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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte YUECHEN QIAN, SEVENSTER MERLIJN,
and GISELLE REBECCA ISNER

Appeal 2019-000426
Application 13/641,901
Technology Center 2100

Before JOHN A. JEFFERY, JOHN A. EVANS, and JUSTIN BUSCH, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Under 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1, 2, 5–9, 11–14, and 16–21. Claims 3, 4, and 15 are indicated as containing allowable subject matter, and claim 10 was cancelled. *See* Final Act 14; Appeal Br. 20.[2] We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM.

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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. 2.

[2] Throughout this opinion, we refer to (1) the Final Rejection mailed February 2, 2018 ("Final Act."); (2) the Appeal Brief filed June 14, 2018 ("Appeal Br."); (3) the Examiner's Answer mailed August 27, 2018 ("Ans."); and (4) the Reply Brief filed October 22, 2018 ("Reply Br.").

STATEMENT OF THE CASE

Appellant's invention enables viewing structured and unstructured reports simultaneously. When a structured report, such as a report that uses Breast Imaging Reporting and Data System (BIRADS) descriptors, is opened, the system searches for other reports related to those descriptors. The system then displays both structured and unstructured reports simultaneously, highlighting the words and sentences derived from the descriptors. *See generally* Spec. 4–5, 8–11, 20; Fig. 1. Claims 1 and 20 are illustrative:

> 1. A method for viewing a medical report describing radiological images, comprising the acts of:
>
> opening a structured medical report describing one or more radiological images using descriptors selected from a predefined list of descriptors, wherein the descriptors of the structured medical report describe a first lesion and at least one descriptor includes an imaging modality of the one or more radiological images that include the described first lesion; and
>
> in response to the opening act, performing the further acts of:
>
> searching by a processor for an unstructured further report of a prior study related to the descriptors of the structured medical report for a same patient,
>
> wherein the search matches keywords translated with an ontology from the descriptors of the structured medical report and an interpretation of one or more interpretations obtained from free text of the unstructured further report,
>
> wherein the free text of the unstructured further report includes sentences and words in the sentences,
>
> wherein the interpretation of the one or more interpretations includes a plurality of attributes obtained from the free text and describe a second lesion,
>
> wherein one attribute of the plurality of attributes includes an imaging modality of the image that includes

the described second lesion in the unstructured further report,

wherein the matching of the search comprises matching the imaging modality of the one attribute of the described second lesion obtained from the free text of the unstructured report with the imaging modality of the keyword translated from the at least one descriptor of the structured report; and

highlighting in the free text of the unstructured further report of a prior study displayed on a display device at least one selected from a group comprising of the words in the sentences and the sentences of the one or more interpretations matched with keywords derived from the used descriptors of the structured medical report.

20. A report viewer comprising:

an ontology engine including one or more processors configured to receive descriptors from a structured medical report of a patient used to describe a first lesion in one or more radiological images, and select and translate used descriptors from the received descriptors according to a predefined set of descriptors into keywords;

a report analyzer including the one or more processors configured to analyze free text of an unstructured further report of a prior study of a same patient to obtain a plurality of interpretations of the free text and the unstructured further report includes a plurality of imaging modalities, each interpretation includes a plurality of attributes and each interpretation includes an attribute associated with one imaging modality of the plurality of imaging modalities of the unstructured further report and each interpretation including one or more attributes of the plurality of attributes that describe a lesion and each interpretation obtained using a different portion of the free text of the unstructured further report; and

a reasoning and matching engine including the one or more processors configured to match the translated keywords of the structure medical report of the patient describing the first lesion with attributes of the plurality of attributes of one obtained interpretation of the plurality of interpretations of the

> unstructured further report of the prior study of the same patient that describe a same lesion to highlight on a display device the different portion of the free text obtained for the one obtained interpretation and matched in the unstructured further report of the prior study of the same patient, wherein the match comprises at least the attribute associated with the one imaging modality of the plurality of imaging modalities of the unstructured further report.

THE REJECTIONS

The Examiner rejected claims 1, 2, 5–9, 11–14, and 16–21 under 35 U.S.C. § 101 as directed to ineligible subject matter. Ans. 3–6.

The Examiner rejected claims 20 and 21 under 35 U.S.C. § 103 as unpatentable over Kanada (US 7,844,089 B2; issued Nov. 30, 2010), Esham (US 2006/0242143 A1; published Oct. 26, 2006), Reiner (US 2010/0145720 A1; published June 10, 2010), and Bacon (US 2010/0306218 A1; published Dec. 2, 2010). Ans. 7–10.

THE INELIGIBILITY REJECTION

The Examiner determines that claims 1, 2, 5–9, 11–14, and 16–21 are directed to an abstract idea, namely obtaining data of a structured report, and comparing the data with an unstructured report's text. *See* Ans. 3–5. The Examiner adds that these claims do not include elements that add significantly more than the abstract idea, but merely recite generic computer structure that performs generic computer functions that are well-understood, routine, and conventional. Ans. 5–6.

Appellant argues that the claims are eligible because, among other things, they are directed to a smart report viewer for viewing reports using a predetermined set of radiological descriptors used in medical imaging

systems, where the claims not only recite specifically defined elements in combination, but also require a processor, thus improving the technical field of report viewers. Appeal Br. 6–10. Appellant adds that, contrary to the Examiner's determination, certain claimed functions are not well-understood, routine, or conventional, nor has the Examiner provided evidence in that regard. *See* Appeal Br. 9–10; Reply Br. 2–5.

ISSUE

Under § 101, has the Examiner erred in rejecting claims 1, 2, 5–9, 11–14, and 16–21 as directed to ineligible subject matter? This issue turns on whether the claims are directed to an abstract idea and, if so, whether recited elements—considered individually and as an ordered combination—transform the nature of the claims into a patent-eligible application of that abstract idea.

PRINCIPLES OF LAW

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 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. *See, 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 Supreme Court's two-step 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 water-proof cloth, vulcanizing India rubber, smelting ores" (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. (15 How.) 252, 267–68 (1854))); 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 Supreme 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 176; *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."). That said, the Supreme 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.* (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 (internal 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.*

In January 2019, the USPTO published revised guidance on the application of § 101. *See 2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Guidance"). Under that guidance, 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); and
>
> (2) additional elements that integrate the judicial exception into a practical application (*see* MANUAL OF PATENT EXAMINING

> PROCEDURE (MPEP) §§ 2106.05(a)–(c), (e)–(h) (9th ed. Rev. 08.2017, Jan. 2018)).

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

> (3) adds a specific limitation beyond the judicial exception that is not well-understood, routine, and conventional in the field (*see* MPEP § 2106.05(d)); or
>
> (4) simply appends well-understood, routine, and conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

See Guidance, 84 Fed. Reg. at 56.

ANALYSIS

Claims 1, 2, 5–9, 11–14, and 16–21: Alice/Mayo Step One

Representative independent claim 1 recites *a method for viewing a medical report describing radiological images, comprising the acts of:*

opening a structured medical report describing one or more radiological images using descriptors selected from a predefined list of descriptors, wherein the descriptors of the structured medical report describe a first lesion and at least one descriptor includes an imaging modality of the one or more radiological images that include the described first lesion; and

in response to the opening act, performing the further acts of:

searching by a processor for an unstructured further report of a prior study related to the descriptors of the structured medical report for a same patient,

wherein the search matches keywords translated with an ontology from the descriptors of the structured medical report and an interpretation of one or more interpretations obtained from free text of the unstructured further report,

wherein the free text of the unstructured further report includes sentences and words in the sentences,

wherein the interpretation of the one or more interpretations includes a plurality of attributes obtained from the free text and describe a second lesion,

wherein one attribute of the plurality of attributes includes an imaging modality of the image that includes the described second lesion in the unstructured further report,

wherein the matching of the search comprises matching the imaging modality of the one attribute of the described second lesion obtained from the free text of the unstructured report with the imaging modality of the keyword translated from the at least one descriptor of the structured report; and

highlighting in the free text of the unstructured further report of a prior study displayed on a display device at least one selected from a group comprising of the words in the sentences and the sentences of the one or more interpretations matched with keywords derived from the used descriptors of the structured medical report.[3]

As the disclosure explains, Appellant's invention enables viewing reports using a predetermined set of descriptors, such as Breast Imaging

[3] Unless otherwise indicated, we italicize or quote the recited limitations' text for emphasis and clarity.

Reporting and Data System (BIRADS) descriptors, used in medical imaging systems to document breast cancer studies in a structured manner using a standardized vocabulary. Spec. 1. As shown in the report of Appellant's Figure 1, BIRADS is used to annotate images including various sections that include BIRADS descriptors along with key radiological images. *See* Spec. 2–3.

Physicians, however, need to review prior studies or reports, and compare them with current studies or reports. Spec. 2. Thus, physicians need to read and use (1) legacy unstructured free-text reports, and (2) structured BIRADS findings simultaneously. Spec. 3. To this end, the present invention not only enables viewing a structured report, but also searches for other reports related to the structured report's descriptors, and displays both structured and unstructured reports simultaneously, highlighting the words and sentences derived from the descriptors. Spec. 4.

Turning to claim 1, we first note that the claim recites a method and, therefore, falls within the process category of § 101. But despite falling within this statutory category, we must still determine whether the claim is directed to a judicial exception, namely an abstract idea. *See Alice*, 573 U.S. at 217. To this end, we must determine whether the claim (1) recites a judicial exception, and (2) fails to integrate the exception into a practical application. *See* Guidance, 84 Fed. Reg. at 52–55. If both elements are satisfied, the claim is directed to a judicial exception under the first step of the *Alice/Mayo* test. *See id.*

In the rejection, the Examiner determines that claim 1 is directed to an abstract idea, namely obtaining structured report data, and comparing the data with an unstructured report's text. Ans. 4. To determine whether a

claim recites an abstract idea, we (1) identify the claim's specific limitations that recite an abstract idea, and (2) determine whether the identified limitations fall within certain subject matter groupings, namely, (a) mathematical concepts[4]; (b) certain methods of organizing human activity[5]; or (c) mental processes.[6]

Here, apart from the recited "processor" that searches for the recited unstructured report,[7] all of claim 1's recited limitations fit squarely within at least one of the above categories of the USPTO's guidelines. When read as a whole, the recited limitations are directed to searching for unstructured report data related to structured report data, and indicating their commonalities.

First, "opening a structured medical report . . ." organizes human activity at least to the extent that it is an essential precursor to reading the document's content—a preliminary step analogous to opening a book to read

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[4] Mathematical concepts include mathematical relationships, mathematical formulas or equations, and mathematical calculations. *See* Guidance, 84 Fed. Reg. at 52.

[5] Certain methods of organizing human activity include 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). *See* Guidance, 84 Fed. Reg. at 52.

[6] Mental processes are concepts performed in the human mind including an observation, evaluation, judgment, or opinion. *See* Guidance, 84 Fed. Reg. at 52.

[7] The processor of claim 1 is recited *only* in connection with searching an unstructured report, but is not recited as performing the other two method steps, namely (1) opening a structured medical report, and (2) highlighting words or sentences in the unstructured report.

its pages. In this sense, then, the cited limitations in the "opening" clause pertain to following associated rules or instructions or managing personal behavior at least with respect to a reader accessing the report's content by first opening the report. *Cf. In re Eberra*, 730 F. App'x 916, 917–18 (Fed. Cir. 2018) (unpublished) (holding ineligible recited process for providing a television network including *opening* a physical location for a television program that required nothing more than finding a location). Therefore, the recited "opening" limitation falls squarely within the certain methods of organizing human activity category of the USPTO's guidelines and, therefore, recites an abstract idea. *See* Guidance, 84 Fed. Reg. at 52 (listing exemplary methods of organizing human activity, including managing personal behavior and following rules or instructions).

Second, the recited "in response to the opening act, . . . [1] searching . . . for an unstructured further report of a prior study related to the descriptors of the structured medical report for a same patient . . . ," and [2] "highlighting . . ." could be done entirely mentally by merely (1) reading a structured medical report and noting its descriptors; (2) translating the descriptors into associated keywords; (3) comparing those keywords to attributes, including an imaging modality, derived from interpreting an unstructured report's text; (4) looking for common imaging modalities in both documents; (5) noting the associated words and sentences in the documents matching the derived keywords; and (6) organizing the results of that search by highlighting the associated words or sentences in the unstructured report either mentally or by writing this information down—processes that involve mere observation and logical reasoning. *Cf. CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372 (Fed. Cir.

2011) (noting that limitation reciting obtaining information about transactions that have used an Internet address identified with a credit card transaction can be performed by a human who simply reads records of Internet credit card transactions from a pre-existing database); *see also id.* (noting that a recited step that utilized a map of credit card numbers to determine the validity of a credit card transaction could be performed entirely mentally by merely using *logical reasoning* to identify a likely instance of fraud by merely *observing* that numerous transactions using different credit cards all originated from the same IP address); *Univ. of Fla. Research Found., Inc. v. Gen. Elec. Co.*, 916 F.3d 1363, 1365–69 (Fed. Cir. 2019) (holding ineligible claim reciting method of integrating physiologic treatment data that (1) converted physiologic data received from at least two bedside machines into machine-independent data; (2) performed at least one programmatic action involving that data; and (3) presented results from that action upon a bedside graphical user interface as directed to the abstract idea of collecting, analyzing, manipulating, and displaying data); *In re Meyer*, 688 F.2d 789, 795–96 (CCPA 1982) (holding ineligible claims that merely partly replaced a neurologist's thinking process with a computer); *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1345 (Fed. Cir. 2018) (noting that reciting collecting, organizing, and displaying two sets of information on a generic display device is abstract absent a specific improvement to the way computers or other technologies operate); *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1345–49 (Fed. Cir. 2014) (holding ineligible claims reciting (1) receiving output representing diverse types of hard copy documents from an automated digitizing unit; (2) recognizing specific information from the extracted data;

and (3) storing information from those documents into memory); *TLI Commc'ns LLC Patent Litig. v. AV Auto., L.L.C.*, 823 F.3d 607, 610–14 (Fed. Cir. 2016) (holding ineligible claims reciting recording and administering digital images including (1) recording images using a digital pick-up unit in a telephone unit; (2) storing the recorded images; (3) transmitting data including the images and classification information to a server; (4) extracting the received classification information; and (5) storing the images in the server considering that information); *In re Salwan*, 681 F. App'x 938, 939–41 (Fed. Cir. 2017) (unpublished) (holding ineligible claims reciting, among other things, receiving medical records information and transmitting reports where the claimed invention's objective was to enable electronic communication of tasks that were otherwise done manually using paper, phone, and facsimile machine). Accordingly, the recited "searching" and "highlighting" steps fall squarely within the mental processes category of the USPTO's guidelines and, therefore, recite an abstract idea. *See* Guidance, 84 Fed. Reg. at 52 (listing exemplary mental processes including observation and evaluation).

Therefore, apart from the recited "processor"—an element that is recited only in connection with the searching step—all of claim 1's limitations fall squarely within the certain methods of organizing human activity and mental processes categories of the USPTO's guidelines and, therefore, recite an abstract idea. *See* Guidance, 84 Fed. Reg. at 52 (listing exemplary mental processes including observation and evaluation).

Here, the recited "processor" is the only recited element beyond the abstract idea, but this additional element, considered individually and in combination, does not integrate the abstract idea into a practical application

when reading claim 1 as a whole. On this record, we are not persuaded that the claimed invention improves the computer or its components' functionality or efficiency, or otherwise changes the way those devices function, at least in the sense contemplated by the Federal Circuit in *Enfish, LLC v. Microsoft Corporation*, 822 F.3d 1327 (Fed. Cir. 2016), despite Appellant's arguments to the contrary (Reply Br. 2). The claimed self-referential table in *Enfish* was a specific type of data structure designed to improve the way a computer stores and retrieves data in memory. *Enfish*, 822 F.3d at 1339. To the extent Appellant contends that the claimed invention uses such a data structure to improve a computer's functionality or efficiency, or otherwise change the way that device functions, there is no persuasive evidence on this record to substantiate such a contention.

To the extent Appellant contends that the claimed invention is rooted in technology because it is ostensibly directed to a technical solution (*see* Appeal Br. 8–10), we disagree. Even assuming, without deciding, that the claimed invention can search for unstructured report data related to structured report data, and indicate their commonalities faster than doing so manually, any speed increase comes from the capabilities of the generic computer components—not the recited process itself. *See FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1095 (Fed. Cir. 2016) (citing *Bancorp Services, L.L.C. v. Sun Life Assurance Co.*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) ("[T]he fact that the required calculations could be performed more efficiently via a computer does not materially alter the patent eligibility of the claimed subject matter.") (alteration in original)); *see also Intellectual Ventures I LLC v. Erie Indemnity Co.*, 711 F. App'x 1012, 1017 (Fed. Cir. 2017) (unpublished) ("Though the claims purport to

accelerate the process of finding errant files and to reduce error, we have held that speed and accuracy increases stemming from the ordinary capabilities of a general-purpose computer do not materially alter the patent eligibility of the claimed subject matter.") (internal quotation marks and alteration omitted). Like the claims in *FairWarning*, the focus of claim 1 is not on an improvement in computer processors as tools, but on certain independently abstract ideas that use generic computing components as tools. *See FairWarning*, 839 F.3d at 1095.

That the recited method is for viewing a *medical* report describing *radiological* images does not, without more, integrate the abstract idea into a practical application, for merely generally linking the use of an abstract idea to a particular technological environment or field of use does not render the claimed invention any less abstract. *See Affinity Labs of Tex., LLC v. DirectTV, LLC*, 838 F.3d 1253, 1259 (Fed. Cir. 2016). *Accord Flook*, 437 U.S. at 584, 588–90, 596–97 (holding ineligible method for updating an alarm limit on a process variable, despite the process involving the catalytic chemical conversion of hydrocarbons). *See also* Guidance, 84 Fed. Reg. at 55 (citing MPEP § 2106.05(h)).

Nor is this invention analogous to that which the court held eligible in *McRO, Inc. v. Bandai Namco Games America, Inc.*, 837 F.3d 1299 (Fed. Cir. 2016) despite Appellant's arguments to the contrary (Appeal Br. 8–10; Reply Br. 2). There, the claimed process used a combined order of specific rules that rendered information in a specific format that was applied to create a sequence of synchronized, animated characters. *McRO*, 837 F.3d at 1315. Notably, the recited process *automatically animated characters* using particular information and techniques—an improvement over manual

three-dimensional animation techniques that was not directed to an abstract idea. *Id.* at 1316.

But unlike the claimed invention in *McRO* that improved how the physical display operated to produce better quality images, the claimed invention here merely uses generic computing components to search for unstructured report data related to structured report data, and indicate their commonalities. This generic computer implementation is not only directed to certain methods of organizing human activity and mental processes, but also does not improve a display mechanism as was the case in *McRO*. *See SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018) (distinguishing *McRO*).

Appellant's reliance on *BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016) (Appeal Br. 8–9) is likewise unavailing. There, the court held eligible claims directed to a technology-based solution to filter Internet content that overcame existing problems with other Internet filtering systems by making a known filtering solution—namely a "one-size-fits-all" filter at an Internet Service Provider (ISP)—more dynamic and efficient via individualized filtering at the ISP. *BASCOM*, 827 F.3d at 1351. Notably, this customizable filtering solution improved the computer system's performance and, therefore, was patent-eligible. *See id.* But unlike the filtering system improvements in *BASCOM* that added significantly more to the abstract idea in that case, the claimed invention here uses generic computing components to implement an abstract idea as noted previously.

We also find unavailing Appellant's contention that the claimed invention does not preempt related technologies. Appeal Br. 9. Where, as

here, the claims cover a patent-ineligible concept, preemption concerns "are fully addressed and made moot" by an analysis under the *Alice/Mayo* framework. *See Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015).

In conclusion, although the recited functions may be beneficial by searching for unstructured report data related to structured report data, and indicating their commonalities, a claim for a useful or beneficial abstract idea is still an abstract idea. *See id.* at 1379–80.

We, therefore, agree with the Examiner that claim 1 is directed to an abstract idea.

Claim 1: Alice/Mayo Step Two

Turning to *Alice/Mayo* step two, claim 1's additional recited element, namely the recited "processor," does not provide an inventive concept such that this additional element amounts to significantly more than the abstract idea when reading claim 1 as a whole. *See Alice*, 573 U.S. at 221; *see also* Guidance, 84 Fed. Reg. at 56. As noted above, the claimed invention merely uses generic computing components to implement the recited abstract idea.

To the extent Appellant contends that the recited limitations, including those detailed above in connection with *Alice* step one, add significantly more than the abstract idea to provide an inventive concept under *Alice/Mayo* step two (*see* Appeal Br. 9–10; Reply Br. 2–5), these limitations are not *additional* elements *beyond* the abstract idea, but rather are directed to the abstract idea as noted previously. *See BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018) (explaining that the Supreme Court in *Alice* "only assessed whether the claim limitations *other than the*

invention's use of the ineligible concept to which it was directed were well-understood, routine and conventional") (emphasis added); *see also* Guidance, 84 Fed. Reg. at 56 (instructing that *additional* recited elements should be evaluated in *Alice/Mayo* step two to determine whether they (1) *add* specific limitations that are not well-understood, routine, and conventional in the field, or (2) simply *append* well-understood, routine, and conventional activities previously known to the industry (citing MPEP § 2106.05(d)).

Rather, the recited "processor" is the only additional recited element whose *generic computing functionality* is well-understood, routine, and conventional. *See* Spec. 22 (noting that the processor in Figure 10 may be a general-use integrated circuit or general-purpose processor); *see also FairWarning*, 839 F.3d at 1096 (noting that using generic computing components like a *microprocessor* or user interface does not transform an otherwise abstract idea into eligible subject matter). *Accord* Ans. 5, 18–19 (concluding that the recited additional elements merely provide *conventional* computer functions that do not add meaningful limits to practicing the abstract idea, and that the additional elements merely recite generic computer structure whose *generic computer functions* are well-understood, routine, and conventional).

Our emphasis underscores that the Examiner's rejection was apparently premised on the notion that the *computer implementation* of the recited abstract idea was well-understood, routine, and conventional. *See id.* As noted above, this record is replete with evidence that such a computer implementation, namely a processor, was well-understood, routine, and conventional. Therefore, Appellant's contention that there is no evidence

that claimed elements *other than the processor* that are quoted on pages 9 and 10 of the Appeal Brief and pages 2 and 3 of the Reply Brief are well-understood, routine, and conventional is unavailing, for there is ample evidence on this record that the sole additional element—the processor—was well-understood, routine, and conventional.

Appellant's contention, then, that the Examiner allegedly did not comply with the evidentiary requirements under the April 2018 USPTO memorandum mandating these requirements for ineligibility rejections after *Berkheimer v. HP, Inc.*, 881 F.3d 1360, 1369 (Fed. Cir. 2018) (Reply Br. 3–5) is unavailing. To be sure, the Examiner must show—with supporting facts—that certain claim elements are well-understood, routine, and conventional where such a finding is made. *See Berkheimer*, 881 F.3d at 1369 (noting that whether something is well-understood, routine, and conventional to a skilled artisan at the time of the invention is a factual determination). In light of this factual determination, the USPTO issued a memorandum requiring that Examiners support a finding that an *additional element* of a claim is well-understood, routine, and conventional. Robert W. Bahr, *Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (Berkheimer v. HP, Inc.)*, USPTO, Apr. 19, 2018 ("*Berkheimer* Memo."), at 2–3 (noting that the *Berkheimer* decision clarifies the inquiry whether an *additional element* (or combination of *additional elements*) represents well-understood, routine, and conventional activity).

As noted previously, the recited "processor" is the only additional recited element whose *generic computing functionality* is well-understood, routine, and conventional. Therefore, to the extent that Appellant contends

that the Examiner failed to provide evidence that *all* quoted recited elements are well-understood, routine, and conventional (*see* Appeal Br. 9–10; Reply Br. 2–4), such an argument is not commensurate with the more limited scope of the Examiner's finding in this regard. In particular, Appellant's arguments are not commensurate with the Examiner's finding that the elements *other than the abstract idea*, specifically the *computer-based elements* which include the processor of claim 1, are the additional elements whose *generic computing functionality* is well-understood, routine, and conventional. *See* Ans. 5, 15 (noting that the claims use a "processor" or a computer to perform the recited features that *solely* uses a computer as a tool), 18–19.

As noted previously, there is ample evidence of this generic computing functionality in not only the case law cited previously, but also Appellant's own Specification. *See, e.g.*, *FairWarning*, 839 F.3d at 1096 (noting that using generic computing components like a *microprocessor* or user interface does not transform an otherwise abstract idea into eligible subject matter); Spec. 21–22 (describing generic computer components used to implement the invention). Therefore, the additional recited element does not add significantly more than the abstract idea to render the claim patent-eligible.

In conclusion, the additional recited element of claim 1—considered individually and as an ordered combination—does not add significantly more than the abstract idea to provide an inventive concept under *Alice/Mayo* step two. *See Alice*, 573 U.S. at 221; *see also* Guidance, 84 Fed. Reg. at 56.

Therefore, we are not persuaded that the Examiner erred in rejecting claim 1, and claims 2, 5–9, 11–14, and 16–21 not argued separately with particularity.

THE OBVIOUSNESS REJECTION

Regarding independent claim 20, the Examiner finds that Kanada discloses a report viewer comprising, among other things, a report analyzer configured to analyze free text of an unstructured report of a prior study of a patient to obtain plural interpretations, namely analyses, of the free text. *See* Ans. 7–8, 20. Although the Examiner acknowledges that Kanada's report analyzer does not search and analyze an unstructured report of the same patient, the Examiner cites Reiner as teaching this feature. Ans. 9, 20–21. The Examiner also acknowledges that (1) Kanada's unstructured report lacks plural imaging modalities, and (2) Kanada does not highlight the recited portion of the unstructured report's free text, but cites Esham and Bacon for teaching these respective features in concluding that the claim would have been obvious. Ans. 8–10.

Appellant argues that Kanada does not analyze an unstructured report's free text of a prior study of a same patient to obtain plural interpretations as claimed, but rather matches keywords. Appeal Br. 20–21; Reply Br. 5–7. Appellant adds that the Examiner's reliance on Reiner is misplaced because Reiner not only lacks attributes of a free text interpretation that includes an imaging modality, but Reiner's acknowledged unsuitability of unstructured or free text is said to teach away from the proposed combination. Appeal Br. 14. Appellant argues other recited limitations summarized below.

ISSUES

I. Under § 103, has the Examiner erred by finding that Kanada, Esham, Reiner, and Bacon collectively would have taught or suggested:

(1) a report analyzer configured to analyze free text of the recited unstructured report of a prior study of a patient to obtain plural interpretations of the free text, where the interpretations include the recited attributes as recited in claim 20 (the "report analyzer limitation")?

(2) the attribute differentiation recited in claim 21?

II. Is the Examiner's proposed combination of the cited references supported by articulated reasoning with some rational underpinning to justify the Examiner's obviousness conclusion? This issue turns on whether Reiner teaches away from the proposed combination.

ANALYSIS

Claim 20

We begin by noting that the Examiner's reliance on the secondary references to Esham and Bacon is undisputed in connection with the obviousness rejection of claim 20. Rather, as noted above, this dispute turns solely on the Examiner's reliance on Kanada and Reiner for teaching the report analyzer limitation, and their combinability. Therefore, we confine our discussion to these references.

As noted previously, the Examiner relies on Kanada for teaching many features of the recited report analyzer, including its ability to analyze free text of an unstructured report of a prior study to obtain interpretations or

analyses of that text, albeit for different patients—not the same patient. *See* Ans. 9, 20–21 (acknowledging this distinction). The Examiner, however, cites Reiner to cure that deficiency. *See id.*

Our emphasis on "analyses" above underscores that the Examiner construes the term "interpretations" as including Kanada's analyses of different patients' reports. On this record, we see no error in this interpretation.

First, the Specification does not define the term "interpretation," unlike other terms whose concrete definitions leave no doubt as to their meaning. *See* Spec. 6 (defining various terms). The Specification does, however, note that the report analyzer 310 in Figure 3 converts an unstructured radiology report into a collection of interpretations 320, where each interpretation has attributes that describe various aspects of a lesion, such as its laterality, locality, depth, shape, etc. Spec. 11–12. For example, an interpretation of the text "Bilateral breast ultrasound was performed. At the 10 o'clock position of the right breast, two contiguous cysts are present measuring in aggregate 1.1cm by 4.0mm" may include interpretations "(modality, US)" and "(laterality, right)" that match associated BIRADS descriptors. *See* Spec. 12.

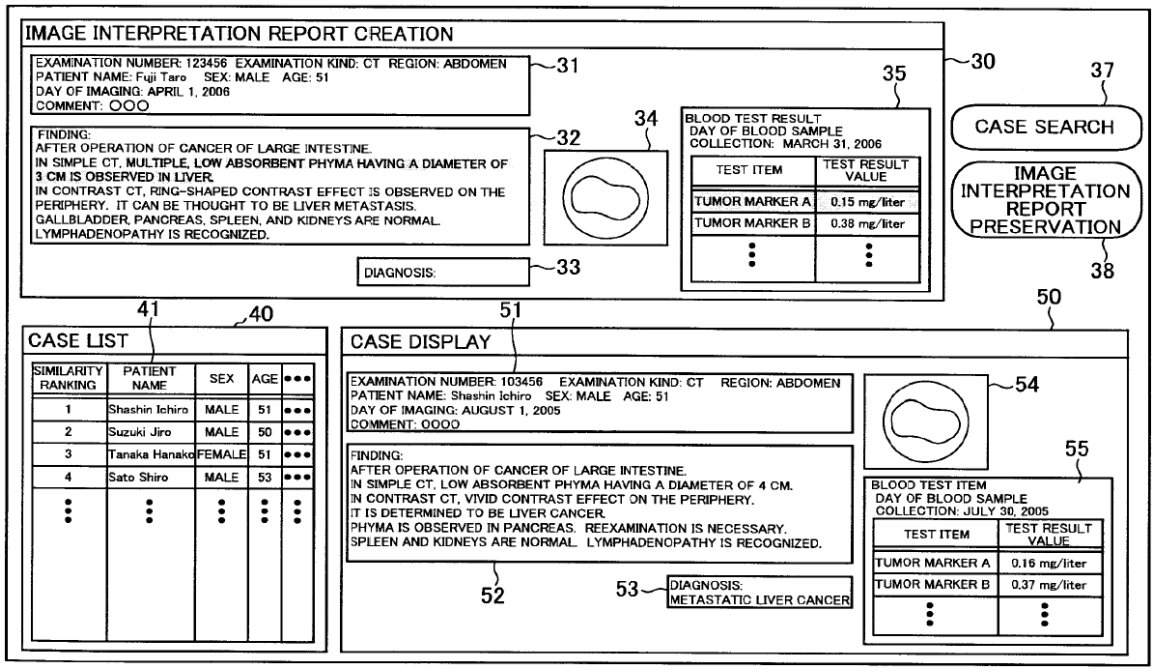
Although this description informs our understanding of the recited interpretations, the term is not so limited. Under its plain meaning, the term "interpretation" is defined, in pertinent part, as "[a] result of interpreting," and the term "interpret" is defined, in pertinent part, as "[t]o explain the meaning of" or, alternatively, "[t]o conceive the significance of; construe." THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 915 (4th ed. 2006).

Given this construction, we see no error in the Examiner's construing the term "interpretations" as including Kanada's analyses of different patients' reports. As shown in Kanada's Figure 1, the image interpretation support system includes an image interpretation report creating apparatus 1 that is detailed in Figure 3. *See* Kanada, col. 3, l. 57 – col. 4, l. 36; col. 5, ll. 23–37. As shown in Figure 3, Kanada's image interpretation report creating apparatus includes an image interpretation report input unit 14 connected to, among other things, an image interpretation report search key generating unit 15 that generates search keys for searching image interpretation report database 4a for cases based on information specified displayed in findings on display unit 100. Kanada, col. 7, ll. 18–27.

To this end, Kanada's image interpretation report input unit displays an image interpretation report creation screen, such as that shown in Kanada's Figure 5. As shown in Figures 5 and 6, Kanada's image interpretation report creation screen includes various information in connection with the examination of a patient ("Fuji Taro"), including an area 32 where a doctor can enter an associated finding. Kanada, col. 6, ll. 28–64. One such finding is shown in Kanada's Figure 10 that includes the text "multiple, low absorbent phyma having a diameter of 3 cm is observed in liver." Kanada, col. 9, ll. 55–66.

After the doctor clicks the case search button 37, the image interpretation report search key generating unit (1) extracts a keyword from the doctor's finding; (2) analyzes it by replacing the words with general words, etc.; and (3) collates the result with search condition setting data. Kanada, col. 9, ll. 45–60. In the above example with the quoted text from the finding in Kanada's Figure 10, the search keys "phyma in liver" and

"diameter 2 cm to 4 cm" are generated, and used to search the interpretation report database 4a, ultimately generating a list of cases sorted by similarity as shown in Figure 14 reproduced below. Kanada, col. 9, l. 60 – col. 10, l. 30; col. 10, l. 64 – col. 11, l. 34.



List of cases in the image interpretation report creation screen in Kanada's Figure 14

As shown above, the screen's case list displays cases for patients other than the current patient, "Fuji Taro," ranked by similarity, the most similar of which is the case for the patient "Shashin Ichiro." Given this functionality, we agree with the Examiner that Kanada at least suggests a report analyzer that analyzes free text of reports of prior studies of *different* patients to obtain interpretations of the free text, namely the analyses of that text based on the generated search keys and the associated results of that search. *See* Ans. 7–8, 20. Given the scope and breadth of the recited interpretations noted above, Appellant's contentions regarding the alleged

shortcomings of Kanada's keyword matching functionality (Appeal Br. 6–7; Reply Br. 12) is are not only incommensurate with the scope of the claim that does not preclude this functionality, but Appellant's arguments also do not persuasively rebut the Examiner's findings and conclusions for the reasons noted above and those indicated by the Examiner. *See* Ans. 20.

Appellant's arguments regarding Reiner's alleged shortcomings in this regard (Appeal Br. 13–14; Reply Br. 6–7) are also unavailing. In short, these arguments are not germane to the limited purpose for which Reiner was cited, namely merely to show that searching and retrieving an unstructured report by analyzing its words in connection with the *same* patient is known in the art, and that including the *same* patient's reports in addition to those of different patients in Kanada would have been at least an obvious variation in light of these collective teachings. *See* Ans. 9, 20. To the extent that Appellant contends that such an enhancement to Kanada would have been uniquely challenging or otherwise beyond the level of ordinarily skilled artisans, there is no persuasive evidence on this record to substantiate such a contention.

Nor do we find that Reiner teaches away from its combination with Kanada despite Appellant's arguments to the contrary. *See* Appeal Br. 14. Although Reiner's Background section notes that non-standardized report data elements undermine large-scale data mining efforts until the data is converted into structured and standardized data, and Reiner's invention performs such a conversion as noted in the Abstract, this disclosure still does not teach away from the particular *combination* of techniques proposed by the Examiner that involve, among other things, report analysis for both the *same and different patients* as noted above. In short, nothing on this record

indicates that Reiner criticizes, discredits, or otherwise discourages investigation into the invention claimed as required for teaching away. *See Norgren Inc. v. Int'l Trade Comm'n*, 699 F.3d 1317, 1326 (Fed. Cir. 2012); *see also In re Kahn*, 441 F.3d 977, 990 (Fed. Cir. 2006). We reach this conclusion emphasizing the Examiner's limited reliance on Reiner, namely for merely showing that searching and retrieving an unstructured report by analyzing its words in connection with the *same* patient is known in the art, and that including the *same* patient's reports in addition to those of different patients in Kanada would have been at least an obvious variation in light of these collective teachings. *See* Ans. 9, 20.

Therefore, we are not persuaded that the Examiner erred in rejecting claim 20.

Claim 21

We also sustain the Examiner's rejection of claim 21 reciting that the attribute associated with the one imaging modality of the plural imaging modalities is differentiated from attributes associated with other imaging modalities of the plural imaging modalities according to text in headers from the unstructured further report, wherein the one imaging modality includes at least one selected from a group comprising of ultrasound (US), mammography (MAM), X-ray, and magnetic resonance imaging (MRI). *See* Ans. 10, 23–24.

Despite Appellant's arguments to the contrary (Appeal Br. 14–16), Appellant does not persuasively rebut the Examiner's finding that Kanada's Figures 14 and 15 show header text in box 51 representing an attribute associated with an imaging modality, namely "CT." *See* Ans. 23. Nor does

Appellant persuasively rebut the Examiner's finding that Esham at least suggests a medical report that includes information derived from plural imaging modalities, such as "CT," "MR," and Ultrasound. *See* Ans. 23–24 (citing Esham ¶¶ 4, 17; Figs. 1–2). Given these collective teachings, we see no error in the Examiner's rejection because the cited references at least suggest the recited attribute differentiation. Appellant's arguments regarding Kanada's and Esham's individual shortcomings in this regard (Appeal Br. 15–16) are not only incommensurate with the scope of the claim, but they also do not show nonobviousness where, as here, the rejection is based on the cited references' collective teachings. *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Therefore, we are not persuaded that the Examiner erred in rejecting claim 21.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	References/ Basis	Affirmed	Reversed
1, 2, 5–9, 11–14, 16–21	101	Eligibility	1, 2, 5–9, 11–14, 16–21	
20, 21	103	Kanada, Esham, Reiner, Bacon	20, 21	

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)(1).

AFFIRMED

Add A Page | Delete Last Page

Notice of References Cited	Application/Control No. 13/641,901	Applicant(s)/Patent Under Reexamination	
	Examiner	Art Unit	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification	
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NON-PATENT DOCUMENTS

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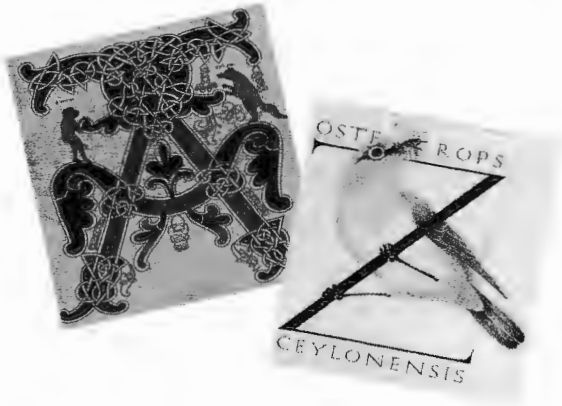

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…onal agreement, the calendar date is one day earlier

…•al•ism (ĭn′tər-năsh′ə-nə-lĭz′əm) *n.* **1.** The con… being international in character, principles, concern, …olicy or practice of cooperation among nations, espe… economic matters. **—in′ter•na′tion•al•ist** *n.*

…•al•ize (ĭn′tər-năsh′ə-nə-līz′) *tr.v.* **-ized, -iz•ing,** … international. **2.** To put under international control. **…•al•i•za′tion** (-lĭ-zā′shən) *n.*

… law *n.* A set of rules generally regarded and accepted …ons between states and nations. Also called *law of na-*

… Morse code *n.* A form of Morse code having no …dot and dash elements, commonly used for telegraph… outside the United States and Canada. Also called *con-*

… Phonetic Alphabet *n. Abbr.* **IPA** A phonetic …tic modifiers sponsored by the International Phonetic …ide a uniform and universally understood system for …eech sounds of all languages.

… pitch *n.* A sound wave frequency of 440 cycles per … the A above middle C. Also called *concert pitch.*

… relations *pl.n.* **1.** *(used with a sing. verb)* The … science that is concerned with the foreign affairs of … countries. **2.** *(used with a pl. verb)* Foreign affairs; … countries.

… style or **International Style** *n.* An influential … architecture that developed in Europe and the United … and 1930s, characterized chiefly by regular, unadorned … open interiors, and the use of glass, steel, and rein-

… System *n.* A complete, coherent system of units … work, in which the fundamental quantities are length, …, temperature, luminous intensity, amount of sub-

… unit *n. Abbr.* **IU 1.** The quantity of a biologically … such as a hormone or vitamin, required to produce a … **2.** A unit of potency for similarly active substances, … and accepted as an international standard.

… (ĭn-tûr′) *n., v. & adj.* Variant of **intern.**

… (ĭn′tər-nĕs′ēn′, -ĭn, -nē′sīn′) *adj.* **1.** Of or relating … tion, organization, or group. **2.** Mutually destruc… to both sides. **3.** Characterized by bloodshed or … necīnus, destructive, variant of *internecīvus*, from … : *inter-*, intensive pref.; see INTER– + *nex, nec-*, … Appendix I.]

… is a mistake not a mistake? In language at least, … question is "When everyone adopts it," and on rare … is in the dictionary." The word *internecine* presents a … it usually has the meaning "relating to internal … first recorded use in English, in 1663, it meant …." How it got from one sense to another is an inter… history of English. The Latin source of the word, …cīnus and *internecīvus*, meant "fought to the death, … derivative of the verb *necāre*, "to kill." The prefix *inter–* … the usual sense "between, mutual" but rather as an … "all the way, to the death." This piece of knowledge … Johnson, however, when he was working on his … the 18th century. He included *internecine* in his dic… understood the prefix and defined the word as "endeav… action." Johnson was not taken to task for this error. … dictionary was so popular and considered so author… became widely adopted as correct usage. The error … when *internecine* acquired the sense "relating … This story thus illustrates how dictionaries are often … norms and how the ultimate arbiter in language, … itself, is popular usage.

… (-nē′) *n.* One who is interned or confined, espe…

… (-nĕt′) *n.* An interconnected system of networks … computers around the world via the TCP/IP protocol.

… (ĭn′tər-nĕt′wûrk′) *n.* An interconnected system … computer networks.

… (ĭn′tər-nōōr′ōn′, -nyōōr′-) *n.* A nerve cell found … central nervous system that acts as a link between sen… motor neurons. **—in′ter•neu′ro•nal** (-nōōr′ə-nəl, …-nyōō-) *adj.*

… (-nĭst) *n.* A physician specializing in internal med… (MEDICINE) + –IST.]

… (-tûrn′mənt) *n.* **1.** The act of interning or confin… time. **2.** The state of being interned; confinement.

… (-nōd′) *n.* A section or part between two nodes, … **—in′ter•nod′al** (-nōd′l) *adj.*

… (-nōs′) *adv. & adj.* Between ourselves. [Latin *inter nōs*, us.]

… (ĭn′tər-nōō′klē-ər, -nyōō′-) *adj.* Located or oc…

… (ĭn′tər-nŭn′shəl, -sē-əl) *adj.* Linking two neurons … [INTERNUNCI(O) + –AL[1].] **—in′ter•nun′cial•ly**

in•ter•nun•ci•o (ĭn′tər-nŭn′sē-ō′, -nōōn′-) *n., pl.* **-os 1.** A Vatican diplomatic envoy or representative ranking just beneath a nuncio. **2.** A messenger or an agent; a go-between. [Italian *internunzio*, from Latin *internūntius*, mediator : *inter-*, inter- + *nūntius*, messenger; see NUNCIO.]

in•ter•o•cep•tor (ĭn′tər-ō-sĕp′tər) *n.* A specialized sensory nerve receptor that receives and responds to stimuli originating from within the body. [INTER(IOR) + (RE)CEPTOR.] **—in′ter•o•cep′tive** *adj.*

in•ter•of•fice (ĭn′tər-ô′fĭs, -ŏf′ĭs) *adj.* Transmitted or taking place between offices, especially those of a single organization: *an interoffice memo; interoffice conferences.*

in•ter•pen•e•trate (ĭn′tər-pĕn′ĭ-trāt′) *v.* **-trat•ed, -trat•ing, -trates** *—intr.* To become mixed or united by penetration: *planes that interpenetrate in a painting. —tr.* **1.** To penetrate reciprocally: *The streams interpenetrate each other at the rapids.* **2.** To penetrate thoroughly; permeate or pervade.

in•ter•per•son•al (ĭn′tər-pûr′sə-nəl) *adj.* **1.** Of or relating to the interactions between individuals: *interpersonal skills.* **2.** Existing or occurring between individuals: *interpersonal communication or conflict.* **—in′ter•per′son•al•ly** *adv.*

in•ter•phase (ĭn′tər-fāz′) *n.* The stage of a cell between two successive mitotic or meiotic divisions. **—in′ter•phase′** *v.*

in•ter•phone (ĭn′tər-fōn′) *n.* A telephone used in a small closed system of telephones: *"The sergeant lifted the interphone and told the pilot that the door was properly sealed"* (Tom Clancy).

in•ter•plan•e•tar•y (ĭn′tər-plăn′ĭ-tĕr′ē) *adj.* Existing or occurring between planets.

in•ter•play (ĭn′tər-plā′) *n.* Reciprocal action and reaction; interaction. ❖ *intr.v.* **-played, -play•ing, -plays** To act or react on each other; interact.

in•ter•plead (ĭn′tər-plēd′) *intr.v.* **-plead•ed, -plead•ing, -pleads** *Law* To submit one's claim to the process of interpleader. [Middle English *enterpleden*, from Anglo-Norman *enterpleder* : *enter-*, between (from Latin *inter-*; see INTER–) + *pleder*, to plead (variant of Old French *plaidier*; see PLEAD).]

in•ter•plead•er (ĭn′tər-plē′dər) *n. Law* A procedure to determine which of two parties making the same claim against a third party is the rightful claimant. [Anglo-Norman *enterpleder*, to interplead, interpleader. See INTERPLEAD.]

in•ter•po•late (ĭn-tûr′pə-lāt′) *v.* **-lat•ed, -lat•ing, -lates** *—tr.* **1.** To insert or introduce between other elements or parts. **2a.** To insert (material) into a text. **b.** To insert into a conversation. See synonyms at **introduce. 3.** To change or falsify (a text) by introducing new or incorrect material. **4.** *Mathematics* To estimate a value of (a function or series) between two known values. *—intr.* To make insertions or additions. [Latin *interpolāre, interpolāt-*, to touch up, refurbish, from *interpolis*, refurbished. See **pel-**[5] in Appendix I.] **—in•ter′po•la′tion** *n.* **—in•ter′po•la′tive** *adj.* **—in•ter′po•la′tor** *n.*

in•ter•pose (ĭn′tər-pōz′) *v.* **-posed, -pos•ing, -pos•es** *—tr.* **1a.** To insert or introduce between parts. **b.** To place (oneself) between others or things. **2.** To introduce or interject (a comment, for example) during discourse or a conversation. See synonyms at **introduce. 3.** To exert (influence or authority) in order to interfere or intervene: *interpose one's veto. —intr.* **1.** To come between things; assume an intervening position. **2.** To come between the parties in a dispute; intervene. **3.** To insert a remark, question, or argument. [French, from Old French *interposer*, to intervene, alteration (influenced by *poser*, to put, place) of Latin *interpōnere*, to put between : *inter-*, inter- + *pōnere*, to put; see **apo-** in Appendix I.] **—in′ter•pos′al** *n.* **—in′ter•pos′er** *n.* **—in′ter•po•si′tion** (-pə-zĭsh′ən) *n.*

in•ter•pret (ĭn-tûr′prĭt) *v.* **-pret•ed, -pret•ing, -prets** *—tr.* **1.** To explain the meaning of: *interpreted the ambassador's remarks.* See synonyms at **explain. 2.** To conceive the significance of; construe: *interpreted his smile to be an agreement; interpreted the open door as an invitation.* **3.** To present or conceptualize the meaning of by means of art or criticism. **4.** To translate orally. *—intr.* **1.** To offer an explanation. **2.** To serve as an interpreter for speakers of different languages. [Middle English *interpreten*, from Old French *interpreter*, from Latin *interpretārī*, from *interpres, interpret-*, negotiator, explainer. See **per-**[5] in Appendix I.] **—in•ter′pret•a•bil′i•ty, in•ter′pret•a•ble•ness** *n.* **—in•ter′pret•a•ble** *adj.*

in•ter•pre•ta•tion (ĭn-tûr′prĭ-tā′shən) *n.* **1.** The act or process of interpreting. **2.** A result of interpreting. **3a.** An explanation or conceptualization by a critic of a work of literature, painting, music, or other art form; an exegesis. **b.** A performer's distinctive personal version of a song, dance, piece of music, or role; a rendering. **—in•ter′pre•ta′tion•al** *adj.*

in•ter•pre•ta•tive (ĭn-tûr′prĭ-tā′tĭv) *adj.* Variant of **interpretive. —in•ter′pre•ta′tive•ly** *adv.*

in•ter•pret•er (ĭn-tûr′prĭ-tər) *n.* **1.** One who translates orally from one language into another. **2.** One who gives or expounds an interpretation: *"An actor is an interpreter of other men's words, often a soul which wishes to reveal itself to the world"* (Alec Guinness). **3.** *Computer Science* A program that translates an instruction into a machine language and executes it before proceeding to the next instruction.

in•ter•pre•tive (ĭn-tûr′prĭ-tĭv) also **in•ter•pre•ta•tive** (-tā′tĭv) *adj.* Relating to or marked by interpretation; explanatory. **—in•ter′pre•tive•ly** *adv.*

in•ter•pu•pil•lar•y (ĭn′tər-pyōō′pə-lĕr′ē) *adj.* Occurring between the pupils of the eyes: *interpupillary distance.*

in•ter•ra•cial (ĭn′tər-rā′shəl) *adj.* Relating to, involving, or representing different races: *interracial fellowship; an interracial neighborhood.*

in•ter•re•gion•al (ĭn′tər-rē′jə-nəl) *adj.* Of, involving, or connect-

International style
the Villa Savoye, Poissy, France, 1928–1931, by Le Corbusier

ă pat	oi boy
ā pay	ou out
âr care	o͝o took
ä father	o͞o boot
ĕ pet	ŭ cut
ē be	ûr urge
ĭ pit	th thin
ī pie	*th* this
îr pier	hw which
ŏ pot	zh vision
ō toe	ə about, item
ô paw	♦ regionalism

Stress marks: ′ (primary); ˌ (secondary); as in **dictionary** (dĭk′shə-nĕrˌē)