument, each of the independent claims merely adapts the abstract idea of collecting data (i.e., "receiving patient data," "receive a result of treatment") and analyzing data to assess risk and develop a treatment plan (i.e., "apply the validated risk model to the patient data," "classify each of the plurality of risk factors," "decompose the given unmodifiable psychosocial risk factor into a plurality of modifiable psychosocial risk factors," "supplement the validated risk model with the plurality of modifiable psychosocial risk factors to create the personalized risk model for the patient," "determine an overall risk level related to the patient," "determine whether the overall risk level breaches a threshold level," and "provide treatment information indicating a further treatment for the patient"), which can be practically performed in the human mind, to an execution of steps practically performed by computers (i.e., a "system comprising: a memory storing a plurality of validated risk models; and a processor"). *See* Spec. ¶ 26. Appellant highlights that the claimed invention "allows specific treatment to be recommended . . . such that the risk of hospital readmission is reduced." Appeal Br. 14. However, allowing recommendations to reduce hospital readmission risk does not improve technology. Rather, the claimed invention merely improves the abstract idea of *assessing* the patient's risk level and *providing treatment information* for

the patient. No improvements are made *to the technology* used to assess risk level or provide treatment information.

Relying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible. *See Alice*, 573 U.S. at 224 ("use of a computer to create electronic records, track multiple transactions, and issue simultaneous instructions" is not an inventive concept); *Bancorp Servs., L.L.C. v. Sun Life Assur. Co. of Can. (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) (a computer "employed only for its most basic function . . . does not impose meaningful limits on the scope of those claims"); MPEP § 2106.05(f)(2) ("Use of a computer or other machinery in its ordinary capacity for economic or other tasks (*e.g.*, to receive, store, or transmit data) or simply adding a general purpose computer or computer components after the fact to an abstract idea (*e.g.*, a fundamental economic practice or mathematical equation) does not provide significantly more."). Moreover, the "mere automation of manual processes using generic computers does not constitute a patentable improvement in computer technology." *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1055 (Fed. Cir. 2017).

Accordingly, we are not persuaded of error in the Examiner's determination that claims 9, 25, and 33 are directed to an abstract idea, and we find the claimed additional elements do not integrate the abstract idea into a practical application.

USPTO Step 2B

Turning to step 2 of the *Alice/Mayo* framework, we look to whether claim 9 (a) adds a specific limitation or combination of limitations that are not well-understood, routine, conventional activity in the field, or (b) simply

appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception. 2019 Revised Guidance, 84 Fed. Reg. at 56.

According to the Examiner, the claimed

> processor and memory are recited at a high-level of generality (i.e., as a generic processor performing generic computer functions of receiving, analyzing, and providing information and a generic memory that stores information) such that it amounts to no more than mere instructions to apply the exception using generic computer components.

Final Act. 3.

Appellant argues that there is no "factual evidence" that "demonstrate[s] whether the inventive concept is well-understood, routine, and conventional." Appeal Br. 15 (citing *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1369–70 (Fed. Cir. 2018)); *see* Appeal Br. 16; Reply Br. 6–7.

We are persuaded of Examiner error. The Examiner provides no evidence supporting the conclusion that the claimed "memory" and "processor" are generic computer components that perform generic and conventional computer functions. Instead, the Examiner merely concludes that "it is unclear what is non-conventional and non-generic about the arrangement of the memory and processor." Ans. 5. The Examiner's conclusory statement is not consistent with PTO guidance about *Berkheimer v. HP*. *See* USPTO Memorandum, Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*) (Apr. 19, 2018) (hereinafter "*Berkheimer* Memorandum").

That guidance states that "the well-understood, routine, conventional nature of the additional element(s)" may be demonstrated by citations to the

specification, citations to court decisions, citations to publications, or a statement of official notice. *Berkheimer* Memorandum 3–4. The Examiner fails to provide the factual evidence required by the PTO guidance.

However, on our independent review, we agree with the Examiner's conclusion that the claimed steps using the claimed computer system components (i.e., "processor" and "memory") amount to no more than mere instructions to apply the exception using generic computer components.

For example, the Specification describes using generic hardware elements. *See, e.g.*, Spec. ¶ 25 ("user interface 410 is operable to receive various types of user input"; "user interface 210 is also used as an output device"); ¶ 26 ("user interface 410 provides data to a processor 420 that may execute a program embodying the exemplary method 300"; "memory 430 may be a hard drive, a solid state drive, distributed storage, etc., and may store data in any format appropriate for use"). In other words, the claimed invention, implemented on a "system comprising: a memory storing a plurality of validated risk models; and a processor," utilizes merely generic computer elements. Accordingly, the claims at issue do not require any nonconventional computer components, or even a "non-conventional and non-generic arrangement of known, conventional pieces," but merely call for performance of the claimed information receiving and processing "on a set of generic computer components." *BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349–52 (Fed. Cir. 2016).

Appellant does not direct our attention to anything in the Specification that indicates the claimed computer components (i.e., "memory" and "processor") perform anything other than well-understood, routine, and conventional functions, such as receiving and processing data. *See*

buySAFE, Inc. v. Google, Inc., 765 F.3d 1350, 1355 (Fed. Cir. 2015) ("That a computer receives and sends information over a network–with no further specification–is not even arguably inventive"); *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 614 (Fed. Cir. 2016) (server that receives data, extracts classification information from the received data, and stores the digital images insufficient to add an inventive concept); *Alice*, 573 U.S. at 2359–2360 (receiving, storing, sending information over networks insufficient to add an inventive concept); *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1342 (Fed. Cir. 2017) (the claims "recite no more than routine steps of data collection and organization using generic computer components and conventional computer data processing activities," which is insufficient to provide an inventive concept). Accordingly, the claims at issue are performed such that they are well-understood, routine, conventional functions of a generic computer.

With regard to dependent claims 10, 21–24, and 26–32, those claims either recite further aspects of the abstract idea and/or further recite the additional limitation of claim 9 which we find to be well-understood, routine, and conventional. For example, dependent claim 10 further defines a "processor"—which is well-understood, routine, and conventional—which is "configured to select the at least one modifiable psychosocial risk factor based on the at least one modifiable psychosocial factor being a most influencing one of the plurality of risk factors"—which is an aspect of the abstract idea. *See also* claims 28, 29 (reciting a mental step that is performed by a processor). Similarly, claim 21 simply recites further details of the abstract idea, specifically risk factors that should be considered. *See also* claims 22–24, 26, 27, and 30–32.

Accordingly, we sustain the Examiner's rejection of claim 9 as being directed to patent-ineligible subject matter, as well as commensurate independent claims 25 and 33, and dependent claims 10, 21–24, and 26–32, not separately argued.

Because the Examiner did not provide evidence that the claimed computer components perform well-understood, routine, conventional activities, we designate the affirmance as a new ground of rejection under 37 C.F.R. § 41.50(b).

Section 103 Rejections

Claim 9 recites "decompos[ing] the given unmodifiable psychosocial risk factor [of the personalized risk model] into a plurality of modifiable psychosocial risk factors . . . [that] are non-physiological factors."

The Examiner finds that Jenkins's classification of data teaches the risk factors and the decomposing limitation. Final Act. 6–7 (citing Jenkins Figs. 1, 8, ¶¶ 18, 131–135). The Examiner finds that Jenkins's "age" teaches the claimed "unmodifiable psychosocial risk factor" and Jenkins's "BMI" and "Mental Health" teach the claimed "modifiable psychosocial risk factors." Ans. 5. The Examiner relies on Albert to teach "the 'wherein the plurality of modifiable psychosocial risk factors are *non-physiological* factors' limitation." *Id.* at 6 (citing Albert ¶¶ 127, 129).

Appellant argues that Jenkins teaches factors that "cannot be interpreted to teach modifiable non-physiological psychosocial risk factors (derived from an unmodifiable psychosocial risk factor), much less the . . . claimed decomposing limitation." Appeal Br. 17 (emphasis omitted); *see* Reply Br. 8–9. Specifically, Appellant argues that "Jenkins fails to describe

decomposing such unmodifiable factor (e.g., age) into a plurality of modifiable non-physiological factors (e.g., lack of instructions, advice, and counseling)." Reply Br. 9 (emphasis omitted).

We are persuaded by Appellant's argument as the Examiner has not identified sufficient evidence or provided sufficient explanation as to how the combination of Langheier, Jenkins, and Albert teaches decomposing one risk factor into multiple different risk factors.

The cited sections of Jenkins teach dividing predictors into categories of related variables, "and then the regressors for the descriptive logistic model are drawn from a list of the . . . variables having the highest importance score within each category." Jenkins ¶ 131. For example, the "predictor categories include age, gender, baseline obesity measurements," and "physical function, physical role limitations, vitality, bodily pain, generation health perception, emotional well being, emotional role limitations, [and] social function." *Id.* ¶ 132. In Jenkins, the "basic strategy to move from this list to a descriptive logistic specification was to enter each listed variable, or a transformation of the variable, into the regression model in descending order of their CART relative importance scores." *Id.* ¶ 133. In other words, Jenkins teaches factors, both modifiable and non-modifiable, and both physiological and non-physiological, used in predictive modeling.

However, the sections of Jenkins cited by the Examiner and on the record before us do *not* teach *decomposing* one risk factor (i.e., "the given unmodifiable psychosocial risk factor") into a plurality of other risk factors (i.e., "modifiable psychosocial risk factors . . . [that] are non-physiological factors"), as recited in claim 9. We agree with Appellant that the proposed combination of references would not arrive at the claimed limitations and

that "nothing in the Albert reference addresses any actual deficiencies of Jenkins." Reply Br. 9.

Therefore, we agree with Appellant that the Examiner's finding that the combination of Langheier, Jenkins, and Albert teaches the disputed limitations is in error because it is not supported by a preponderance of the evidence. *See In re Caveney*, 761 F.2d 671, 674 (Fed. Cir. 1985) (The Examiner's burden of proving unpatentability is by a preponderance of the evidence.); *see also In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) ("The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not, because it may doubt that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis.").

Accordingly, we are constrained on the record before us to reverse the Examiner's § 103 rejection of independent claim 9, along with the § 103 rejection of independent claims 25 and 33, which recite limitations commensurate in scope to the disputed limitations discussed above, and dependent claims 10, 21–24, and 26–29, 31, and 32.

Moreover, because the Examiner has not shown that the additionally cited reference to Philbin cures the foregoing deficiencies regarding the rejection of the independent claims 9, 25, and 33, we will not sustain the obviousness rejection of dependent claims 24 and 30.

CONCLUSION

We affirm the Examiner's § 101 rejection of claims 9, 10, and 21–33, and designate our affirmance as a new ground of rejection.

We reverse the Examiner's § 103 rejections of claims 9, 10, and 21–33.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	References/Basis	Affirmed	Reversed	New Ground of Rejection
9, 10, 21–33	101	Eligibility	9, 10, 21–33		9, 10, 21–33
9, 10, 21–23, 25–29, 31–33	103	Langheier, Jenkins, Albert		9, 10, 21–23, 25–29, 31–33	
24, 30	103	Langheier, Jenkins, Albert, Philbin		24, 30	
Overall Outcome			9, 10, 21–33		9, 10, 21–33

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b). Section 41.50(b) provides that "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review." Section 41.50(b) also provides:

When the Board enters such a non-final decision, the appellant, within two months from the date of the decision, must exercise one of the following

two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

> (1) *Reopen prosecution*. Submit an appropriate amendment of the claims so rejected or new Evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the prosecution will be remanded to the examiner. The new ground of rejection is binding upon the examiner unless an amendment or new Evidence not previously of Record is made which, in the opinion of the examiner, overcomes the new ground of rejection designated in the decision. Should the examiner reject the claims, appellant may again appeal to the Board pursuant to this subpart.
>
> (2) *Request rehearing*. Request that the proceeding be reheard under § 41.52 by the Board upon the same Record. The request for rehearing must address any new ground of rejection and state with particularity the points believed to have been misapprehended or overlooked in entering the new ground of rejection and also state all other grounds upon which rehearing is sought.

Further guidance on responding to a new ground of rejection can be found in the Manual of Patent Examining Procedure § 1214.01.

AFFIRMED; 37 C.F.R. § 41.50(b)