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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte BIN YIN and PAULUS HENRICUS ANTONIUS DILLEN I

Appeal 2017-009020
Application 13/144,379
Technology Center 2800

Before JAMES C. HOUSEL, MONTÉ T. SQUIRE, and
BRIAN D. RANGE, *Administrative Patent Judges*.

SQUIRE, *Administrative Patent Judge*.

DECISION ON APPEAL¹

Appellants² appeal under 35 U.S.C. § 134(a) from the Examiner's decision to reject claims 1 and 3–20, which constitute all the claims pending in this application.³ 35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6(b).

¹ In explaining our Decision, we refer to the Specification filed July 13, 2011 (“Spec.”); Final Office Action dated May 25, 2016 (“Final Act.”); Appeal Brief filed January 19, 2017 (“Appeal Br.”); Examiner’s Answer dated April 6, 2017 (“Ans.”); and Reply Brief filed June 6, 2017 (“Reply Br.”).

² Koninklijke Philips Electronics N.V. is identified as the real party in interest. Appeal Br. 1.

³ Claim 2 is canceled. Appeal Br. 1.

We AFFIRM.

The Claimed Invention

The claimed subject matter relates to a method and device for estimating energy consumption of a person, which uses a mathematical model based on acceleration data for estimating the person's energy consumption as a function of the actual performed activity and acceleration values. Abstract; Spec. 7. According to Appellants' Specification, the acceleration values are mathematically converted to an estimate of energy consumption by scaling a value of time integrated acceleration data with an activity scaling parameter. Spec. 7, ll. 14–16. The activity scaling parameters for different activities are determined off-line by comparing measured energy consumptions over a period of time with estimated energy consumptions over the same period, where the estimated values are determined using the mathematical model. *Id.* at 7, ll. 16–20; *see also* Abstract.

Claim 8 is illustrative of the claimed subject matter on appeal and is reproduced below from the Claims Appendix to the Appeal Brief:

8. A method for determining, on a portable device having at least one input port, a processor, and a memory having instructions for determining an energy expenditure stored thereon to be executed by the processor, the energy expenditure of a user performing a plurality of activities, the method comprising acts of:

for each activity of the plurality of activities of a plurality of users:

measuring energy expenditure values and acceleration data over a predetermined period using at least one sensor, wherein the acceleration data represents

movement of an accelerometer device worn by respective users of the plurality of users;

calculating by the processor values of energy expenditure of activities of the users in a loop to determine constant parameters and scaling parameters in accordance with a single mathematical model stored in the memory;

minimizing by the processor a difference between the measured energy expenditure values and the calculated energy expenditure values; and

determining by the processor an activity value of a current activity of the plurality of activities performed by a user of the plurality of users by accumulating acceleration data of the current activity from the user for a duration of the current activity,

wherein the minimizing act comprises performing an act of obtaining an activity count value for each data pair of the measured energy expenditure values and the acceleration data over the predetermined period of each user by accumulating the product of the scaling parameters and activity values over the activities during the predetermined period, whereby the scaling parameters adapt application of the single mathematical model to human-worn accelerometer data generated according to any of the plurality of activities.

Claims Appendix, fourth page (key disputed claim language italicized and bolded).

The References

The Examiner relies on the following prior art references as evidence in rejecting the claims on appeal:

Nishibayashi et al., US 2007/0238938 A1 Oct. 11, 2007
(hereinafter “Nishibayashi”)

Goris et al., US 2008/0281234 A1 Nov. 13, 2008
(hereinafter “Goris”)

Chen et al., *Improving energy expenditure estimation by using a triaxial accelerometer*, J. Appl. Physiol. 83:2112–2122 (1997)
(hereinafter “Chen”).

Choi et al., *Estimation of Activity Energy Expenditure: Accelerometer Approach*, Proceedings of the 2005 IEEE, Engineering in Medicine and Biology 27th Annual Conference, 3830–3833 (2005)
(hereinafter “Choi”).

The Rejections

On appeal, the Examiner maintains (Ans. 2) the following rejections:

1. Claims 1 and 3–20 are rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter (“Rejection 1”). Final Act. 2–13.
2. Claim 20 is rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Nishibayashi in view of Choi, Chen, and Goris (“Rejection 2”). Final Act. 14–18.

OPINION

Having considered the respective positions advanced by the Examiner and Appellants in light of this appeal record, we affirm the Examiner’s rejections based on the fact-finding and reasoning set forth in the Answer and Final Office Action, which we adopt as our own. We add the following and highlight and address specific findings and arguments below.

Rejection 1

Appellants argue claims 1 and 3–20 as a group. Appeal Br. 8, 19. We select claim 8 as representative and the remaining claims subject to the Examiner’s rejection stand or fall with claim 8. 37 C.F.R. § 41.37(c)(1)(iv).

The Examiner determines that Appellants' claimed invention is unpatentable under 35 U.S.C. § 101 because it is directed to non-statutory subject matter. Final Act. 2. In particular, the Examiner determines that claim 8 is directed to the abstract idea of an algorithm or mathematical relations (i.e., "a single mathematical model") for calculating values of energy expenditure of activities of the users to determine constant parameters and scaling parameters. *Id.* at 7. The Examiner finds that the recited steps are directed to "organizing data through mathematical correlations or algorithms, similar to the concepts found abstract previously by the courts." *Id.* at 3 (citing cases). The Examiner further finds that the claim does not include additional elements that are sufficient to amount to significantly more than the judicial exception because the additional elements are "necessary, routine, or conventional to facilitate the application of the abstract idea." *Id.* at 7.

For example, the Examiner finds that

The ports and memory are recited at a high level of generality and are necessary or conventional in connection with the use of the processor. The step of obtaining measurement of energy expenditure values and acceleration data is recited at a high level of generality, and is necessary for obtaining data for the abstract idea.

Final Act. 7. *See also* Ans. 5–6 (finding that the "measurement of acceleration data is a step which is now well-understood, routine, and conventional"); *id.* at 9–10; Spec. 1–2 (disclosing the use of known devices and methods in the art for measuring energy expenditure using acceleration data).

The Examiner determines that “[w]hen considered separately and in combination, the additional elements do not add significantly more to the exception” and thus, do “not meaningfully limit the claim.” Final Act. 7–8; *see also* Ans. 9–10. The Examiner further determines that the additional elements or combination of elements recited in the claims other than the abstract idea amount to no more than instructions for executing the idea using a general purpose computer. Final Act. 7 (citing *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2350 (2014)); *see also Elec. Power Grp. v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016)).

Appellants argue that the Examiner’s rejection should be reversed because the claims are not directed to an abstract idea, but instead, are directed to a “*Process, Machine, or Manufacture.*” Appeal Br. 10–11; *see also* Reply Br. 2–3. Appellants contend that, as opposed to an abstract idea, “claim 8 and its dependents are to a ‘process’ under Step 1” of the § 101 analysis. Appeal Br. 10. Appellants further contend that claim 8 is not directed to any judicial exception because the subject matter of the claim

is rooted in health management, addresses a specific problem of calculating energy expenditure for users performing a variety of different activities, is tied to particular structure, and improves the operation of a computing device.

Id. at 13.

Appellants also contend the Examiner has failed to identify an abstract idea “similar to a concept previously addressed by the courts” (*id.* at 10) and oversimplifies the claims by reducing “the many specific limitations of the claims to ‘math’” (*id.* at 12) (quoting *McRO, Inc. v. Bandai Namco Games America, Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016)).

Appellants argue that the claims recite significantly more than an abstract idea. Appeal Br. 15; *see also* Reply Br. 6. In particular, Appellants contend the claims “clearly do not seek to preempt any and all ways to estimate energy expenditure of a user” and thus, “leave[] ample room for activity and innovation under almost any characterization of an abstract idea.” Appeal Br. 15. Appellants also contend the claims do not tie up the field of energy expenditure estimation because “there are a myriad of other ways of ‘accounting for differences in measurements from multiple types of activities’ or ‘estimating energy expenditure.’” *Id.* at 16.

Lastly, Appellants argue the claims are directed to an improvement to the functioning of a computer because they “specifically recite that a single mathematical model is stored in memory and adapted to multiple types of activities” and “only enough memory is needed to store a single mathematical model, rather than a different model for each type of activity.” *Id.* at 17.

We do not find Appellants’ arguments persuasive of reversible error in the Examiner’s rejection. The Supreme Court’s decision in *Alice* identifies a two-step framework for determining whether claimed subject matter is judicially-excepted from patent eligibility under § 101. According to *Alice* step one, “[w]e must first determine whether the claims at issue are directed to a patent-ineligible concept,” such as an abstract idea. *Alice*, 134 S. Ct. at 2355.

Step two of the *Alice* framework is “a search for an ‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Id.* at 2355 (quoting *Mayo*

Collaborative Servs. v. Prometheus Labs., Inc., 566 U.S. 66, 72 (2012)). In applying step two, we must determine whether there are any “additional features” in the claims that constitute an “inventive concept,” *Alice*, 134 S. Ct. at 2357, and whether those “additional features” amount to more than merely “well-understood, routine, conventional activity.” *Mayo*, 566 U.S. at 79.

Beginning with the first step of the *Alice* framework, we look at claim 8 to determine whether it is directed to an abstract idea. Claim 8 recites a method for determining the energy expenditure of a user comprising the following principal steps: (1) “measuring energy expenditure values and acceleration data”; (2) “calculating by the processor values of energy expenditure of activities of the users . . . with a single mathematical model stored in the memory”; (3) “minimizing by the processor a difference between the measured energy expenditure values and the calculated energy expenditure values”; and (4) “determining by the processor an activity value of a current activity . . . by accumulating acceleration data.” Claims Appendix, fourth page.

The Specification discloses that the mathematical model is based on acceleration data for estimating the person’s energy consumption as a function of the actual performed activity and acceleration values and the acceleration values are mathematically converted to an estimate of energy consumption by scaling a value of time integrated acceleration data with an activity scaling parameter. Spec. 7. The Specification further discloses that the activity scaling parameters are determined off-line by comparing measured energy consumptions over a period of time with estimated energy consumptions using the mathematical model. *Id.* at 7. *See also id.* at 9–18

(disclosing mathematical models and formulas for performing calculations and determining parameters in accordance with claimed method).

Based on the language of the claim and the Specification, we concur with the Examiner that claim 8 is, at its core, directed to the abstract idea of a mathematical algorithm, i.e., calculating values of energy expenditure of activities of the users by collecting, processing, and mathematically manipulating data using a mathematical model. *Intellectual Ventures I LLC v. Capital One Financial Corporation*, 850 F.3d 1332, 1340 (Fed. Cir. 2017) (holding claims ineligible under § 101 where the “concept related to the collection, display, and manipulation of data”); *Elec. Power Grp. v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016) (holding that “collecting information, analyzing it, and displaying certain results of the collection and analysis” are “a familiar class of claims ‘directed to’ a patent-ineligible concept”).

The fact that the mathematical model relates to estimating energy consumption of a person as a function of the actual performed activity and acceleration values and the claimed invention may be implemented using general purpose computer equipment (i.e., “on a portable device having at least one input port, a processor, and a memory having instructions” and “executed by the processor”) does not render the claim patent-eligible or the underlying idea any less abstract. *See Alice*, 134 S. Ct. at 2358 (holding that “the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention”).

The Federal Circuit has explained that, in determining whether claims are patent-eligible under Section 101, “the decisional mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive

nature can be seen—what prior cases were about, and which way they were decided.” *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016). On the record before us, we agree with the Examiner’s determination that Appellants’ claims are, indeed, similar to those found to be patent-ineligible in prior cases, particularly because, as the Examiner finds the claimed invention is directed to “organizing data through mathematical correlations or algorithms, similar to the concepts found abstract previously by the courts.” Final Act. 3 (citing *Gottschalk v. Benson*, 409 U. S. 63, 67 (1972), *Parker v. Flook*, 437 U. S. 584, 594 (1978), *Diamond v. Diehr*, 450 U. S. 175, 188 (1981), *In re Grams*, 888 F.2d 835 (Fed. Cir. 1989), and *Digitech Image Tech., LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344, 1350–51 (Fed. Cir. 2014) as exemplary cases).

As the Examiner explains (Ans. 11), like the claims in *Parker v. Flook*, claim 8, for example, essentially employs mathematical algorithms to manipulate existing or collected information to generate additional information. *Flook*, 437 U.S. at 595 (“If a claim is directed essentially to a method of calculating, using a mathematical formula, even if the solution is for a specific purpose, the claimed method is nonstatutory.”).

In contrast, unlike the claims found to be non-abstract in prior cases, Appellants’ claimed invention is directed to the use of a mathematical algorithm for performing calculations and does not recite or provide an actual improvement to a particular computer technology. *See, e.g., McRO*, 837 F.3d at 1314 (finding claims not abstract because they “focused on a specific asserted improvement in computer animation”). In particular, as the Examiner finds (Ans. 5, 7–8) and unlike the improvements to a computer-related technology found to be patentable by the courts in *Enfish, LLC v.*

Microsoft Corporation, 822 F.3d 1327, 1335 (Fed. Cir. 2016) and *McRO*, claim 8 does not provide any improvement in the function or operation of the computer device or processor itself. Rather, as the Examiner explains (Ans. 5–6), the “on a portable device having at least one . . . processor” and “executed by the processor” recitations of the claims are merely present to efficiently perform the necessary calculations. *See Bancorp Services, LLC 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.”).

Moreover, the steps of “calculating by the processor values of energy expenditure of activities of the users,” “minimizing by the processor a difference between the measured energy expenditure values and the calculated energy expenditure values,” and “determining by the processor an activity value of a current activity” recited in claim 8 (steps (2), (3), and (4) enumerated above), because they principally involve use of a mathematical model to perform calculations, could each conceivably be performed using mental steps, pen, and paper. *See Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318 (Fed. Cir. 2016) (claims directed to an abstract idea, where “with the exception of generic computer-implemented steps, there is nothing in the claims themselves that foreclose them from being performed by a human, mentally or with pen and paper”); *see also Elec. Power Grp.*, 830 F.3d at 1354 (treating “analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category”).

Appellants' assertion that the claims are directed to an improvement to the functioning of a computer because they "specifically recite that a single mathematical model is stored in memory and adapted to multiple types of activities" and "only enough memory is needed to store a single mathematical model, rather than a different model for each type of activity" (Appeal Br. 17) is not persuasive of reversible error in the Examiner's rejection because it is conclusory and Appellants' do not provide an adequate technical explanation to support it. *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984).

Turning to the second step of *Alice*, we determine claim 8 does not contain an inventive concept sufficient to "transform the nature of the claim' into a patent-eligible application." *Alice*, 134 S. Ct. at 2355. In particular, based on the fact-finding and reasons provided by the Examiner in the Answer and the Final Office Action (Ans. 2–13; Final Act. 2–4), we concur with the Examiner's determination that each of the steps of claim 8, considered both individually and as an ordered combination, is conventional, and does not amount to significantly more than the implementation of the abstract idea of determining the energy expenditure of a user by collecting, processing, and mathematically manipulating data using a mathematical model. *See Alice*, 134 S. Ct. 2357 (finding "conventional steps" insufficient to supply an "inventive concept").

As the Examiner finds (Final Act. 7; Ans. 8–10), claim 8 recites and the Specification discloses a general purpose computer and generic/conventional computing components for performing the steps of the method. *See, e.g.*, Spec. 8 (disclosing general purpose "processor 150, for example a digital processing unit . . . used to process acceleration data"), *id.*

at 8 (disclosing use of computer memory, i.e., “data storage 151 for storing constant parameters . . . and activity scaling parameters”), *id.* at 8 (describing use of ports, i.e., “data input 110”). Moreover, the claimed invention does not require or recite a special/unique ordered combination of method steps for performing the mathematical computations. Rather, as discussed above, we find that the recited steps are nothing more than instructions to gather and manipulate data implemented using conventional data processing and computer equipment. *Mayo*, 566 U.S. at 82 (explaining that pre- or post-solution activities that are “purely ‘conventional or obvious . . . can[not] transform an unpatentable principle into a patentable process’”) (quoting *Parker v. Flook*, 437 U.S. at 589–90).

Appellants also do not adequately explain what element or combination of elements transforms the nature of the claim into significantly more than a patent upon the ineligible concept itself. Appellants’ assertions that the claims “do not seek to preempt any and all ways to estimate energy expenditure of a user” and “leave[] ample room for activity and innovation under almost any characterization of an abstract idea” (Appeal Br. 15) and do not tie up the field of energy expenditure estimation because “there are a myriad of other ways of ‘accounting for differences in measurements from multiple types of activities’ or ‘estimating energy expenditure’” (*id.* at 16) are not persuasive because they are conclusory and Appellants does not provide an adequate technical explanation to support them. *De Blauwe*, 736 F.2d at 705. Moreover, a patent-ineligible abstract idea is not transformed into a patent-eligible invention merely by “limit[ing] the use of [an abstract idea] ‘to a particular technological environment.’” *Alice*, 134 S. Ct. at 2358 (quoting *Bilski v. Kappos*, 561 U.S. 593, 610–11 (2010)).

We, therefore, determine that claim 8 is directed to an abstract idea and fails to recite an inventive concept sufficient to transform the abstract idea into patent-eligible subject matter.

Although independent claims 1 and 20 are directed to a “device for determining an energy expenditure of a user” (claim 1) and a “device for estimating energy expenditure of a user” (claim 20), respectively, each of these claims recites limitations similar to the method steps of claim 8. *Compare* claim 8 (Claims Appendix, fourth page) *with*, claim 1 (Claims Appendix, first and second pages) and claim 20 (Claims Appendix, seventh and eighth pages).

Thus, for principally the same reasons discussed above with respect to claim 8, we determine that claims 1 and 20 are likewise directed to the abstract idea of collecting, analyzing, and mathematically manipulating data and do not contain an inventive concept sufficient to transform the nature of the claim into a patent-eligible application. *Alice*, 134 S. Ct. at 2355; *see also Intellectual Ventures I*, 838 F.3d at 1340 (holding method, systems, and apparatus claims of a patent “ineligible under § 101 for reciting similar data manipulation steps”).

Accordingly, we affirm the Examiner’s rejection of claims 1 and 3–20 under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

Rejection 2

Claim 20 recites:

A device for estimating energy expenditure of a user using wearable accelerometer data, the device comprising:

an interface for receiving acceleration data from an accelerometer device that is worn by a user;

a memory that stores:

a single mathematical model for processing input acceleration data into an output energy expenditure estimate for accelerating data gathered according to any of a plurality of activities performed by the user, and

a plurality of scaling parameters correlated to respective ones of the plurality of activities, wherein the scaling parameters are determined by minimizing a difference between an estimation energy expenditure value and a measured energy expenditure value and adapt the single mathematical model to accelerometer data generated according to any of the plurality of activities; and

a processor in communication with the interface and the memory, the processor being configured to:

receive current acceleration data via the interface,

determine a current activity of the plurality of activities to which the current acceleration data corresponds,

retrieve a scaling parameter of the plurality of scaling parameters corresponding to the determined current activity, and

apply the single mathematical model to the current acceleration data to obtain a current energy expenditure value, wherein application of the single mathematical model comprises:

multiplying the current acceleration data by the retrieved scaling parameter to obtain scaled acceleration data, whereby the retrieved scaling parameter adapts the application to the single mathematical model to the current activity of the plurality of activities.

Claims Appendix, seventh and eighth pages.

The Examiner determines that the combination of Nishibayashi, Choi, Chen, and Goris suggests a device satisfying all of the limitations of claim 20 and thus, concludes that the combination would have rendered the claim obvious. Final Act. 14–18 (citing Nishibayashi, Abstract, ¶¶ 44, 47, 58, 60, 63, Figs. 1, 6; Choi 3831; Chen 2114–2116; Goris ¶ 11).

Appellants argue that the Examiner’s § 103 rejection of claim 20 should be reversed because

no combination of Nishibayashi, Choi, Chen, and Goris teaches or suggests a device for estimating energy expenditure of a user using wearable accelerometer data that includes retrieving a scaling parameter corresponding to a current activity from a plurality of scaling parameters and multiplying acceleration data by the retrieved scaling parameter to obtain scaled acceleration data.

Appeal Br. 20–21. Appellants argue that none of the cited references teaches or suggests activity-based scaling of acceleration data. *Id.* at 21–22. In particular, Appellants contend that: (1) there is “no discussion of scaling parameters that are correlated to a specific activity” in Nishibayashi (*id.* at 21); (2) Choi does not teach or suggest “activity-based scaling of energy expenditure data” (*id.* at 21–22); and (3) neither Chen nor Goris teaches or suggests activity-based scaling of acceleration data using scaling parameters that correspond to a particular activity (*id.* at 22).

We do not find Appellants’ arguments persuasive of reversible error based on the fact-finding and reasoning provided by the Examiner at pages 13–16 of the Answer and pages 14–18 of the Final Office Action. On the record before us, we find that a preponderance of the evidence and sound technical reasoning support the Examiner’s analysis and determination that

the combination suggests a device satisfying all of the limitations of claim 20, and the Examiner's conclusion that the combination would have rendered the claim obvious. Nishibayashi, Abstract, ¶¶ 44, 47, 58, 60, 63, Figs. 1, 6; Choi 3831; Chen 2114–2116; Goris ¶ 11.

The Examiner also provides a reasonable basis and identifies a preponderance of the evidence in the record to evince why one of ordinary skill would have combined the teachings of the cited references to arrive at Appellants' claimed invention. Final Act. 17–18. *See also KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 420 (2007) (explaining that any need or problem known in the art can provide a reason for combining the elements in the manner claimed).

Appellants fail to direct us to sufficient evidence or provide an adequate technical explanation to establish why the Examiner's articulated reasoning for combining the teachings of the prior art to arrive at the claimed invention lacks a rational underpinning or is otherwise based on some other reversible error.

We do not find Appellants' contention that there is “no discussion of scaling parameters that are correlated to a specific activity” in Nishibayashi persuasive for the well-stated reasons provided by the Examiner at pages 14–15 of the Answer. As the Examiner finds (Ans. 21) and Appellants do not rebut, the coefficient or factor (i.e., $b_2 * W$) of Nishibayashi's model (*see* Nishibayashi ¶ 63) corresponds to the “scaling parameter” recited in the claim. *See also* Final Act. 15–16. As the Examiner further finds (Ans. 15) and Appellants do not rebut, coefficient “a” of Choi's model (*see* Choi 2831) likewise corresponds to the “scaling parameter” recitation of claim 20.

Appellants' contention that Choi does not teach or suggest activity-based scaling of energy expenditure data (Appeal Br. 21–22) is equally unpersuasive. As the Examiner finds (Ans. 15) and contrary to what Appellants argue, Choi does teach activity-based scaling of energy expenditure estimation data as claimed. *See* Choi 3831 (disclosing that “[t]he coefficients, a and b were determined at each subject and each activity type” and “perform[ing] a linear regression to estimate the linear model for each activity type of walking and running”), 3830 (discussing “the dependency of calorie cost upon activity type” and “the differences of the calorie–activity relationship on activity type”). As the Examiner further finds (Ans. 15), based on Choi’s disclosures that the coefficients are “functions of gender, age, height, and mass” (Choi 3831) and of differences based on activity type (*id.* at 3830), the reference would have taught or suggested to one of ordinary skill that scaling coefficients depend on the specific type of activity undertaken and different coefficient values are required for different types of activity.

Appellants’ arguments regarding the Chen and Choi references and that neither reference teaches or suggests activity-based scaling of acceleration data (Appeal Br. 21–22) are not persuasive because they are premised on what each reference teaches individually, and not the combined teachings of the references as a whole and what the combined teachings would have suggested to one of ordinary skill in the art. One cannot show non-obviousness by attacking references individually where the rejection is based on a combination of references. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Appellants’ arguments in this regard are misplaced because, as discussed above, the Examiner relies on Choi for teaching activity-based

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scaling of acceleration data (Ans. 15–16) and not on Chen or Goris for this feature.

Accordingly, we affirm the Examiner’s rejection of claim 20 under 35 U.S.C. § 103 as obvious over the combination of Nishibayashi, Choi, Chen, and Goris.

DECISION/ORDER

The Examiner’s rejections of claims 1 and 3–20 are affirmed.

It is ordered that the Examiner’s decision is affirmed.

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

AFFIRMED