

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LEE G. DOVE and GRAHAM I. JOHNSON

Appeal No. 2001-2696
Application No. 08/950,230

ON BRIEF

Before RUGGIERO, DIXON, and GROSS, Administrative Patent Judges.
RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal from the final rejection of claims 1-5 and 7-12, which are all of the claims pending in the present application. Claim 6 has been canceled.

The disclosed invention relates to the development of a computer model of consumer behavior in a transaction environment such as the movement of customers around a bank branch. A number of agents, which model the behavior of humans, are created, the agents being genetically encoded with drives which correspond to

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transaction needs in a particular environment such as the need for cash in a financial environment. The behavior of the agents, which interact with each other and with their environment, is compared with actual human behavior and the best matched agents are selected. A computer simulation is repeated until the required level of comparison with real human behavior is reached.

Claim 1 is illustrative of the invention and reads as follows:

1. A method of generating a model of customer behavior in a transaction environment comprising the steps of:

(a) selecting a software development tool incorporating at least one artificial life algorithm and capable of constructing a plurality of agents each having at least one drive;

(b) defining at least one drive for each agent which is matched to a transaction-related need; and

(c) genetically encoding the defined drives.

The Examiner relies on the following prior art:

Dave Cliff (Cliff), Where Creatures Came From: A review of research literature relevant to CyberLife™ technology, prepared for NCR Financial Systems Ltd, pp. 1-46 (Univ. of Sussex, Brighton, United Kingdom, April 1997).

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Claims 1-5 and 7-12, all of the appealed claims, stand finally rejected under 35 U.S.C. § 102(a) as being anticipated by Cliff.¹

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the Briefs² and Answer for the respective details.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the Examiner and the evidence of anticipation relied upon by the Examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, Appellants' arguments set forth in the Briefs along with the Examiner's rationale in support of the rejection and arguments in rebuttal set forth in the Examiner's Answer.

It is our view, after consideration of the record before us, that the Cliff reference does not fully meet the invention as set

¹ At page 2 of the Answer, the Examiner indicates that the 35 U.S.C. § 112, first paragraph, rejection of claims 7 and 8 has been withdrawn.

² The Appeal Brief was filed November 20, 2000 (Paper No. 9). In response to the Examiner's Answer dated February 13, 2001 (Paper No. 10), a Reply Brief was filed April 17, 2001 (Paper No. 11), which was acknowledged and entered by the Examiner as indicated in the communication dated July 3, 2001 (Paper No. 12).

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forth in claims 1-5 and 7-12. Accordingly, we reverse.

We note that anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.), cert. dismissed, 468 U.S. 1228 (1984); W.L. Gore & Assocs. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

With respect to each of the appealed independent claims 1, 5, 7, 9, and 11, the Examiner attempts to read the various limitations on the disclosure of Cliff. In particular, the Examiner points to various excerpts at pages 4, 5, 7, 18, and 21-23 of the disclosure of Cliff.

After reviewing the Cliff reference in light of the arguments of record, we are in general agreement with Appellants' position as stated in the Briefs. With respect to independent claim 1, we agree with Appellants (Brief, pages 8 and 9) that the Examiner has not shown how the cited portions of the Cliff reference correspond to several key features of claim 1. In

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particular, we fail to see how the generalized discussion of genetic algorithms at pages 21 and 23 of Cliff relate to the specifically claimed feature of defining a drive for each agent that is mapped to a transaction-based need. Further, although the cited passages from Cliff discuss generalized teachings of genetic encoding, we find no specific indication as to how such encoding would be applied to the defined transaction-based need drives.

Similarly, with respect to independent claim 5, we agree with Appellants (Brief, page 13) that it is not evident as to how the portions of Cliff cited by the Examiner, i.e., page 21, second paragraph and page 22, second paragraph, describe the interaction of selected agents with different transaction environments as claimed. While the Examiner's response (Answer, pages 8 and 9) cites further excerpts from Cliff (page 4, last paragraph and page 11, third paragraph), we do not see any relevant correlation with the language of claim 5. In particular, Cliff's generalized discussion of the matching of simulator results with real human behavior and the survival

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competition of agents does not, in our view, have any relevant correspondence to the claimed interaction of selected agents with different transaction environments.

We also find that the Examiner has not adequately shown how the cited page 7 excerpt from Cliff corresponds to the claimed monitoring of agent-models as they interact with a financial institution environment and the subsequent selection of agent-models based on the actual interaction as set forth in appealed independent claims 7 and 9. It is our opinion that, even assuming, arguendo, that page 7 of Cliff describes the interaction of an agent-model with a financial institution, we find no disclosure of any selection of agent-models based on the interaction. While the Examiner suggests (Answer, page 9) that the operation discussed at page 7 of Cliff is the ". . . result of genetic algorithm process of mutation and selection . . . , " we find that any indication that the genetic algorithm generalities discussed in other parts of the Cliff disclosure actually apply to the particular example discussed at page 7 of Cliff is a result of unwarranted and unsupported speculation on the part of the Examiner.

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Lastly, we also do not sustain the Examiner's 35 U.S.C. § 102(a) rejection based on Cliff of appealed independent claim 11. This claim is directed to the modeling of customer behavior in a financial environment in which, after a first simulation, simulated people from a group which has interacted with a financial environment are selected and a second simulation is performed with the selected people in another financial environment. While the last paragraph of page 4 of Cliff, cited by the Examiner, describes in general terms the simulation of humans in a particular environment, we agree with Appellants that there is no selection step in this or other portions of Cliff that would satisfy the particular requirements of claim 11. Although the Examiner reiterates the suggestion (Answer, page 9) that the selection produced by the genetic algorithm process discussed elsewhere in the Cliff publication would naturally apply to the discussion of environment simulation at pages 4 and 7 of Cliff, we find no support, and the Examiner has provided none, for this conclusion. The Examiner must not only make requisite findings, based on the evidence of record, but must

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also explain the reasoning by which the findings are deemed to support the asserted conclusion. See In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002).

In view of the above discussion, since all of the claim limitations are not present in the disclosure of Cliff, we do not sustain the Examiner's 35 U.S.C. § 102(a) rejection of independent claims 1, 5, 7, 9, and 11, nor of claims 2-4, 8, 10, and 12 dependent thereon.³

³ We make the observation that, while Appellants' disclosure is directed generally to a computer-based implementation of a method of modeling human behavior, the human behavior modeling method set forth in claim 5 is not limited to any computer-based implementation. Further, the language of claim 5 raises a question as to whether the claimed method is directed merely to an abstract idea that is not tied to a technological art, environment, or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. § 101. A review of the prosecution history in this application reveals that the issue of non-statutory subject matter was not raised by the Examiner. Since we have no non-statutory subject matter rejection before us, we decline to rule on the merits of any such rejection.

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In summary, we have not sustained the Examiner's 35 U.S.C. § 102(a) rejection of any of the claims on appeal. Accordingly, the decision of the Examiner rejecting claims 1-5 and 7-12 is reversed.

REVERSED

JOSEPH F. RUGGIERO)	
Administrative Patent Judge)	
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JOSEPH L. DIXON)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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ANITA PELLMAN GROSS)	
Administrative Patent Judge)	

JFR:hh

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MICHAEL CHAN
NCR CORPORATION LAW DEPT.
INTELLECTUAL PROPERTY SECTION ECD 2
101 WEST SCHANTZ AVE.
DAYTON, OH 45479-0001