THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 52

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte KEN-ICHI ISO

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Appeal No. 1997-3914
Application 08/384,457

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ON BRIEF

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Before MARTIN, BARRETT, and HECKER, Administrative Patent Judges.

HECKER, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 9 through 15, all claims pending in the application.

The invention relates to a method of generating reference patterns for a new speaker in a speech recognition system.

Representative independent claim 9 is reproduced as follows:

9. A method of generating reference patterns for a new speaker in a speech recognition system including a plurality of existing speakers, where the new speaker's speech will be compared with reference patterns obtained in advance from each of said plurality of existing speakers in order to recognize the new speaker's speech, the method comprising the steps of:

(a) generating a plurality of sets of speech recognition reference pattern data wherein each of said sets contain data representing more than one sound, one set of reference pattern data for each of said plurality of existing speakers by using speech utterance data from each of said plurality of existing speakers;

(b) analyzing said plurality of sets of reference pattern data; and

(c) generating a set of reference pattern data for said new speaker based only on the results of the analysis of said analyzing step (b) and on special utterance data from said new speaker which correspond to only a portion of said one set of reference pattern data, said special utterance data being substantially less than said speech utterance data from each of said plurality of existing speakers used in said generating step (a).

The Examiner relies on the following reference:

Gillick 4,914,703 Apr. 3, 1990 (filed Dec. 5, 1986)

Claims 9 through 15 stand rejected under 35 U.S.C. § 103 as being unpatentable over Gillick[1].

Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the brief, reply brief[2], answer and supplemental answer[3] for the respective details thereof.

OPINION

After a careful review of the evidence before us, we agree with the Examiner that claims 9 through 14 are properly rejected under 35 U.S.C. § 103. Thus, we will sustain the rejection of these claims but we will reverse the rejection of claim 15 on appeal for the reasons set forth ***infra***.

At the outset, we note that Appellant has indicated on page 3 of the brief the claims stand or fall together in two

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[1] Although claim 15 is not indicated in the statement of the statutory basis of the rejection (both in the final rejection and the Examiner's Answer), the rejection of claim 15 has been argued by both Appellant and the Examiner in all appeal documents, and is clearly understood as being included in the final rejection.

[2] A second reply brief, paper no. 50 was denied entry and will not be considered by us.

[3] The supplemental answer, paper no. 49, is labeled "Response to Reply Brief".

groups. Group I includes claims 9 through 14, and we will treat claim 9 as the representative claim. Group II includes claim 15.

With respect to claim 9, the Examiner reasons that Gillick teaches everything claimed except, "said sets contain data representing more than one sound". However, the Examiner explains, Gillick teaches that cluster spellings are used for words, and it is well known in the art that words contain multiple sounds. The Examiner points to Figures 9 and 10 of Gillick as illustrating that words are made up of multiple sounds linked together. Therefore, the Examiner states, it would have been obvious for a person having ordinary skill in the pertinent art, at the time the invention was made, that Gillick teaches that his words are organized sets of sounds. (Answer-pages 3 and 4.)

The Appellant argues that the cluster spellings of Gillick do not represent generated speech recognition reference pattern data where one set of reference pattern data is generated **for each of a plurality of existing speakers**,

rather the cluster spellings are not associated with any one individual. (Brief-pages 4 and 5.) Appellant states:

> In other words, in step (a) of claim 9, a reference pattern is generated for each speaker. If the number of existing speakers is, for example, 100, an independent reference pattern is separately generated for each of the 100 speakers, indicating that reference patterns being 100 in total are generated. On the other hand, Gillick describes at column 13 that sound data pieces uttered by many speakers are subjected to clustering to generate a single reference pattern. Thus, Gillick is totally different from the present invention. (Brief-pages 5 and 6.)

During prosecution, the Patent and Trademark Office is required to give claims their "broadest reasonable interpretation", consistent with the specification. In re Morris, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997). Appellant indicates that Gillick generates a single reference pattern from many speakers. However, to do so, we note, Gillick must first gather sound reference data from each speaker. As stated in Gillick:

> Once this is done, the clustering process shown in FIG. 7 can take place. As is described in greater detail in application Ser. No. 862,275, the method of FIG. 7 concatenates each of the corresponding node models 20A **produced by different**

> **speakers for a given word** into a parallel node model 60. (Column 11, lines 37-42.) (Emphasis added.)

It is this intermediate step of Gillick that meets the claim language of having "one set of reference pattern data for each of said plurality of existing speakers". We read (b) of claim 9, the analyzing step, as part of the "concatenating" which places the multi-speaker information into a single reference pattern. In this manner, 100 speakers in Gillick would have produced 100 node models 20A from 100 different speakers for a given word. Then, these 100 patterns (node models 20A) would be concatenated as part of the analyzing step into the single reference pattern acknowledged by Appellant supra. Thus, Appellant's step (a) language is met by Gillick.

With respect to step (b) of claim 9, Appellant argues, "because Gillick does not teach or suggest generating the plurality of sets of reference pattern data, one set for each of the existing speakers, as required by step (a) of Claim 9, Gillick necessarily fails to teach or suggest analyzing the sets of reference pattern data." (Brief-page 6.)

However, as we have noted supra, Gillick does teach generating the plurality of sets of reference pattern data,

one set for each of the existing speakers, as an intermediate step in generating a single pattern. The concatenating for this generation of a single pattern is considered as part of Appellant's analyzing step (b). Thus, Appellant's argument regarding step (b) in not persuasive.

In much the same fashion, Appellant argues that step (c) of claim 9 is not met because step (b) is not met. (Brief-top of page 7.)

However, since we have found Gillick to meet step (b) of claim 9, it follows that Appellant's argument regarding step (c) is similarly unpersuasive.

We note that as a result of Appellant's invention, Appellant's new speaker requires less data for speech recognition than the data collected from each of the existing speakers (last part of claim 9). This result is also met by Gillick (as noted by the Examiner) wherein it states:

> But, by using cluster spellings and cluster models of the type described above, an end user can train up a large vocabulary system by speaking a relatively small percent of its vocabulary words. (Column 13, lines 26-29.)

As pointed out by our reviewing court, we must first determine the scope of the claim. "[T]he name of the game is the claim." ***In re Hiniker Co.***, 150 F.3d 1362, 1369, 47 USPQ2d 1523,1529 (Fed. Cir. 1998). In view of our discussion supra, Gillick reads of Appellant's claim language, therefore, we will sustain the Examiner's rejection of claim 9, and likewise claims 10 through 14 which stand or fall in the same group.

Appellant argues with respect to claim 15 that Gillick does not meet the claim requirement of the correlation parameter being a correlation coefficient between a probability distribution (μ_i) in an acoustic model of one phoneme and another probability distribution (μ_j) in an acoustic model of another phoneme. (Brief-page 8.)

The Examiner responds regarding claim 15, "The use of 'probability distribution' in acoustic models is shown in figure 11 of Gillick. See also figures 2B, 3A and 6." (Answer-page 4.) Also, the Examiner points to figure 2A and notes the that values of MU (μ) are illustrated in figure 3A. (Answer-page 6.)

We have reviewed the figures indicated by the Examiner and find several probability distribution curves illustrated. However, without further illumination by the Examiner, we are at a loss to understand how they meet the language of claim 15.

We are not inclined to dispense with proof by evidence when the proposition at issue is not supported by a teaching in a prior art reference, common knowledge or unquestionable demonstration. Our reviewing court requires this evidence in order to establish a ***prima facie*** case. ***In re Knapp-Monarch Co.***, 296 F.2d 230, 232, 132 USPQ 6, 8 (CCPA 1961); ***In re Cofer***, 354 F.2d 664, 668, 148 USPQ 268, 271-72 (CCPA 1966). Thus, we will not sustain the Examiner's rejection of claim 15.

In view of the foregoing the decision of the Examiner rejecting claims 9 through 14 under 35 U.S.C. § 103 is affirmed; however, the decision of the Examiner rejecting claim 15 under 35 U.S.C. § 103 is reversed.

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

AFFIRMED-IN-PART

John C. Martin Administrative Patent Judge	)	
Lee E. Barrett Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
Stuart N. Hecker Administrative Patent Judge	)	

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